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Chandrakant Agarwal



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Chandrakant Agarwal

SAP® CRM

Business Processes and Configuration

Dear Reader,

Fostering relationships with customers and business partners is both more vital and more complex than ever. Influenced by technological innovations and social media platforms, the channels of communication between organizations and their customers have grown dramatically over the years. Now more than ever, companies are relying on software to consolidate and streamline business processes and reach customers over myriad media. SAP Customer Relationship Management (SAP CRM) is one of those software solutions that seeks to solve the customer service issues of the modern world.

In this book, SAP CRM expert Chandrakant Agarwal guides you through the CRM business processes and configurations within SAP CRM, including core functions for sales, marketing, and services. As you follow along, you'll learn how to manage the entire sales/service cycle, from lead and opportunity management to business transactions to post-service follow-ups, and all of the implementation steps in between. With additional information on SAP Cloud for Customer and the latest SAP Fiori apps you'll be up-to-date on the latest CRM trends!

What did you think about *SAP CRM: Business Processes and Configuration*? Your comments and suggestions are the most useful tools to help us make our books the best they can be. Please feel free to contact me and share any praise or criticism you may have.

Thank you for purchasing a book from SAP PRESS!

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- ▶ SAP Service Marketplace (<http://service.sap.com>)
- ▶ SAP Help Portal (<https://help.sap.com>)

Chandrakant Agarwal

SAP CRM Solutions Architect

SAP Customer Relationship Management supports consumer-driven businesses in their marketing, sales, and service processes. This chapter provides an overview of SAP CRM architecture, functions, and applications.

1 Introduction to SAP CRM

In this chapter, we'll provide an overview of SAP Customer Relationship Management (SAP CRM) and some of the key SAP CRM functions. In addition, we'll present information on how a business can determine its goals using SAP CRM, the benefits of using SAP CRM, and details about the SAP CRM architecture view. Later in this chapter, you'll find further information about core SAP CRM areas (i.e., marketing, sales, and service) with SAP CRM applications used by industry verticals.

1.1 Customer Relationship Management

Customer relationship management (CRM) governs a company's interactions with its customers. As a software solution, it's a customer-oriented feature that connects with both future and existing customers. Connecting with customers and providing customer information to agents requires technologies that organize, automate, and synchronize customer data.

Although the CRM concept was developed in the United States in the 1950s, it came into prominence in the 1990s. Since then, the CRM market has grown rapidly as companies have realized the need to retain relationships with existing customers while also acquiring new customers. Increases in customer satisfaction can yield increases in market share.

Among the different CRM solutions software in the market today, SAP CRM brings a 360-degree view of the customer and helps organizations decide how to maintain relationships with those customers. SAP CRM covers a broad range of functionality with respect to its core areas (marketing, sales, and service) and its

various applications such as the Interaction Center (IC), Web Channel, mobile clients, and handheld device applications. On top of these, SAP CRM also provides business roles for industry verticals such as utilities, media, grantor management, waste and recycling, and finance.

So what's the big picture? SAP CRM helps achieve corporate business goals by targeting competitive agility, focusing on operational excellence, and driving growth. *Competitive agility* gives organizations the flexibility to change with the competitive world, respond to customers, and optimize the customer relationship. *Operational excellence* reduces the overall cost to the company by reducing system errors and adherence to accuracy. You can streamline these business process by executing an SAP CRM implementation based on your business needs. Finally, *driving growth* allows an organization to look into new opportunities and product lines. Accommodating this kind of business change requires an optimal tool that can respond to and sustain a company's business needs. To that end, SAP CRM can track and log information related to organization growth. Overall, SAP CRM can help in achieving business goals by providing the capability to interact with the customer to ensure superior customer interactions and experiences.

SAP CRM covers multiple business points that help companies support their CRM strategy and allow easy user adoption. It delivers best-in-class front-office functionality and industry-specific solutions by providing the following aspects:

► **Operational**

Operationally, SAP CRM streamlines business processes and drives new growth and opportunities. Its applications, such as the Interaction Center (IC), Web Channel, and WebClient UI, have different types of users that collate customer information and log interactions in one location. From an organization point of view, this relates to the strategy of exposing "one face to the customer."

► **Collaborative**

SAP CRM covers different channels for direct contact with customers to collaborate with them in real time. Some of the key interaction channels are email, fax, phone, electronic data interchange (EDI), and online. What does collaboration look like? For a manufacturing company, this might be selling its product to the distributor, or a wholesaler needing transaction data for its product, which is sold to the end customer. Having this information is key to driving the

manufacturing business, and SAP CRM provides the capability to collaborate with each of the customers/consumers in this business chain.

► **Analytical**

SAP CRM covers a wide variety of reporting information related to customer behavior. Analytics span all core functions (marketing, sales, and services) and bridges subareas of these functions within these core areas. Reporting tasks specific to these areas can be molded to suit your business needs.

But SAP CRM doesn't operate in a vacuum. It's imperative for any company to clarify its CRM strategy and focus its attention on the future goal with CRM deployment.

1.2 Architecture

SAP CRM is a comprehensive solution for each and every touch point at which an organization interacts with the customer. It's a part of the SAP Business Suite that provides key functionality for marketing, sales, and services across different communication channels (i.e., IC, Web Channel, Field Application, and SAP Enterprise Portal).

SAP CRM is a central component with a CRM server and is connected to the SAP ERP backend system. In most business scenarios, complete master data originates in an SAP ERP system and is replicated to SAP CRM for further customer usage. SAP CRM Analytics lets you analyze your master and transaction data executed in the SAP CRM system. By connecting to SAP Supply Chain Management (SAP SCM) solutions, SAP CRM can execute the Available to Promise (ATP) checks and give back results on product and locations based on the product availability.

The SAP CRM landscape contains SAP CRM Application Server (AS) ABAP and SAP CRM AS Java, which enable you to operate a large range of business processes. If you do pricing on any of your transactions, SAP CRM uses the Internet Pricing and Configurator (IPC) to price items. The IPC function for pricing has been integrated in the Virtual Machine Container (VMC), which comes as an integral part of SAP CRM system deployment. For VMC, you don't need to install the SAP CRM AS Java component separately because the VMC resides on the SAP CRM AS ABAP component. However, to deploy the Web Channel, you need to install the SAP CRM AS Java component.

1.3 Business Functions and Applications

SAP CRM supports key business process across your enterprise and provides the foundation for unique customer experiences. SAP CRM focuses on customers and your business to drive growth, streamline your end-to-end business process, and respond faster to changes within the competitive market.

Let's walk through the core functions and applications that SAP CRM deploys to overcome any obstacles related to servicing customers. We'll cover these functions with business scenarios and configuration details in later chapters.

1.3.1 Business Functions

The three pillars of SAP CRM are marketing, sales, and service. We'll look at these in more detail in the following sections.

Marketing

Marketing within SAP CRM helps an organization acquire new customers and retain existing customers. It drives customer demand using the following functionalities to enable direct mail, call center, web, email, and field sales:

- ▶ **Marketing Resource Management (MRM)**

MRM helps organizations manage their marketing resources, budgets, campaigns, and personnel in an effective manner.

Because businesses change their marketing strategies based on market needs, they need to be able to reassign funds or reallocate budgets that are already assigned for a specific product promotion. This can be initiated by using native Funds Management in SAP CRM to shift funds to overcome market needs and changes. The *marketing plan* is a basis to form a budget for your marketing needs in general, whereas *campaigns* are more specific marketing activities that are carried out to accomplish your marketing needs.

- ▶ **Segmentation and List Management**

Segmentation and List Management enable an organization to segregate customers to target based on certain customer attributes and then trigger campaigns to those specific customers.

- ▶ **Campaign Management**

An organization can use Campaign Management to execute its campaigns via

various communication channels, including both inbound and outbound channels (i.e., phone, mail, email, web, fax, SMS, etc.). Generally, when the company creates the marketing plan, it will create and assign the campaigns. This drives the link of the marketing plan execution and the campaigns assigned to the marketing plan. Target groups are assigned to the campaigns to execute the product promotions.

► **Lead Management**

Targeting accurate *leads* is imperative to organizational growth and getting new business. Lead Management is the functionality within SAP CRM that drives the business to capture the leads and nurture them. After the lead is identified, the organization qualifies the leads as either hot or cold; these leads are then converted into opportunities and sales orders.

► **Trade Promotion Management (TPM)**

Trade promotion is an agreement with the customer to offer a certain product during a specific time period for a specific price and/or quantity. Trade promotion is used to increase brand capital, brand awareness, and market share. SAP CRM provides this capability and helps you link the marketing plan to the trade promotion and integrate the trade promotion with Claims and Funds Management.

► **Marketing analytics**

SAP CRM provides a marketing analytics capability that allows an organization to view vital information on its marketing functions and make decisions accordingly. These analytics include SAP Predictive Analytics, measurement and reporting, customer analytics, forecasting and planning, optimization and refinement, and product analytics.

Sales

Sales is the core SAP CRM function that allows businesses to sell products or goods to the customer and log them as sales transactions. A sale in itself is self-explanatory: the selling of the goods and pushing it through logistics and invoicing. SAP CRM helps provide a complete view of the sales cycle, starting with the contract and quotation, and through to the sales order creation, delivery, and billing information. SAP CRM Sales provides the following key functionality:

► **Opportunity Management**

The sales cycle within SAP CRM starts with Opportunity Management and ends

with Sales Order Management (i.e., sales order creation or rejection). Opportunity refers to the chance that allows a company to sell products based on a customer's interest. For example, if the customer shows interest in a product during any trade show or sales promotion, that interest is characterized as an opportunity to conduct business with the customer.

Sales processes can be monitored and evaluated more efficiently with the use of Opportunity Management because it contains a sales methodology that guides the organization to follow certain sales best practices. This can be changed or modified based on the organization's needs. Opportunity Management is generally used during longer sales cycles and involving large price amounts.

► **Sales contract**

A sales contract is an agreement to sell the product to the customer with a specific rate or discount based on quantity or value and for a specific period of time. After the contract validity period has expired, the contract is no longer in use to sell the product on the contracted price. *Contract management* improves customer loyalty and customer retention by offering lower than usual prices.

► **Quotations**

A quotation is an agreement (often a legally binding document) between a customer and organization for a specific product with a specific price and for a specific period of time.

Quotations are converted to the sales order, or they can be copied to create another quote. Quotation management improves customer relationships and helps organizations offer prices at competitive rates for a given period of time. The quote validity period is usually shorter than the contract period in contract management.

► **Sales Order Management**

A *sales order* is a request made by a customer to an organization to buy certain goods and have them delivered on the requested date. A sales order is the sales transaction that is tracked to determine the revenue of the company. It can be created with reference to contracts or quotations. Customers are satisfied if they have different buying options. This means if the product ordered isn't available on the requested date, an organization should be capable of providing a substitute to fulfill the customer requirement. Functions within sales transactions support customer order confirmation, order status management, cross-sell, up-sell, product substitution, and more.

► **Sales analytics**

Sales analytics provide an organization with the capability to view the complete sales cycle from a reporting aspect. It shows the customer lifecycle, which helps organizations make key decision in changing their business process and also determines customer buying behavior. It also helps organizations focus on prime customers and ensure they are serviced on time. Sales analytics covers each and every SAP CRM function from the reporting perspective: marketing analytics, sales analytics, service analytics, and IC analytics.

Service

SAP CRM Service plays a vital role in acquiring new customers and servicing existing customers to fulfill their day-to-day needs. Organizations in today's competitive market are required to service their customers within service level agreements (SLAs). Social media has made information available for customers who demand more details, perhaps about a product or the company in general. This has also caused the service industry to grow at a greater pace. SAP CRM provides major service functionality to fulfill requirements related to servicing customers on a timely basis:

► **Service Order Management**

A *service order* is an agreed-upon service to be performed between a service recipient and a service provider. Service Order Management governs service order quotation, service order processing, service confirmations, and financial and logistic integration. Based on the services performed, the service order can have service items, service part items, sales items, or expense items. These form the basis of logistic integration. For companies that have SAP ERP in their system landscape, it's easy to integrate SAP CRM Service functionalities. This reduces overall integration cost and effort with any other SAP ERP tool.

► **Service Contract Management**

A *service contract* is an agreement of services to be performed between a service provider and a service recipient for a specific time period. Just like a sales contract, a service contract consists of the price and agreement for the services that are going to be performed for a specific period of time. As soon as a service order is created from the service contract, the price on the contract is applied to the service order. Having a service contract helps both the customer and

organization maintain a relationship and reduce downtime at the customer location.

► **Complaints and returns**

Customers calling for complaints and returns are logged as *complaints* in SAP CRM. You can categorize the complaints based on the customer calls received. This helps organizations work effectively when issuing any kind of returns, credits, or debit memos. Effectively managing customer complaints builds trust and maintains good relationships with customers.

► **Case Management**

Case Management provides a functionality to manage a complex problem or any difficult issue. These can be assigned to different groups that need to work on the case and resolve the same issue.

► **Installed Base**

Installed Base (IBase) is equipment that is installed at the customer location. These can be devices, machinery, software, and so on that are maintained in the SAP CRM system as a part of master data management. Service management offers IBase services for the service contracts, and service orders are created. Because each organization is aware of its customer's IBase situation and the parts sold to the customer, it gives flexibility to the customer, and the customer receives accurate responses from an organization on any kind of service calls.

► **Warranty Management**

Warranty Management plays an important role in providing an optimum service in comparison to competitors, giving an organization an opportunity to retain customers. In a service scenario, warranty determination occurs when executing service transactions for, for example, a service order and service confirmation. Warranty claims are triggered after the warranty determination to settle the account with the customer. Warranty Management includes product and warranty management, claims processing, and warranty checks as its building blocks within SAP CRM.

► **Resource planning**

Resource planning helps an organization plan its resources to optimally perform service functions. This helps service managers within an organization manage the resources and then delegate the work based on resource availability.

1.3.2 Business Applications

SAP CRM has different applications that can connect companies with customers. A user interface (UI) plays an important role in the market to entice customers, especially when conducting business processes via business-to-business/business-to-consumer (B2B/B2C) applications. Likewise, if the SAP CRM application is a telephony application, customer service employees will need to navigate different screens without any hassle to provide optimal service to their customers. SAP CRM provides different applications that help customers and internal employees provide services effectively. The following sections provide further details on these applications.

Interaction Center

The Interaction Center (IC) is a core SAP CRM application that connects companies to their customers through multiple channels across SAP CRM functions (for these purposes, known as IC Marketing, IC Sales, and IC Service).

Let's say that a customer calls an agent to place new order or to express grievances regarding a product he bought. The IC tool effectively manages customer issues and supports both the agents and manager involved in the interaction. IC allows the agent to manage both the inbound and outbound communication channels, such as phone, fax, email, chat, and so on.

IC functionality can be broken down into the following building blocks: telemarketing, telesales, customer service, and IC Management. The Email Response Management Service (ERMS) helps organizations track customer emails and reply to them appropriately without exceeding the SLA.

Partner Channel Management

Partner Channel Management provides the functionality for organizations to better work with all partners involved in the sale of a product. Partner Channel Management helps organizations deep dive into the channel partner business sustainability and understand their business growth. This also helps organizations build their forecast based on the channel sales, optimizing growth and reducing overall manufacturing cost.

Let's look at Partner Channel Management features:

▶ **Partner management**

Partner management helps organizations understand their partners and initiate partner relationships using recruitment and profiling. With this functionality, an organization can get information on all direct and indirect customers and plan appropriate sales strategies.

▶ **Channel marketing**

With channel marketing, a company can provide appropriate incentives and generate demand for their products in the market. This motivates channel partners to bring more business and visibility to the marketing needs.

▶ **Channel sales**

Channel sales gives complete visibility of your customers regarding product sales. With SAP CRM, your channel partner can order on behalf of the end customers. The channel sales feature provides complete sales cycle visibility, from order creation to delivery and billing. You can also track the end customer with the channel sales and the customer's buying behavior, which helps in selling your product effectively and efficiently.

▶ **Partner order management**

Partner order management lets you bring your channel partners into your E-Commerce strategy and allows them to create orders via the online web tool. The partner order management capability includes orders to cash and inventory management.

▶ **Channel service**

Supporting channel partners to service end customers is important to grow your business. SAP CRM channel service provides the capability to support channel partners and service them on a timely basis.

▶ **Partner and channel analytics**

Partner and channel analytics provides a complete view of the channel partners metrics and behavior through reporting that helps organizations make some key business decisions.

Web Channel

The Web Channel application provides the capability to make use of web technologies, conduct sales and services, and carry out interactions with customers. SAP

E-Commerce turns the web into a profitable sales and interaction channel that supports both B2B and B2C business scenarios. It helps organizations carry out their business with minimal manual intervention. Customers can simply place orders and initiate services from the Web Channel, which results in lower order errors and minimizes calls to the customer call centers. This channel is convenient and easy to use, available 24/7, and allows customers to get product information anywhere and anytime.

WebClient UI

WebClient User Interface (WebClient UI) has multiple business roles and lets you access transactions with minimal time navigating various screens or transactions.

Think back to the traditional way of accessing different transactions within SAP systems: via the Graphical User Interface (GUI), which requires any user to enter different transaction codes to access those transactions. Remembering and accessing transaction codes can be cumbersome. In response, SAP introduced WebClient UI with SAP CRM 2006s. This web UI enables different people or various roles within an organization to use and navigate different transactions easily and without remembering any transaction codes. The WebClient UI is a role-based UI designed for business users with different roles such as SAP CRM Marketing, SAP CRM Sales, SAP CRM Service, and IC. SAP has provided manager roles in each of these SAP CRM core areas and helps manager get the required information to improve their process and to service their customers appropriately.

Based on your company's business needs, you can configure the business roles in the work center that the customer service representative works in on a day-to-day basis.

Mobile Solutions

Many customers have mobile employees who are "out in the field," traveling to satisfy their end customers' needs. In most cases, these mobile employees aren't equipped with the devices and the infrastructure that provides them accurate business transaction information or any customer information. For this business need, SAP CRM Mobile provides mobile capabilities to help organizations overcome these issues. For example, sales and service data is provided that covers

most of the key transactions and information required for technicians or sales professionals. This enables field employees to carry out their work more effectively. They don't need to remember things they've discussed with the customer because they have the tool to log on and access interactions. This also reduces data redundancy.

Analytics

SAP CRM Analytics helps measure, predict, and optimize customer relationships. In SAP CRM Analytics, data gathered within operational SAP CRM is analyzed in terms of how customers are being serviced. This could be the segmentation of a customer or identifying cross-selling and up-selling opportunities. SAP CRM Analytics helps forecast an organization's needs and determine customer behavior. Data collection and analysis is an ongoing and iterative process that helps companies plan customer interactions.

SAP CRM covers analytics that are relevant to customer information and interaction, whereas SAP BusinessObjects Business Intelligence (SAP BusinessObjects BI) offers comprehensive reporting functionality as separate application software. SAP CRM Analytics provides the closed loop cycle, which is executed for customers and develops customer loyalty.

SAP CRM provides reporting capabilities for the following specific areas:

- ▶ Marketing analytics
- ▶ Sales analytics
- ▶ Service analytics
- ▶ Customer analytics
- ▶ Product analytics
- ▶ IC analytics

SAP CRM also provides real-time reporting as a part of interactive reporting for data modeling in real time. It's also helpful for any organization that doesn't depend on a separate SAP Business Warehouse (SAP BW) system for reporting purposes and provides functionality to create the ad hoc report based on specific needs. For interactive reporting, you don't need a separate SAP BW system because you can take advantage of SAP BusinessObjects BI content within SAP CRM to run interactive reporting.

1.4 Summary

This introduction provided an overview of SAP CRM business functions and applications that help businesses drive growth and optimize business processes. We discussed high-level information on SAP CRM core functionality and covered key concepts on SAP CRM architecture. SAP CRM provides applications that can be used via multiple channels while interacting with customers. Understanding SAP CRM applications is equally as important as understanding SAP CRM core business functions. The following chapters will deep dive into each of these areas with real-time business scenarios and information on master data configuration.

Master data in SAP CRM forms the basis for all business transactions that are loaded from other systems or created locally. In this chapter, we'll look at the different configuration options for master data.

2 Master Data Configuration

SAP CRM master data is comprised of accounts, products, organizations, vendors, Installed Bases (IBases), product catalogs, and more. It's critical to understand how to set up master data in the system to comply with all business requirements and future processes. Master data setup is imperative to any project's time line and critical in running any project-relevant scenarios.

To achieve data harmony within SAP CRM master data, the focus must be on organization data, business partner data and data exchange, and product data and product data flow between other systems (mostly SAP ERP) and SAP CRM. In this chapter, we will look at the master data setup for the organizational management, business partners, products, pricing, and vendors.

2.1 Organizational Management

Organizational Management is an enterprise structure that should be created and mapped based on your business needs before beginning any SAP CRM implementation project. An incorrect organization structure can lead to multiple issues within SAP CRM transactions and impact the downstream transactions as well.

The organization structure in SAP CRM is a bit different from the organization structure in SAP ERP from a maintenance perspective. You maintain the organization model once for all applications in SAP CRM. Scenario-specific data in the structure is assigned by attributes to the organizational units. These attributes are passed onto subordinate organizational units and can be reflected in the transaction that you create.

Transactions created in SAP CRM, have the organization determined based on the organization determination rule assigned to the transaction, whereas in SAP ERP, the organization determination is based on the customer master sales area.

2.1.1 Concepts

The organization structure in SAP CRM is flexible and maintainable. The organization structure is comprised of organizational units and is mapped to the SAP ERP organization structure. Additionally, you can maintain SAP CRM Sales and SAP CRM Service organization data for the sales organizational units, or you can create the SAP CRM Sales organization structure based on the SAP ERP organization structure and create the SAP CRM Service organization structure based on the service scenarios in SAP CRM. This means that you can have different organization structures for SAP CRM Sales and SAP CRM Service business functions within the same organization.

The following are some important organizational units and elements of organizational data in SAP CRM:

- ▶ **Sales organization**

This organizational unit is responsible for selling the product based on certain terms and conditions. In SAP CRM, the organizational units are created and are mapped to the SAP ERP sales organization within the FUNCTION tab of the organization master data.

- ▶ **Distribution channel**

A distribution channel is a channel or a medium through which the materials or services are delivered to the customer. The assignment of the distribution channel within SAP CRM is similar to the sales organization. The organizational units that are created in SAP CRM are mapped to a distribution channel and division within the FUNCTION tab of the organization master data.

- ▶ **Division**

A division is the product line of business within an organization. If there are multiple groups of a product, they can be defined as different divisions in the system.

- ▶ **Sales office**

A sales office is defined based on the geographical regions of any organization or company where they want to sell the product. A sales office within an SAP

CRM organization structure is assigned to the sales organization business partner. Other attributes, such as the postal code, can be assigned to the sales offices independent of the sales organization.

► **Sales group**

The people working within the sales office are divided into sales groups.

► **Sales district**

The sales district can be assigned to the organizational unit attributes within the SAP CRM organization structure and can be copied to the business transaction from the organization structure.

► **Service organization**

A service organization owns an entity and is comparable with a sales organization in a sales scenario. It's responsible for processing service transactions such as service order/confirmation, service contracts, and so on.

► **Marketing organization**

An organizational unit within an SAP CRM organization structure can be a marketing organization, which is used for marketing plans and campaigns only. You can use the marketing organization to map the marketing logical enterprise structure to the organizational units in your company.

► **Position**

You can assign positions (enter "S" for object type) to the organizational units in the SAP CRM organization structure. Positions can be anything based on your organization (e.g., sales manager, director, etc.). Positions are mainly used when you need to assign tasks to your employees. For example, you might implement a workflow to send task items to employees within the position. This is also used for evaluations of the task assignment in the reporting structure.

► **Holder**

Holders are employees that are used in the SAP CRM business partner component in an employee role (enter "CP" for object type) or an SAP CRM user (enter "US" for object type) that is assigned to a position in an organization model.

Having looked at these various organizational units and their definitions, let's now discuss the steps required to set up the Organizational Management master data.

2.1.2 Organizational Management Master Data Setup

In the following sections, we'll discuss the various steps involved in maintaining the organization structure in an SAP CRM system.

Maintain the Number Range for the Organization Structure

The section discusses how to maintain the number range for the organization structure. From the configuration menu path, select SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • NUMBER RANGE MAINTENANCE • MAINTAIN NUMBER RANGE.

Here, you can define your own number ranges (subgroups) for individual plan versions (that aren't valid for all plan versions) and object types. The names of the subgroups are set up so that the first characters specify the plan version and the last two characters specify the object type in detail. The structure of the subgroups depends on whether you're using number assignments valid for all plan versions or not. The \$\$\$\$ subgroup is a default setting (see [Figure 2.1](#) and [Figure 2.2](#)). SAP recommends using the internal number range for the organizational unit.

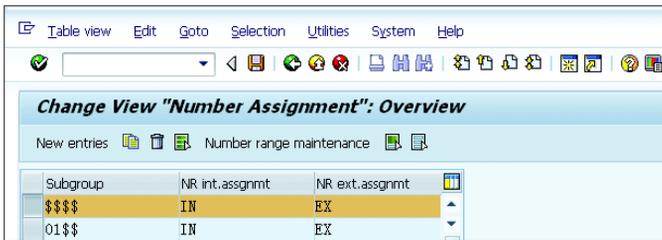


Figure 2.1 Subgroup Number Assignment

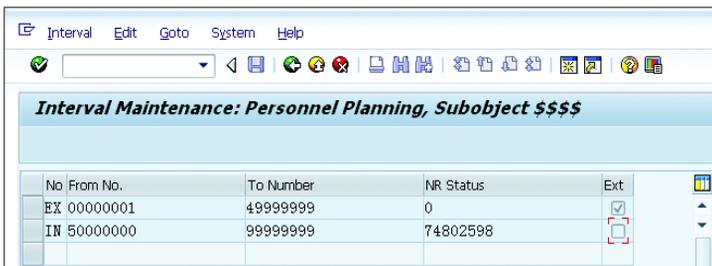


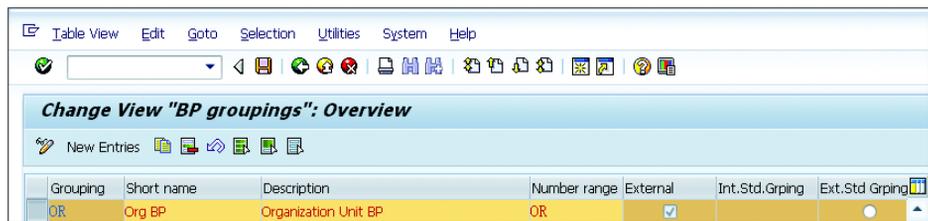
Figure 2.2 Organization Number Range Maintenance

To add your own number range, add the entry based on your plan version and the object type, and click on NUMBER RANGE MAINTENANCE to add the number range based on your business requirements.

Maintain Number Ranges for Business Partners

To create number ranges for the organization business partner, use Transaction BUCF. You'll then need to define the grouping and assign number ranges to the business partners. To do so, follow the path, SPRO • CROSS APPLICATION COMPONENT • SAP BUSINESS PARTNER • BASIC SETTINGS • NUMBER RANGES AND GROUPINGS • DEFINE GROUPING AND ASSIGN NUMBER RANGES.

You'll be brought to the next screen, where you can either use internal or external number ranges based on your business requirements (see [Figure 2.3](#)).



Grouping	Short name	Description	Number range	External	Int.Std.Grping	Ext.Std.Grping
OR	Org BP	Organization Unit BP	OR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 2.3 Defining and Assigning a Number Range to the Business Partner Grouping

Number ID

To assign the same number ID to the organizational unit and the business partner, you need to maintain the HRALX/PNUMB parameters as "3" within the integration setup with HR.

Convert Organization Model to Represent Multiple Assignments in SAP ERP

If you're using an SAP ERP backend system with multiple assignments, then it's recommended to convert the organization model in to multiple assignments in SAP CRM. After this report is executed, you can't go back to the standard backend integration version. Therefore, before running this report, you can also run this report in a test mode.

Multiple distribution channels and divisions can be assigned to the organizational units (sales organization, sales office, and sales group) with this report.

To convert the organization model to represent multiple assignments, follow the menu path, SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • DATA TRANSFER • CONVERT ORG. MODEL TO REPRESENT MULTIPLE ASSIGNMENTS IN SAP ECC.

After you execute the preceding report, you'll see the screen shown in [Figure 2.4](#). Click on the TEST ONLY button to test the program.

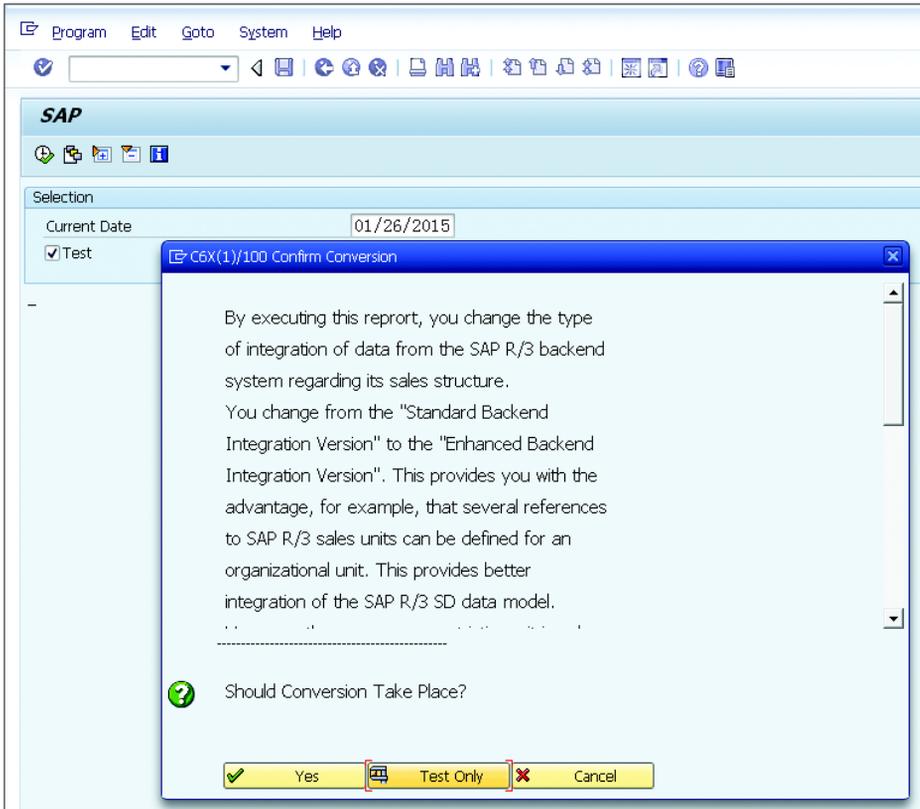


Figure 2.4 Convert the Organization Model to Represent Multiple Assignments in SAP ERP

The current date will be defaulted to the date of the program run. From here, execute the program. A log display will show you the list of organizational units converted to the enhanced version.

Download the Organization Structure

In this step, we'll run Report CRMC_R3_ORG_GENERATE to download the SAP ERP organization structure and create the same SAP ERP organization structure in SAP CRM. Then, follow the menu path, SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • DATA TRANSFER • COPY SAP ECC SALES STRUCTURE.

Select the R/3 organization structure listed in the upper portion on the screen under R/3 ORGANIZATION STRUCTURES, and click on the GENERATE SELECTED LINES button. This step generates the organization structure within SAP CRM, which is shown in the lower portion of the screen. You can also see the status of the generated organization structure in SAP CRM and whether it's generated successfully or not. After the generated structure shows as successfully generated, save the organization structure.

You can also create a service skill group as an organizational unit in an SAP CRM organization structure if you're working with the SAP CRM Service organization and structure separate from the SAP CRM Sales structure. This can be created manually with Transaction PPOSA_CRM. Under the organizational unit, you can create positions and holders and add attributes to the organizational unit based on your specific business needs.

Object Permitted in Determination

The OBJ PERMITTED IN DETERMINATION checkbox should be activated for the organization. Run program HRBCI_ATTRIBUTES_BUFFER_UPDATE to clear the organization buffer. You should run the report during off hours because this report deletes the table and rebuilds it.

2.1.3 Transport of Organization Structure

Some organizations may want to download the organization structure in each system based on their landscape for the development system, quality system, and production system. Other companies may prefer to transport the organization structure from the development system to the quality and production systems to maintain the integrity of the organization object numbers.

The following are steps to transport the organization structure from the development system to the target system:

1. Go to Transaction SE38, and run Report RHMOVE30.
2. Enter the object type "O" for organizational unit and object type "S" for positions.
3. Select your organizational unit within the OBJECT ID field.
4. Select the TRANSPORT OBJECT checkbox in the TRANSPORT section of the report.
5. Create the child transport request that has the configuration and development changes, and then execute the program. The output of the report will show the list of object units. The TRANSPORT column will show the list of organizational units activated.
6. Within the menu, click on EDIT • TRANSPORT/DELETE to create a list of the organizational units within the transport request.

After the transport request is moved to the target system, go to the target client and run Report CRM_COM_ORGMAN_BUPA_INTEGRATE, Report HRBCI_ATTRIBUTES_BUFFER_UPDATE, and Report HRALXSYNC.

In some instances, you may not be able to create and link a business partner because the organization structure and business partner are sharing the same organizational unit. Follow these steps to troubleshoot this issue:

1. Execute Report CRM_COM_ORGMAN_BUPA_INTEGRATE with the parameters shown in [Figure 2.5](#).
2. Expand the left navigation pane, and find the list of organizational units whose business partners aren't up to date. On expanding, you'll see the list of partners as shown in [Figure 2.6](#).
3. Select the partner on the OBJECT OVERVIEW screen, and click the START REPAIR icon to fix the business partner, as shown in [Figure 2.7](#).

Deleting the Organizational Unit Business Partner

Delete the organizational unit business partner by executing Report RHRHDL00. With Infotype 1001 and Subtype B207, this deletes the relationship that hasn't been created correctly. Be sure to execute this report in test mode first. You can then run the steps mentioned earlier to repair the organizational unit and business partner relationship.

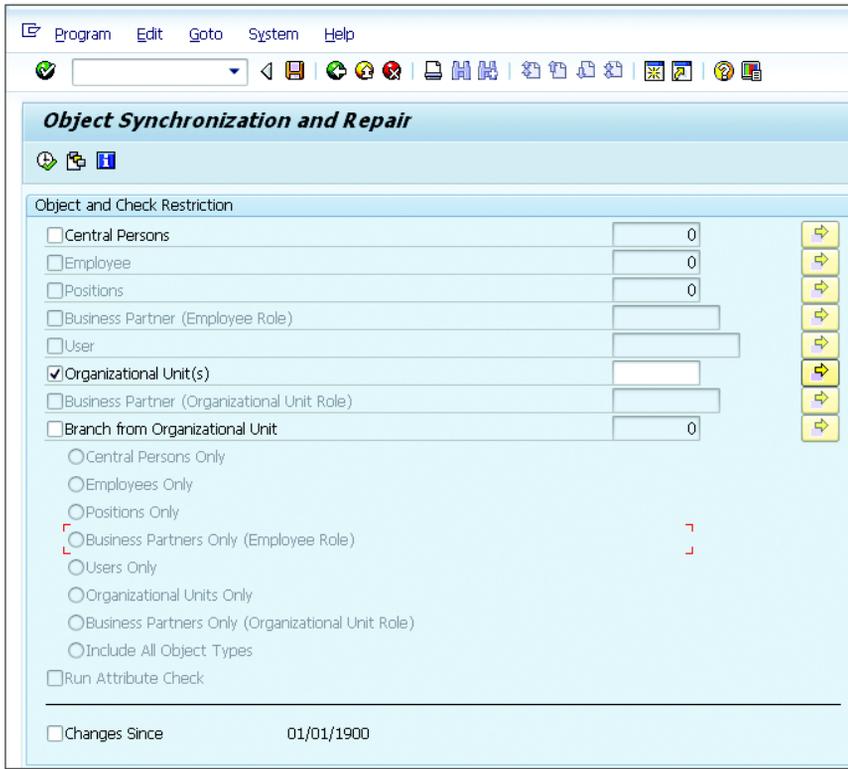


Figure 2.5 Object Synchronization and Repair (1)

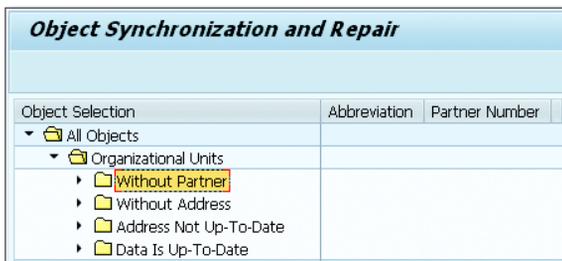


Figure 2.6 Object Synchronization and Repair (2)



Figure 2.7 Object Overview

2.1.4 Division and Dummy Division

A *sales area* is a key piece of information that a sales order needs to be free of errors. A sales area helps to determine the sales executed for a specific business. In such a case, some companies may not use any specific division but instead use dummy division (i.e., 00) on a sales order to create the order free of errors and successfully replicate the SAP CRM sales order from SAP CRM to SAP ERP.

If you want to use a dummy division in your business transaction, you must activate the `DIVISION NOT ACT.` checkbox in the `DIVISION USAGE` section of the screen. If you're not working with divisions in SAP CRM, then you must activate this field and add the R/3 dummy division in the `DUMMY DIVISION` section. In addition, the divisions entered in the `R/3 DUMMY DIVSN` text box should exist in the SAP ERP system. If the value for the `R/3 DUMMY DIVSN` field is "00", and the `DIVISION NOT ACT.` checkbox is activated, then the sales order created in SAP CRM will be replicated to SAP ERP with division 00 at the header and also at the line items.

Most organizations use divisions to bifurcate their line of business. In those cases, activating a header division makes more sense. If the `HEADER DIV. ACT.` checkbox is selected, then the header division on the SAP CRM sales order is replicated to SAP ERP. If material is assigned with a different division than that of the sales order header, then the line item on the sales order will have the division from the product master (see [Figure 2.8](#)). You can activate the header division by navigating to `SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • DIVISION SETTINGS • DEFINE USE OF DIVISION AND DUMMY DIVISION`.

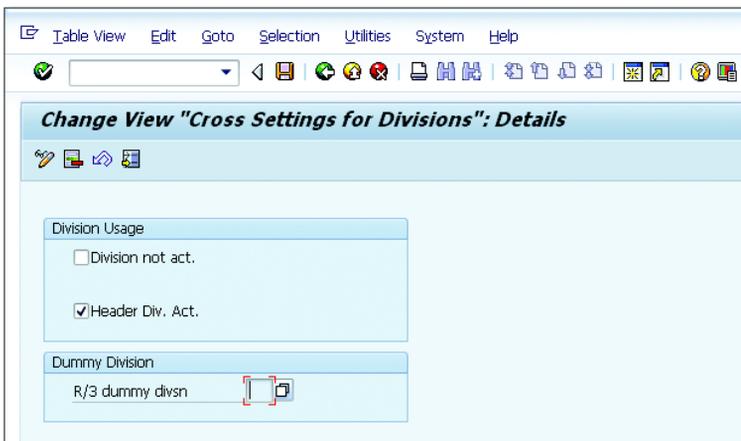


Figure 2.8 Cross Settings for Divisions

2.1.5 Organization Data Determination in a Transaction

Organization data determination is important in any SAP CRM transaction because it drives different functionality within business transactions. For example, the price determination element is assigned at both the transaction and item category level. You can assign attributes at the organizational unit level and maintain the determination rules based on your specific business needs.

There are two types of organization data determination rules: responsibilities and organization models. The following sections look at these in closer detail.

Responsibilities Rule

The responsibilities rule type is determined based on the organizational unit. Therefore, organizational attributes aren't required in this case. For example, if Team A is assigned to the sales organizational unit S1, and you want to determine the organization of the transaction based on this specific team, then the responsibilities rule is created to assign the business partner (sold-to party) to Team A. When the transaction is created for the sold-to party, sales organizational unit S1's sales order will be determined based on the Team A assigned to sales organizational unit S1. The attributes within this rule are defined directly in the *rule container*.

A rule container is a place where organization data is housed within a configuration. Whatever organization data is added to the rules container is determined on the sales order. Therefore, even if the organization model is set up, the attributes don't need be linked to the organization model.

Proceed with the following steps to configure the rule and assign it to the organization data determination:

1. Follow the menu path, SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • ORGANIZATIONAL DATA DETERMINATION • WIZARD FOR ORGANIZATIONAL DATA DETERMINATION • CREATE DETERMINATION RULE OF THE RESPONSIBILITY TYPE.
2. Enter the SHORT DESCRIPTION, DESCRIPTION, and PACKAGE as shown in [Figure 2.9](#). Click CONTINUE.
3. On the SELECT SCENARIO screen that appears, select the SALES scenario because you're determining the sales organization in the transaction (see [Figure 2.10](#)). Click CONTINUE.

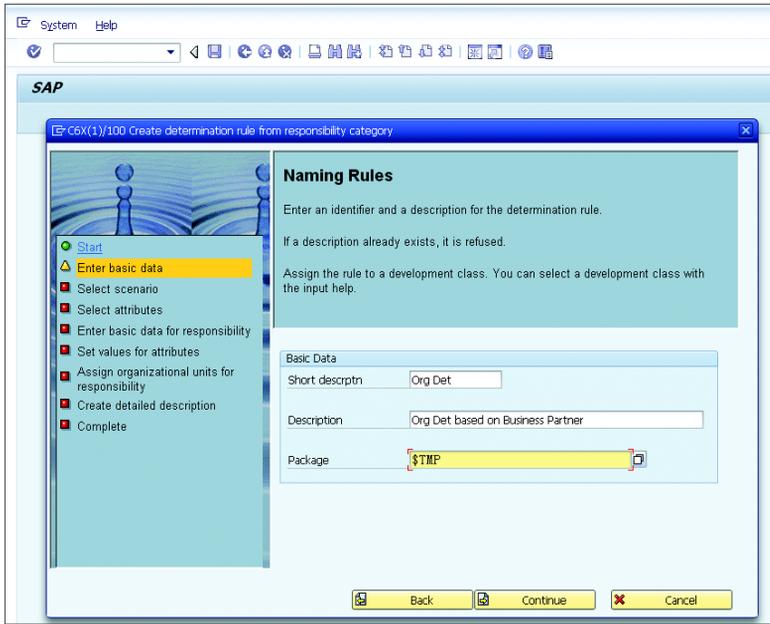


Figure 2.9 Organization Determination from Responsibility Category – Basic Data

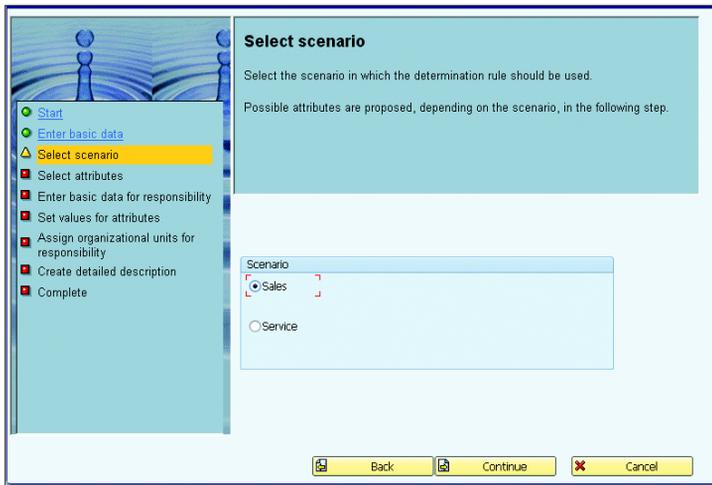


Figure 2.10 Organization Determination from Responsibility Category – Select Scenario

4. In the SELECTING ATTRIBUTES screen, choose from the attributes listed (see [Figure 2.11](#)). Click CONTINUE.

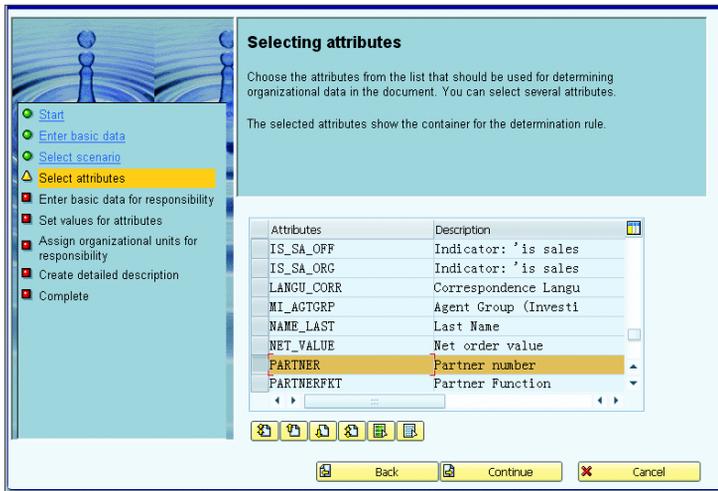


Figure 2.11 Organization Determination from Responsibility Category – Select Attributes

5. Again, enter the basic data (see [Figure 2.12](#)). Click CONTINUE.

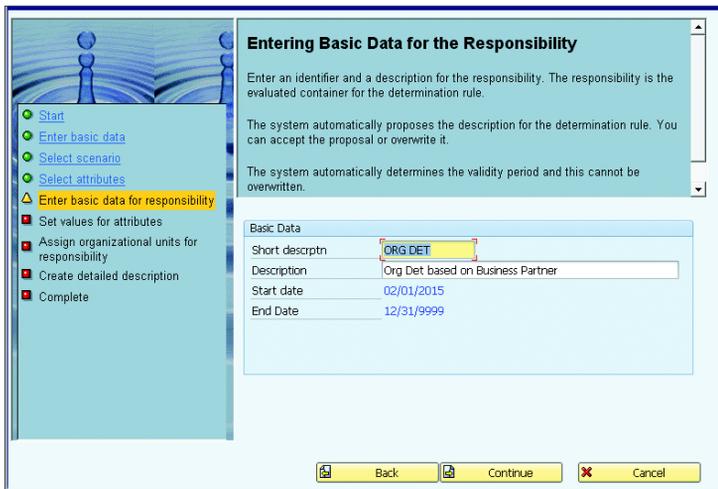


Figure 2.12 Organization Determination from Responsibility Category – Basic Data for Responsibility

6. Because we've selected the partner attribute, add those partners that you want the specific organization to be determined for ([Figure 2.13](#)). Click CONTINUE.

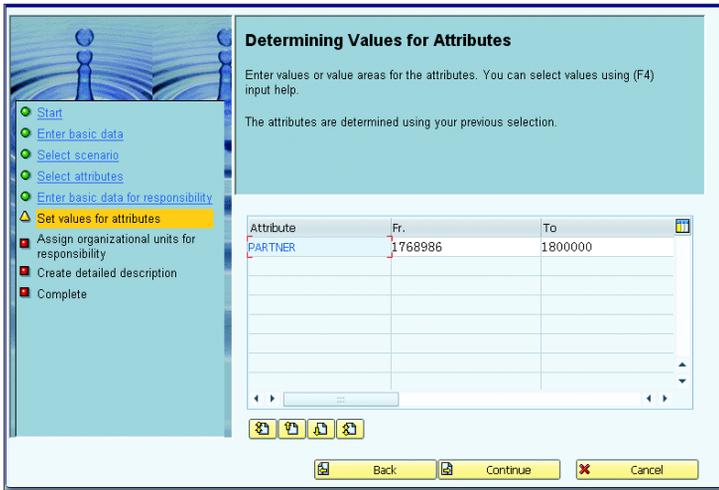


Figure 2.13 Organization Determination from Responsibility Category – Set Values for Attributes

7. Assign the organizational unit that you want to determine for the partner listed in the previous step (see [Figure 2.14](#)). Click CONTINUE.



Figure 2.14 Organization Determination from Responsibility Category – Assign Organizational Units for Responsibility

8. Complete the wizard and save the rule by clicking COMPLETE ([Figure 2.15](#)).

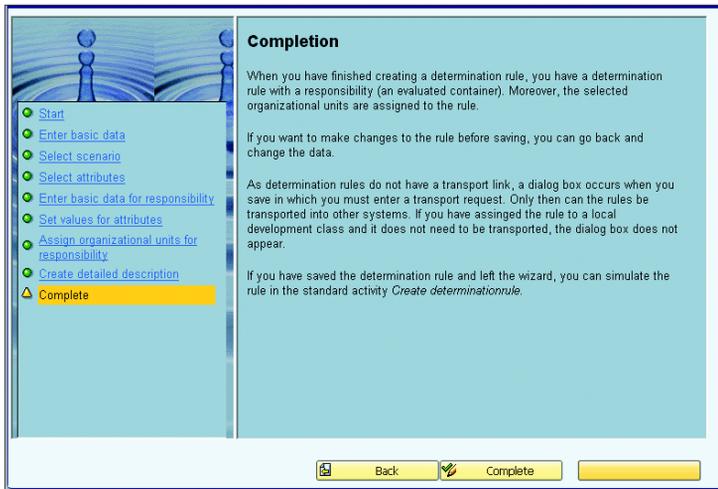


Figure 2.15 Organization Determination from Responsibility Category – Complete

- Assign the rule you created to the organization data profile as outlined in the configuration path, SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • ORGANIZATIONAL DATA DETERMINATION • WIZARD FOR ORGANIZATIONAL DATA DETERMINATION • CHANGE RULES AND PROFILES • MAINTAIN ORGANIZATIONAL DATA PROFILE (see [Figure 2.16](#)).

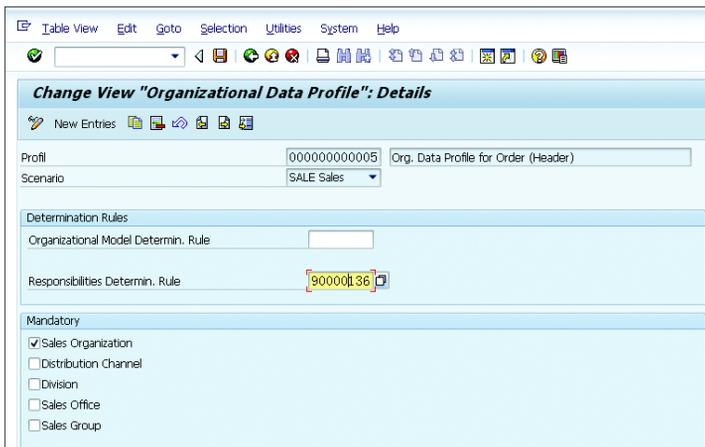


Figure 2.16 Maintain Organizational Data Profile

- Assign the organization data profile to the transaction type (see [Figure 2.17](#)).

Change View "Definition of transaction types": Details

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing header
 - Assign Blocking Reasons
 - channel

Enter GTIN
 Enter Partner Product
 Create Product Order Number
 Always Check Product ID Product Description/ID Search
 Profile for Altern. Identif.
 Product Substitution Proced.

Profiles

Text Det. Procedure	ORDER001	Sales Order
Partner Determ.Proc.	00000001	Sales
Status Profile	CRMORDER	
Org. Data Prof.	000000000005	Org. Data Profile for Order (Header)
Partner Function ORG	0001 Sold-To Party	
Date Profile	000000000004	
Action Profile	ORDER_MESSAGES	
AP Procedure		
Obj. Ref. Prof.		
Ext. Ref. Profile		
Aprv. Det. Procedure		

Figure 2.17 Assigning the Organization Data Profile to the Transaction Type

Organization Model Rule

Within the organization model rule, you need to assign the attributes to the organization model. Therefore, the organization model needs to be set up with attributes to link to. The organization determination is carried based on the attribute values you've assigned to the organizational unit.

For example, let's say we have business partner A from sales office SO1. Sales office SO1 is assigned to multiple sales areas in the organization model. When the business transaction is created for business partner A, the system determines that SO1 and the sales organization/distribution/division are linked to SO1 in the organization model. In this situation, to be successful, it's necessary to activate the OBJECT PERMITTED scenario flag for the organization data determination in the transaction.

Follow these steps to configure the organization model rule type and assign it to the organization data determination:

1. Follow the menu path, SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • ORGANIZATIONAL DATA DETERMINATION • WIZARD FOR ORGANIZATIONAL DATA DETERMINATION • CREATE DETERMINATION RULE FROM ORGANIZATIONAL MODEL.
2. Enter the SHORT DESCRIPTION, DESCRIPTION, and PACKAGE as shown in [Figure 2.18](#). Click CONTINUE.

Figure 2.18 Organization Determination from Organization Model – Basic Data

3. Select the SALES scenario because you're determining the sales organization in the transaction (see [Figure 2.19](#)). Click CONTINUE.

Figure 2.19 Organization Determination from Organization Model – Select Scenario

4. Choose from the attributes listed. As shown in [Figure 2.20](#), the DIVISION attribute is selected. The organization data determination is based on the business partner division. Click CONTINUE.

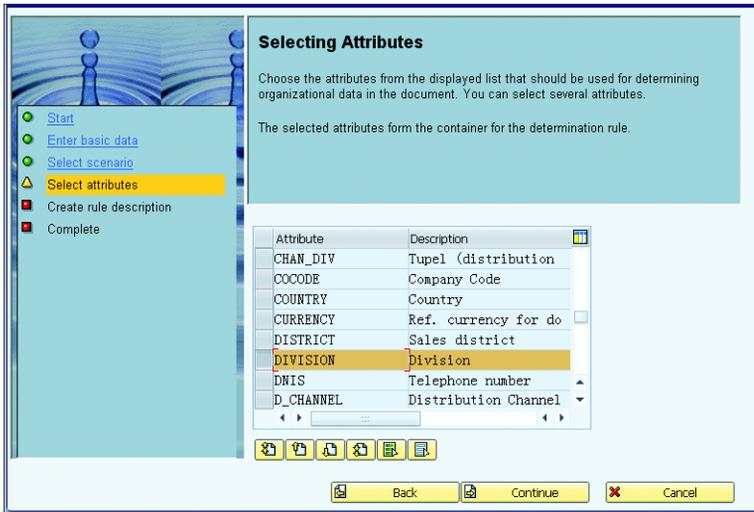


Figure 2.20 Organization Determination from Organization Model – Select Attributes

5. Complete the rule as shown in [Figure 2.21](#). The *rule number* will be generated after you've finished creating the rule. This rule is then assigned to the organization data profile. Click COMPLETE.

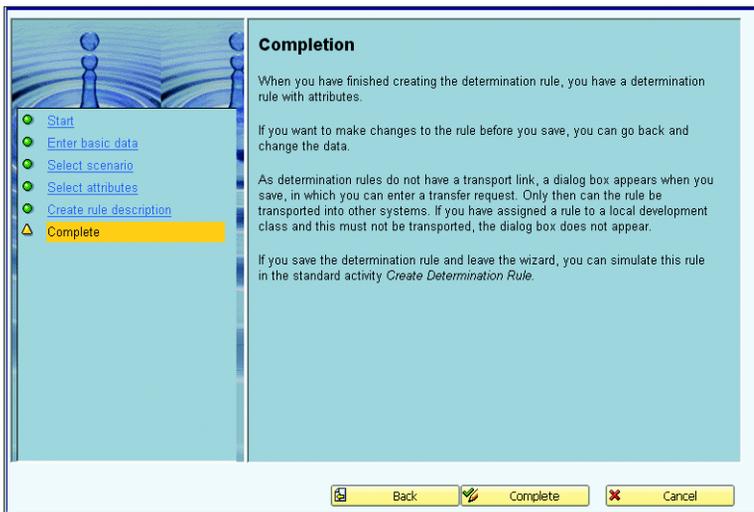


Figure 2.21 Organization Determination from Organization Model – Complete

6. Assign this rule to the organization data profile by following the menu path, SPRO • CRM • MASTER DATA • ORGANIZATIONAL MANAGEMENT • ORGANIZATIONAL DATA DETERMINATION • WIZARD FOR ORGANIZATIONAL DATA DETERMINATION • CHANGE RULES AND PROFILES • MAINTAIN ORGANIZATIONAL DATA PROFILE. Here, the organization data profile within the PROFIL section is assigned with the organization data profile key (Figure 2.22).

Change View "Organizational Data Profile": Details

New Entries

Profil: 000000000005 Org. Data Profile for Order (Header)

Scenario: SALE Sales

Determination Rules

Organizational Model Determin. Rule: 99900008

Responsibilities Determin. Rule:

Mandatory

- Sales Organization
- Distribution Channel
- Division
- Sales Office
- Sales Group

Figure 2.22 Assigning the Organization Determination Rule to the Organization Data Profile

7. The final step is to assign the organization data profile to the transaction type as shown in Figure 2.23.

After the configuration is completed, the business partners assigned to a specific division (e.g., division 99) in the master data will be provided with a sales area option in the transaction that has division 99 assigned in organization model. For example, if division 99 is assigned to sales organization 1234 and sales organization 5678 in the organization model, both sales organizations will show as a popup as soon as you enter the business partner on the transaction with division 99.

You can also use SAP-delivered rules to determine the organization data in the transaction based on your business requirements.

Change View "Definition of transaction types": Details

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing Header
 - Assign Blocking Reasons
 - Channel

Template Type

Territory Check

Trans.Classification

Product Determination

Enter GTIN

Enter Partner Product

Create Product Order Number

Always Check Product ID Product Description/ID Search

Profile for Altern. Identif.

Product Substitution Proced.

Profiles

Text Det. Procedure

Partner Determ.Proc.

Status Profile

Org. Data Prof.

Partner Function ORG

Date Profile

Action Profile

AP Procedure

Obj. Ref. Prof.

Ext. Ref. Profile

Aprv. Det. Procedure

Figure 2.23 Assigning the Organization Data Profile to the Transaction Type

2.2 Business Partners

In SAP CRM, customers are referred to as *business partners*. Business partners are those with whom an organization does business with. SAP CRM categorizes business partners as follows:

► Accounts

Accounts can be an organization, individual account, or group. Sold-to, ship-to, payer, and bill fall under the account category.

► Contacts

Contacts are persons assigned to the accounts. These are maintained as relationships to the accounts.

► Employees

Employees are persons who are responsible for any interactions with the accounts.

A business partner consists of general data and sales area data. In most business scenarios, business partner data is required to sync from SAP ERP and SAP CRM if SAP ERP is the client of record. General data includes information such as address, identification, control wherein the tax information resides, classification (information about the account group mapping and the business partner marking if it's a competitor, prospect, consumer, or customer), and status. The sales area data includes data on sales, shipping, billing, and pricing.

2.2.1 Concepts

There are a few important concepts you should know concerning business partners in SAP CRM. The following sections look at these concepts in detail.

Roles

Business partner roles classify the business partner in business terms, which means that every business partner has a specific role. Each of these roles also controls the view of the business partner WebClient UI. Some business partner roles show specific views that are different from other roles. For example, the competitor role has views that normal business roles, such as sold-to and ship-to, don't have.

Roles also classify whether the business partner is a consumer, customer, prospect, competitor, or rented address. A business partner role is used for classification purposes during a data exchange between SAP CRM and SAP ERP.

Relationships

A *business partner relationship* specifies the connections between two partners. A business partner relationship has categories that describe the kind of relationship between two partners, for example, is a contact person of, is a bill to party of, and so on.

Essentially, these categories describe the characteristics of the business partner relationship. You can also put a validity period to the business partner relationship regarding how long the relationship should be set up.

Account Hierarchies

Account hierarchies form business partner groups within SAP CRM that can help an organization, for example, apply certain discounts to these groups. You can use them for statistical purposes and for marketing analyses. You can also use the hierarchy for *pricing*. Pricing is carried out using conditions such as pricing arrangements that are stored at a higher level of an organization structure and can be transferred to the lower levels.

These account hierarchies in SAP CRM have usage assigned through *hierarchy categories*. A hierarchy structure can have different functions and thus also different hierarchy categories. A hierarchy category is used for classification purposes and can therefore be freely chosen. You can assign a business partner to several hierarchies with various hierarchy categories. You define hierarchy categories in CUSTOMIZING FOR CUSTOMER RELATIONSHIP MANAGEMENT, by choosing MASTER DATA • BUSINESS PARTNER • ACCOUNT HIERARCHY • DEFINE HIERARCHY CATEGORY.

While creating the account hierarchies, you can assign the condition type to the hierarchy nodes where the business partners are assigned. For example, if you have any discounts assigned at the highest level of the account hierarchy, then the discounts will be applied to all the customers under that account hierarchy node.

You can replicate SAP ERP customer hierarchies to SAP CRM by performing the following steps:

1. Perform an initial load of the necessary Customizing settings from SAP ERP to SAP CRM. Use the initial load in SAP CRM via Transaction R3AS in the SAP CRM middleware and the Customizing object DNL_CUST_THIT.
2. Map the SAP ERP customer hierarchy categories to the SAP CRM account hierarchies via the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • BUSINESS PARTNER • ACCOUNT HIERARCHY • DATA EXCHANGE OF ERP CUSTOMER HIERARCHIES WITH SAP CRM • ASSIGN ERP CUSTOMER HIERARCHY TYPE TO CRM HIERARCHY CATEGORY.
3. Download the SAP ERP table `KNVH` (customer hierarchies) to SAP CRM. Use the initial load in SAP CRM (Transaction R3AS) with the business object `DNL_BUPA_KNVH`. A copy of the SAP ERP table `KNVH` is replicated to SAP CRM to create the account hierarchy from it.
4. Start creating account hierarchies in SAP CRM using Transaction `BPH_DNL`. The system creates an account hierarchy and activates the delta load for it.

2.2.2 Business Functions

Business partners can perform a number of functions in SAP CRM. The following sections look at these various functions in detail.

Address Data

Address data within a business partner is maintained when creating the business partner in SAP CRM. This is the relevant address and the communication data with the business partner. You can have multiple addresses based on the address usage; for example, standard addresses of the sold-to party have a different billing address and delivery address. If only one address is maintained in the customer master data, then that is referred to as a standard address.

The communication within the business partner can be address dependent or address independent. This data contains information such as language, telephone, mobile phone, fax, and standard communication. You can define the customer-preferred method of communication here.

Identification

Identification data within the business partner allows a company to enter industry-specific information and identification numbers (i.e., linking the SAP ERP customer master to the SAP CRM customer master based on ID type and tax information). In cases of vertical industry standards, you're required to have *Global Location Numbers (GLNs)* to be maintained in the account master. This can be entered into LOCATION 1 and LOCATION 2 number field within the IDENTIFICATION tab, which helps to determine the account based on GLNs.

An *identification number* is an alphanumeric key provided by external sources that can be used as an alternative to the business partner number to identify a business partner. To distinguish the business partner as clearly as possible, you can create as many identification numbers as required.

Tax classification and *tax number* data can be stored in the IDENTIFICATION tab of the business partner. This data is required to determine how business partners are to be taxed. The tax classification corresponds to the SAP ERP tax classification used in customer master records.

Control

Control information consists of *control parameters*, such as a business partner type, authorization group, and print format. An *authorization group* is used to stipulate which business partners a user is allowed to process. A *business partner type* is used to group the business partners together. *Print format* determines that the format of the print corresponds to the business partner for, for example, braille, large print, and so on.

Control data also provides information on business hours such as calling hours, goods receiving hours, and visiting hours. This information is very important because calling hour information can be used in many pre-sales and Interaction Center (IC) scenarios.

Within goods receiving hours, you assign the factory calendar that has the number of weekdays that the ship-to party receives the product. You also assign the hours with weekdays in the goods receiving hours. This factory calendar is passed from SAP CRM to SAP Supply Chain Management (SAP SCM) when creating a sales order, which is then used to schedule the item for a specific ship-to party.

Payment Transaction

A *payment transaction* allows an organization to maintain the bank details and payment card information of a business partner. When a transaction is processed for the customer, payment card information on the transaction is populated based on the data being fed in the customer master.

Classification

Classification information shows you whether the account is a competitor, consumer, customer, or prospect. If Transaction PIDE settings in SAP ERP have the account group mapped to the classification customer for a specific SAP CRM customer grouping, then the CUSTOMER checkbox is activated. Similarly, if the account is a consumer, the CONSUMER checkbox is activated. SAP ERP account groups are also shown in the CLASSIFICATION tab.

Long Texts

Long texts are customer text IDs that can be populated on the transaction for a specific customer. For example, if there is a requirement to populate the

customer-specific text on the sales order, then you'll need to configure the text determination procedure to pull the text maintained in the account master to the sales order. This is discussed in greater detail in [Chapter 4](#).

Status and Lifecycle Data

The customer information for this status is populated in the STATUS tab. Customer can be archived, centrally locked, or not released. Based on the customer status, you can choose whether to use this customer to process any transaction or not. Any status related to transaction blocking reason, delivery blocking reason, or billing blocking reason is shown on the business transaction if the customer master has any of these statuses populated.

You define blocking reasons in CUSTOMIZING FOR CUSTOMER RELATIONSHIPS MANAGEMENT by choosing MASTER DATA • BUSINESS PARTNER • STATUS MANAGEMENT • DEFINE BLOCKING REASONS.

A *lifecycle stage* enables you to record the different stages of a business partner as it progresses through its lifecycle, with each stage representing a different view at a particular point in time. For example, a business partner might start off as a potential and move on to an intermediate stage as a prospect, before finally becoming a customer.

A lifecycle stage is technically a business partner role. The assignment of stages to a lifecycle is defined by using the functionality provided by the role exclusion groups. A lifecycle therefore corresponds to a role exclusion group. These groups contain a range of roles that are mutually exclusive. To enable a sequence of statuses, you can define transitions between the roles contained in a role exclusion group, thus defining the order in which the lifecycle stages occur.

Marketing Attributes

Marketing attributes are used to create the target groups based on a certain attribute set. These are assigned to the business partner master data within the MARKETING ATTRIBUTES tab. This helps any organizations perform their marketing functions and segment their customers based on the marketing attributes.

Fact Sheet

A *fact sheet* gives you important information on the customer in a concise manner (PDF format is available). The fact sheet overview about business partners is taken from several sources, including business partner master data, statistical data, and transaction data derived from SAP CRM, SAP ERP, and SAP BusinessObjects Business Intelligence (SAP BusinessObjects BI).

Let's say a customer service representative is preparing to talk to a customer about some critical order. Customer service can pull the customer's fact sheet and get a customer information overview that may include order data, credit information, quotation information, contract information, and so on. The fact sheet is delivered preconfigured, which can be changed, if necessary. You can adapt the configuration for the fact sheet in CUSTOMIZING FOR CUSTOMER RELATIONSHIP MANAGEMENT by choosing UI FRAMEWORK • UI FRAMEWORK DEFINITION • FACT SHEET • MAINTAIN FACT SHEET.

To customize the print version, see SAP Note 1040229.

Employee Role for HR Integration

An employee is an internal business partner and is categorized as a person within an organization. You can establish a relationship between the customer and the organization employee. You can also create a business partner employee in SAP CRM, or you can integrate the employee within human resources in SAP ERP and upload it to SAP CRM. You can distribute your existing internal employee records by Application Link Enabling (ALE) from the HR application components in SAP ERP to SAP CRM.

If you make the settings in Customizing (you can do this in the CUSTOMIZING ACTIVITIES under INTEGRATION BUSINESS PARTNER – EMPLOYEE), the system creates the business partner with the employee role and the relationship formed between the employee and organization from the distributed HR master data.

Duplicate Checks

You can activate *duplicate checks* for the accounts and contacts in SAP CRM. Duplicate checks aren't activated by default. After a duplicate check is activated, a duplicate business partner is shown as a popup, and you can either discard the new business partner created or merge it with another account.

The prerequisites for a duplicate check are that a third-party provider solution is used, and the implementations for the Business Add-In (BAI) ADDRESS_UPDATE and BAI ADDRESS_SEARCH are active (Transaction SE19). Generally, TREX is used to execute the address index, and it's used for searching the duplicate address when the duplicate check is active. The partner product builds index pools (search pools) mostly outside of the SAP system, where the search takes place.

A duplicate check uses the Business Address Services (BAS) interface. You activate a duplicate check in CUSTOMIZING FOR SAP NETWEAVER, under APPLICATION SERVER • BASIS SERVICES • ADDRESS MANAGEMENT • DUPLICATE CHECK • ACTIVATE DUPLICATE CHECK AND DETERMINE LIMIT FOR BAPIS.

Make sure that the duplicate check has been activated for both index pools (tables BUT000 and BUT052). You can add the THRESHOLD BAPIS as shown in [Figure 2.24](#) if the new partner creation has the data 80% matched with the existing business partner in the system. In that case, the user will receive a duplicate check popup.

Table	Field	Index active	Threshold BAPIS	Logical search pool name
BUT000	PARTNER	<input checked="" type="checkbox"/>	80.0	SAP Business Partner
BUT052	ADDRNUMBEER	<input checked="" type="checkbox"/>	80.0	Contact Person Relationships (SAP Business)
KNA1	ADRNR	<input checked="" type="checkbox"/>	80.0	Customers, suppliers and commercial organ

Figure 2.24 Activating Duplicate Check and Determine Limit for BAPIS

Installing TREX

To learn how to install TREX, check SAP Note 1249465, TREX 7.1: Installing TREX for Embedded Search. Refer to Transaction TREXADMIN for TREX administration.

In the next section, we'll see the prerequisite steps for replicating customers from SAP ERP to SAP CRM. This is an important step in understanding how business partners are loaded in the SAP CRM system.

2.2.3 Customer Master Data Replication

In this section, we'll discuss the customer master replication process. The following two sections look at the prerequisite steps and subsequent process steps involved.

Prerequisite Steps

In this section, we'll look at the prerequisite steps to replicate customers from SAP ERP to SAP CRM. As previously mentioned, this is where business partners are loaded into the system, and it involves the following tasks:

- ▶ Defining the business partner number ranges (SAP CRM)
- ▶ Assigning number ranges to business partner groupings (SAP CRM)
- ▶ Assigning SAP ERP account groups to SAP CRM business partner classification (SAP ERP)
- ▶ Mapping SAP ERP account groups to the SAP CRM roles—sold-to/ship-to/bill-to/payer
- ▶ Mapping SAP ERP customer master standard fields to the SAP CRM custom fields
- ▶ Adding additional fields to customer adapter objects
- ▶ Maintaining adapter settings

Let's begin with our first task.

Define Business Partner Number Ranges

Follow these steps to define the business partner number ranges:

1. In the SAP CRM menu, go to Transaction BUCF.
2. On the EDIT INTERVALS: BUSINESS PARTNER screen, choose CHANGE INTERVALS.
3. Click on the ADD INTERVALS icon (+ icon) (see [Figure 2.25](#)).

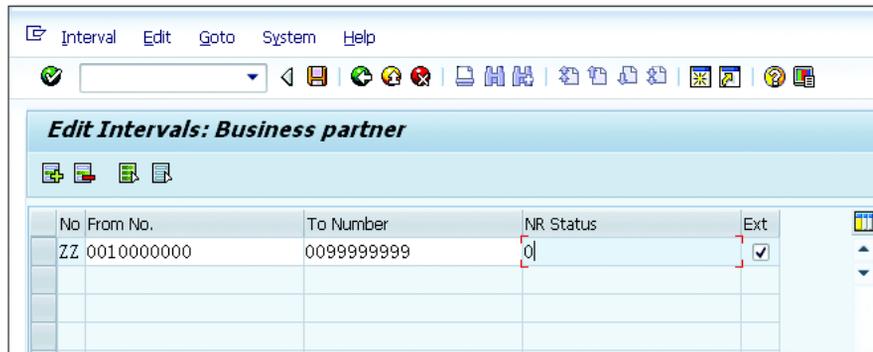


Figure 2.25 Adding Business Partner Intervals

Maintaining number ranges in SAP CRM is the same as maintaining them in SAP ERP (Transaction OVZC), by marking them as external number ranges.

Assign the Number Ranges to Business Partner Groupings

Follow these steps to assign the number ranges to the business partner groups:

1. Follow the menu path, SPRO • CROSS APPLICATION COMPONENTS • SAP BUSINESS PARTNER • BUSINESS PARTNER • BASIC SETTINGS • NUMBER RANGES AND GROUPINGS • DEFINE GROUPINGS AND ASSIGN NUMBER RANGES.
2. Choose NEW ENTRIES, and then add the entries as shown in [Figure 2.26](#) for SOLD-TO, SHIP-TO, BILL-TO, PAYER, and so on.
3. Assign the NUMBER RANGE to the grouping based on the same number ranges in SAP ERP.

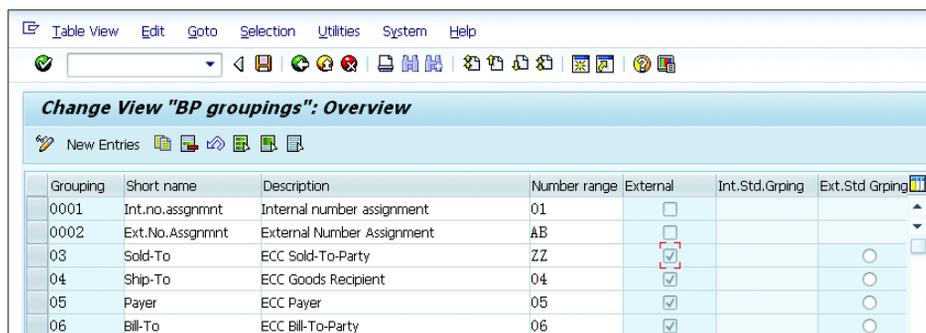
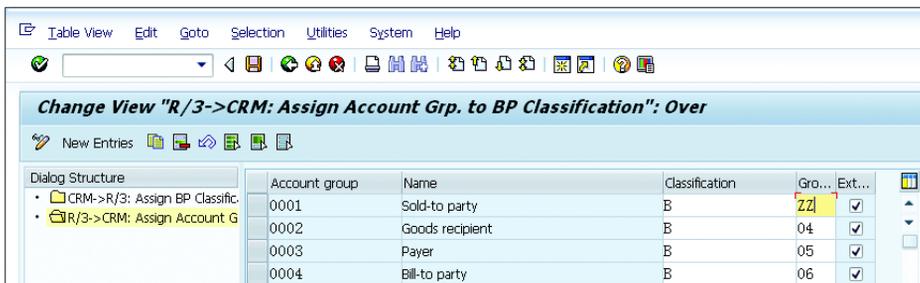


Figure 2.26 Maintaining Business Partner Grouping

Assign SAP ERP Account Groups to SAP CRM Business Classification

For each of the SAP ERP account groups, you have to define a mapping to an SAP CRM business partner classification and grouping by following these steps:

1. Access the activity using Transaction PIDE.
2. For each account group, specify the CLASSIFICATION (SAP CRM customer) and the GROUPING (i.e., number ranges).
3. In the dialog structure, choose R/3 • CRM: ASSIGN ACCOUNT GROUP TO BP CLASSIFICATION.
4. Choose NEW ENTRIES (see [Figure 2.27](#)).
5. Enter the values based on your business requirement.



Account group	Name	Classification	Gro...	Ext...
0001	Sold-to party	B	2Z	<input checked="" type="checkbox"/>
0002	Goods recipient	B	04	<input checked="" type="checkbox"/>
0003	Payer	B	05	<input checked="" type="checkbox"/>
0004	Bill-to party	B	06	<input checked="" type="checkbox"/>

Figure 2.27 Transaction PIDE – R/3 CRM Assign Account Group to BP Classification

Mapping SAP ERP Account Groups to the SAP CRM Roles

Customers loaded from SAP ERP to SAP CRM are loaded as sold-to parties for any account groups in SAP ERP. Therefore, it's necessary to map the account groups to the business partner roles as specified in SAP Note 914437 (Pre-assigning Business Partner Roles during Download from Account Group). The standard Business Transaction Event (BTE) that maps SAP ERP account groups to SAP CRM business partner roles needs to be enhanced using a custom user exit.

If you haven't implemented SAP HR and still want to maintain employees as a business partner in SAP ERP, you may want to consider the following steps to load employees from SAP ERP to SAP CRM:

1. Employees are created in SAP ERP as customers if SAP ERP is the source of any customer/employee master creation. SAP HR isn't implemented to store the employee master record.

2. The User Exit Z_PI_BP_ROLE_MAP_DE_EIOUT and the copy of SAMPLE_FCTMODULE_DE_EIOUT should be assigned to event DE_EIOUT (table TBE34 in SAP ERP) and be implemented in SAP ERP to map the account group to the role in SAP CRM.
3. By default, employees are downloaded as an organization and a sold-to party role. BAdI BUPA_INBOUND can be implemented in SAP CRM for converting a business partner category to a person and employee role.
4. Employees are also replicated by the same adapter object CUSTOMER_MAIN, which is used to replicate the customers from SAP ERP to SAP CRM.

When employees exist in SAP ERP as a specific account group, just like any other customer, and are being downloaded through standard middleware and not SAP HR-ALE integration, BAdI BUPA_INBOUND needs to be implemented in SAP CRM to assign the business partner category as a person; otherwise, employees are downloaded as an organization. If you're using the HR-ALE integration, then the change pointers are triggered in SAP ERP, which replicates to SAP CRM to post the inbound IDoc in SAP CRM and creates the employee master record in SAP CRM.

Mapping SAP ERP Customer Master Standard Fields to SAP CRM Custom Fields

Follow these steps to map the standard fields from the SAP ERP customer master to SAP CRM business partner custom fields:

1. Create the custom field on the customer master based on your business requirements through the Application Enhancement Tool (AET). This will add the custom fields in table BUT000.
2. In SAP ERP, go to Transaction SE11, and enter structure name "BSS_CENTI". Double-click on CI_CUST, and create structure CI_CUST by adding the custom fields that were added in SAP CRM business partner using AET. Make sure to have the custom field AET added in SAP ERP with the same sequence that was added in SAP CRM.
3. Repeat step 2 for structure BSS_CENTIX. Double-click on CI_CUST_X, and create the structure CI_CUST_X by adding the custom field that was added in SAP CRM business partner using the AET. Use the component type GB_BAPIUPD.
4. Modify the code to map the fields as a copy of function module (FM) SAMPLE_FCTMODULE_DE_EIOUT in SAP ERP.

5. Create the customer product entry in table TBE24, and then assign it to the event DE_EIOUT with the new function module created (copy of FM SAMPLE_FCTMODULE_DE_EIOUT) in table TBE34.

Adding Additional Fields to Customer Adapter Objects

There may be a requirement to filter certain fields in the adapter object and those fields that may not be available in the adapter object. Follow these steps to add the fields in the adapter object:

1. From the SAP CRM Easy Access menu, go to Transaction SM30.
2. Enter the table "SMOFFILFLD", and select MAINTAIN.
3. Choose NEW ENTRIES, and add the table name and field name from the customer master if the field isn't listed in the adapter object.
4. Save the changes.

Maintaining Adapter Settings

Follow these steps to maintain filters before downloading the customer and customer relationship:

1. Go to Transaction R3AC1.
2. Select the business object CUSTOMER_MAIN, and click DETAILS.
3. Go to the FILTER SETTINGS tab.
4. In the SOURCE SITE NAME field, choose the site (OLTP).
5. Maintain the filter settings based on your business requirement.
6. Save your settings.
7. Click the FILTER SYNC (R/3) button to synchronize your filter settings.

Process Steps

Now that you've completed all the prerequisite steps listed in the previous section, you can start loading the customer from SAP ERP to SAP CRM:

1. Go to the SAP CRM menu path, and access Transaction R3AS.
2. In the LOAD OBJECT field, enter "CUSTOMER_MAIN" (see [Figure 2.28](#)).

3. In the SOURCE SITE (SENDER) field, enter "R/3". In the DESTINATION SITE (RECEIVER) field, enter "CRM".
4. To run the replication, click EXECUTE or press **F8**.
5. Confirm the next screen message by choosing CONTINUE.

The screenshot shows the 'Start Initial Load' dialog box in SAP. The 'Object' section has a 'Load Object' field with the value 'CUSTOMER_MAIN' and a yellow arrow icon. The 'Data Flow' section has 'Source Site (Sender)' set to 'R/3' and 'Destination Site (Receiver)' set to 'CRM'.

Figure 2.28 Customer Master Initial Load

You can now monitor the replication status in SAP CRM by following these steps:

1. Go to the SAP CRM menu path, and access Transaction R3AM1.
2. In the LOAD OBJECT field, enter "CUSTOMER_MAIN".
3. In the OBJECT NAME field, enter the downloaded object "CUSTOMER_MAIN" to get the download status of this object.
4. The replication is complete if the object is marked with status DONE.

Replication Problems

In case of problems during replication, call Transaction SMWP (Middleware Portal), and search for error states in the RUNTIME INFORMATION area. You can also access Transaction SMW01 to get to the details of the error.

2.2.4 Plants

A *plant* is the logistical organizational unit where the products are manufactured and stored. An availability check of any product is based on the plant wherein the Available to Promise (ATP) check happens and the transfer of requirement occurs.

Within SAP CRM, a plant is created as a business partner and is mapped to the plant in SAP ERP or SAP Advanced Planning and Optimization (SAP APO) based on where the availability check happens. The plant business partner is chosen as the location and is mapped to the plant in SAP ERP or SAP APO in table CRMM_LOCMAP.

You can download a plant by executing the following steps:

1. Create number ranges for the plant via Transaction BUCF.
2. Define the grouping and assign the number ranges via the menu path, SPRO • CROSS APPLICATION COMPONENT • SAP BUSINESS PARTNER • BASIC SETTINGS • NUMBER RANGES AND GROUPINGS • DEFINE GROUPING AND ASSIGN NUMBER RANGES. Similar to any other business partner created in the SAP CRM system, a plant is also created as a business partner in the SAP CRM system. Therefore, it's necessary to define grouping and assign the number range for the plant within the SAP CRM system (see [Figure 2.29](#)).

Grouping	Short name	Description	Number range	External	Int. Std. Grping	Ext. Std. Grping
Z1	Plant	Plant	Z1	<input type="checkbox"/>	<input checked="" type="radio"/>	

Figure 2.29 Plant Business Partner Grouping

3. Run Transaction R3AS for the object DNL_PLANT.

These steps will create the business partner with the role plant and will map the location to the plant in SAP ERP or SAP APO in table CRMM_LOCMAP.

Plant Number Range

For the system to use the plant number range when downloading the plant, the INTERNAL STANDARD GROUPING radio button should be activated against the plant grouping entry. Also, SAP CRM doesn't have storage locations and shipping points. Storage location and shipping points are determined in SAP ERP when the sales orders are replicated from SAP CRM to SAP ERP.

2.3 Products

Products are used within the system to represent the material or services that are sold by an organization. Products consist of different types of data; for example, some of the information in the product master is specific to a sales area and is used while selling the product in any SAP CRM transaction. Some attributes can be specific to a certain plant, and some can consist of price conditions. Any business-relevant data related to the products are stored in the product master, including information on instance competitors, warranties, manufacturers, vendors, and so on.

Product type describes the basic characteristics of a product. The following are different product types:

- ▶ Material
- ▶ Service
- ▶ Financing
- ▶ Intellectual property
- ▶ Warranty
- ▶ Financial service

You can deactivate these product types based on your business requirements via the menu path, SPRO • CROSS-APPLICATION COMPONENTS • SAP PRODUCT • SETTINGS FOR PRODUCT TYPE • DEACTIVATE PRODUCT TYPES.

In this section, we'll look at the different product concepts, functions, downloads, and uploads that can be completed in SAP CRM.

2.3.1 Concepts

Let's consider the various concepts that are vital to understanding the purpose of products in SAP CRM.

Attributes and Set Types

Hierarchies consist of categories, and categories consist of set types and attributes. *Set types* are groups of fields (attributes) that are assigned to a product category. Some standard set types are assigned to the base hierarchy MAT_, which

is inherited to the next level of hierarchies, for example, MAT_HAWA, MAT_FERT, and so on. Based on your business scenarios, you can create your own set types and attributes.

Figure 2.30 and Figure 2.31 show one example of attributes and set types. A set type has attributes and can be organization dependent. If the attribute is marked as BW RELEVANT, the data source is created for the set type automatically. You also need to mark the set type as MATERIAL, SERVICE, FINANCING, or WARRANTY in the PRODUCT TYPE SELECTION box. You can also add fields to the UI product view and create UI configuration for set types.

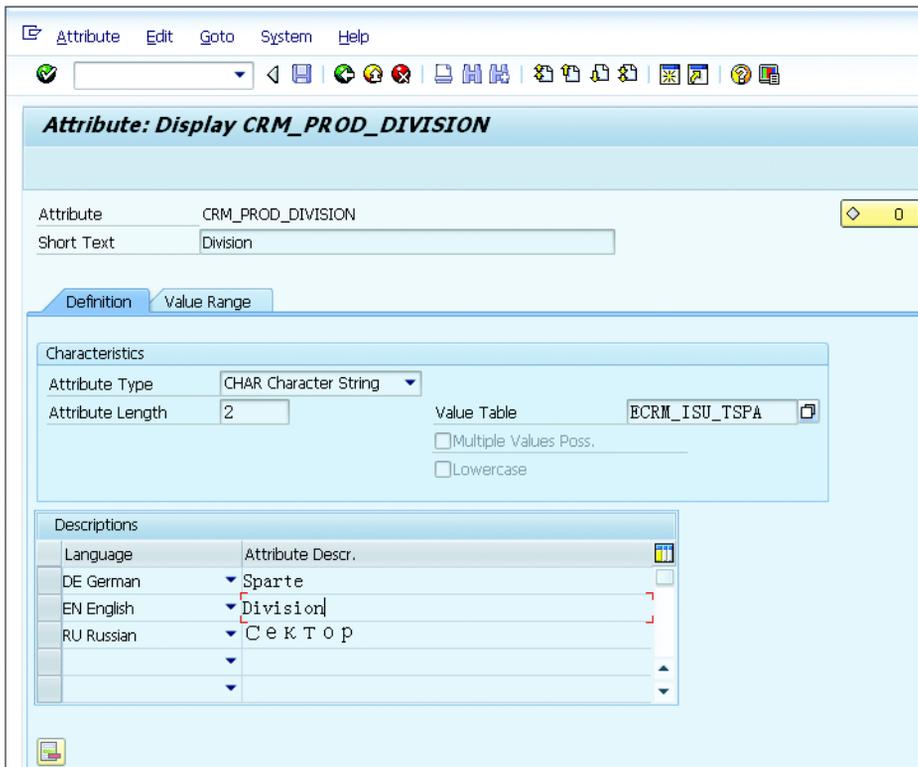


Figure 2.30 Define Attributes

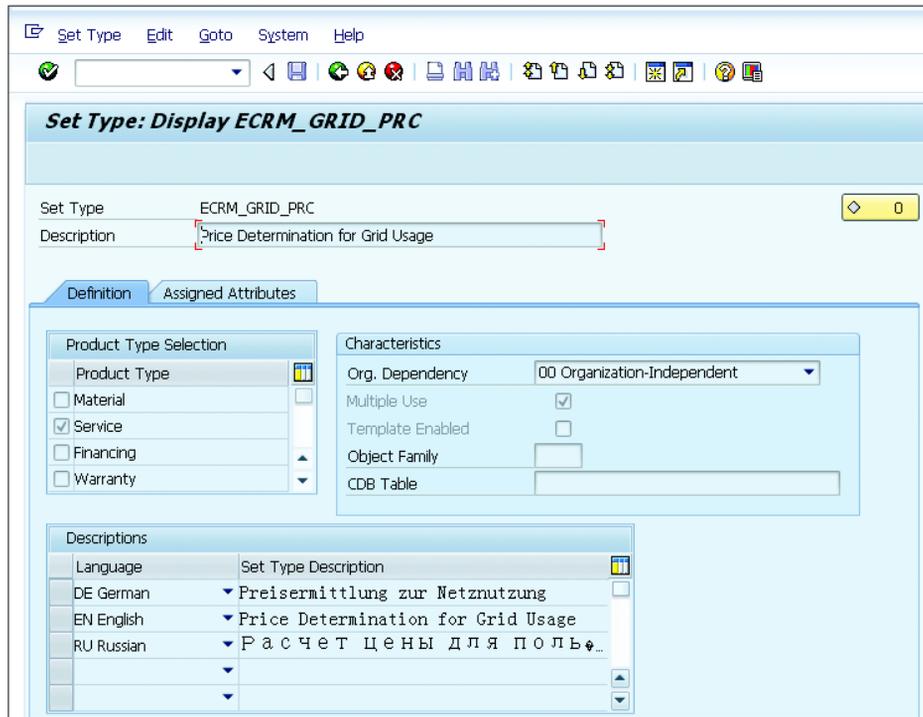


Figure 2.31 Define Set Types

Categories and Hierarchy

A *product hierarchy* consists of multiple categories and can be created based on your business requirements. Lower level categories inherit the set types from the higher level categories. Hierarchy R3PRODSTYP is the default base.

Product Categories

Products can be assigned to only one category within the same hierarchy. Set types can be assigned to more than one category within the same hierarchy that belongs to a particular product type, such as material. The same set type can't be assigned to a different hierarchy of the product type material.

Base hierarchies for the product types intellectual property, warranty, or service are created in SAP CRM. If you're creating service products in SAP CRM and not

replicating them from SAP ERP, don't use hierarchy R3PRODSTYP as the base hierarchy for service products; instead, create a new hierarchy in SAP CRM.

Loading a Service Product Type from SAP ERP

If you're loading a service product type from SAP ERP, you'll need to download the Customizing object DNL_CUST_SRVMAS. Products that are loaded to the SAP CRM system from SAP ERP must belong to at least this base hierarchy.

Figure 2.32 shows a diagram of the hierarchy, category, set type, and attribute flow.

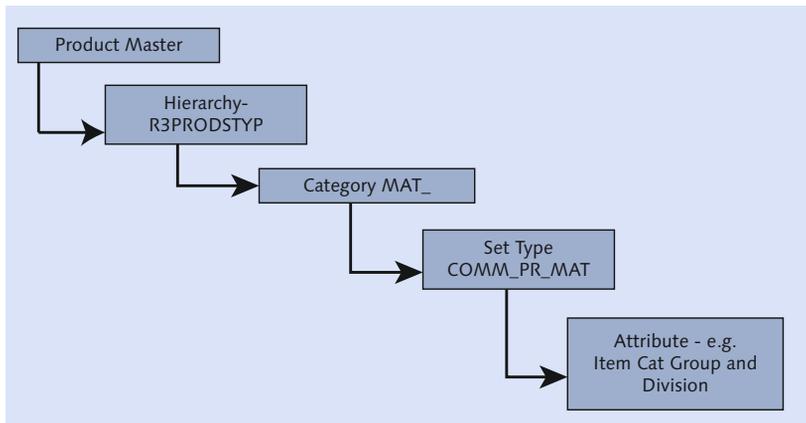


Figure 2.32 Hierarchy, Category, Set Type, and Attribute Flow

Relationships

Products can maintain relationships in the product master data. These relationships can be accessories, warranties, customer material records, vendors, components, customers, and so on. The data stored in the relationship of the product master is used for SAP CRM business transactions.

An *accessories relationship* can be used to assign additional products as a part of product proposals in the transaction. The CUSTOMERS tab in the product master relationship corresponds to the business partner material number. For example, an organization product number is M1, but the customer uses M2 for the same product. This can be maintained in the product master. Similarly, the VENDORS tab in the relationship corresponds to a vendor material number. Service is a default product for the service order processing.

Warranties can be assigned to the product master in relation with the validity period and are used in the product registration. The customer warranty is checked automatically in SAP CRM during transaction processing for service processes, confirmations, and complaints.

Customer material information can be maintained in the SAP CRM product master relationship and then loaded via the middleware adapter object CUST_MAT_INFO from SAP ERP to SAP CRM. Customer/distribution chain relationship is updated with the customer material info record from SAP ERP.

Customer-specific relationship types can be defined with the Easy Enhancement Workbench (EEW); however, additional steps are involved to make these types visible in the SAP CRM WebClient UI. See SAP Note 1139562 for more information on customer-specific relationships.

Competitor Products

You can create competitor products with a material product type, which carries the information about the product that is sold by a company's competitor.

2.3.2 Business Functions

The following sections look at the various business functions for products in SAP CRM.

Prices

Prices are used in business transactions such as sales orders, quotations, contracts, and more, based on various combinations in the condition tables. One of the fields within the condition table is PRODUCT. Product prices can be viewed on the product master within SAP CRM if the condition maintenance techniques are configured. Further details on pricing are provided in [Chapter 4](#), with information on the pricing functionality and how pricing works within business transactions.

If you want to use the pricing functionality in the product master, you must assign the product-specific condition tables and types to the appropriate condition group in CUSTOMIZING FOR CUSTOMER RELATIONSHIP MANAGEMENT by choosing MASTER DATA • CONDITIONS AND CONDITION TECHNIQUE • CONDITION TECHNIQUE: BASICS • CREATE MAINTENANCE GROUP.

If you want to use the pricing functionality in the product master, you also must assign the condition group to the application SAP CRM in CUSTOMIZING FOR CUSTOMER RELATIONSHIP MANAGEMENT by choosing MASTER DATA • PRODUCTS • SPECIAL SETTINGS FOR SALES OPERATIONS • ASSIGN CONDITION GROUP TO APPLICATION CRM.

If you want to view details of price calculation, you must enter the user parameter "PRC_CALC_TRACE" and the parameter value "X" in your user preferences (Transaction SU3).

Taxes

You can view the product taxes in the product master. By assigning the sales tax to the product, you determine how the product is being taxed. The details in the tax assignment block are country, region, tax type, and tax group. Details on how to set up taxes are discussed in [Chapter 3](#).

Units of Measure

You can maintain base unit, sales unit, delivery unit, and alternate units of measure (UoM) in SAP CRM like you do in SAP ERP. When creating a sales transaction, the sales UoM is populated by default. If the sales UoM isn't maintained, then the base UoM is defaulted on the sales transaction.

You can only use base UoM that have been defined in CUSTOMIZING FOR SAP WEB APPLICATION SERVER by choosing GENERAL SETTINGS • CHECK UNITS OF MEASUREMENT.

Sales Area Data

The sales area data within the product master is shown under the SALES AND DISTRIBUTION tab and contains information specific to sales. You can have multiple sales areas assigned to a product, and the information for each sales area can be different under the SALES AND DISTRIBUTION tab.

The concept is the same as in an SAP ERP. When creating the product in SAP CRM, you can assign the sales area manually, whereas if the product is replicated from an SAP ERP system, the data can't be changed manually. If you want to change the SAP ERP replicated product data, then you need to maintain the

set type for the product type in the configuration BAdI: Allow Changes to Product Data.

Sales grouping, such as product groups and volume rebate groups, are maintained in the sales area data. The two set types assigned to the sales area data are CRMM_PR_SALESA (Sales: Control Fields, Quantities) and CRMM_PR_SALESG (Sales: Groupings). You can also enter the product sales text that can be determined on the sales order if required based on the text determination procedure.

Material Data

A product's material data is applicable at the material level, meaning this data isn't dependent on the sales area data or purchasing data. This is similar to the basic data of the material master in SAP ERP. Material data consists of the basic data for materials, base UoM, Global Trade Item Number (GTIN), and basic text.

The division is maintained at the basic data level in SAP CRM, whereas in SAP ERP, the material has division at sales area level. A division is an attribute in Organizational Management. If a header division isn't used in your system, the division exists only at an item level and is derived from the product data. You specify in Customizing whether a header division is being used. The general item category group is defined to determine the item category on the sales transaction (e.g., NORM).

The *Global Trade Item Number (GTIN)* is a 14-digit number used to uniquely identify the products in SAP CRM business transactions and sales transactions. The GTIN includes various EAN/UCC numbering structures as well.

Service Data

Service data has set types that are used in the service processes. These set types are as follows:

► Transaction control field

This is set type contains an item category group and is available for service products with contracts and service products with resources. The item category group SRVP is provided for service products as part of standard Customizing and is used in service orders, contracts, and confirmations.

▶ **Duration of work**

This set type specifies the duration of work that is required to perform the service task. It's used as a default value in the service item of a business transaction and is available as information in subsequent resource planning.

▶ **Resource requirement**

This set type contains a rule as the default value specifying how the executing service organization, which is to perform the service, is determined automatically in the service item of the business transaction. This set type is available for service products with resources.

▶ **Default values for service contracts**

This set type contains the *service profile* and *response profile* to be used in service contracts in which the service is stipulated.

The service profile defines the times when a customer is entitled to a service, with specified availability times. The response profile is used to generate date and time intervals for the performance of service tasks. The system calculates the time interval within which a predefined task must be performed with reference to the service profile, to which the response profile is assigned.

▶ **Service plan**

This piece of data in the service product master contains the service interval template for the service plan.

Warranty Data

Warranties are guarantees made by a manufacturer, vendor, or seller to a customer to provide services for a certain period of time wholly or in part without charge. If you buy a new product, you may receive a warranty from the manufacturer that covers a specific period of time or level of use.

If you sell or lease a product, you may be legally obligated to provide your customer with a warranty for this product. As a service provider, you must issue a warranty description stating the extent of the services you offer, for your own protection as well as the protection of your customer.

Warranties can be categorized as a customer or vendor warranty, with a validity period category of time-dependent, counter-dependent, or time/counter-dependent.

Warranty data consists of service warranty information that can be used in the service process. The warranty determination on the service transaction is driven through the master data setup. The warranty set types are Warranty (CRMM_PRWTY), Warranty Catalog Data (CRMM_PRWTY_CAT), Warranty Services (CRMM_PRWTY_SRV), and Warranty Counter Data (CRMM_PRWTY_CNT). These are used in the warranty master.

Status Management

Status within the product master controls whether you can use the product in a business transaction or whether it's locked, deleted, and so on. The following system statuses are predefined in various central SAP tables for the object type *Product Master Data (PRD)* and can't be changed:

- ▶ LOCKED
- ▶ CAN BE ARCHIVED
- ▶ TO ARCHIVE
- ▶ ARCHIVED
- ▶ DELETED

You can also configure user status, but it doesn't have any effect on the standard functionality.

2.3.3 Products Download

To download products successfully, prerequisite steps must be taken for downloading customized objects for categories in [Chapter 3, Section 3.5.3](#) under "[Replicate Customizing Objects from SAP ERP to SAP CRM.](#)" After the customizing objects are loaded successfully, the steps in the next sections need to be carried out before loading the products from SAP ERP to SAP CRM.

Defining Number Ranges for Materials

The material number range setting is different from the customer master and doesn't require number range definition for replicating materials from the R/3 system to the SAP CRM system. If the categories within the product type material aren't assigned to any of the groups containing number ranges, then the system

will take the number from the SAP ERP system and will automatically create products with the same number in SAP CRM.

To avoid duplicating numbers when creating materials in both SAP CRM and SAP ERP, it's imperative that the number ranges for materials in SAP CRM and SAP ERP don't overlap. The configuration path to verify the number ranges for the product master in SAP CRM is CROSS-APPLICATION COMPONENTS • SAP PRODUCT • SETTINGS FOR PRODUCT TYPE • NUMBER ASSIGNMENT • DEFINE NUMBER RANGES FOR THE PRODUCT TYPE "MATERIAL". [Figure 2.33](#) shows the information for the product number range maintained.

No.	From No.	To Number	NR Status	Ext
01	000000000000000000000001	000000000000000000999999	49893	<input type="checkbox"/>
02	000000000000000000999999	000000000000000000999999	50104584	<input type="checkbox"/>

Figure 2.33 Defining Number Ranges for the Product Type Material

Maintaining Number Range Groups

You can assign a number range and group the category ID within the configuration path, CROSS-APPLICATION COMPONENTS • SAP PRODUCT • SETTINGS FOR PRODUCT TYPE • NUMBER ASSIGNMENT • DEFINE NUMBER RANGES FOR THE PRODUCT TYPE "MATERIAL" to configure the number ranges. This will be based on your business scenarios and based on what category ID you need to assign what number range.

To maintain the number range to the category ID, you need to maintain the group and assign the number range to the group. [Figure 2.34](#) shows the group maintenance screen for the product master.

You can assign the number range to the maintained groups and then assign the material types to the group. When creating the products, the numbers assigned to the material are taken from the group.

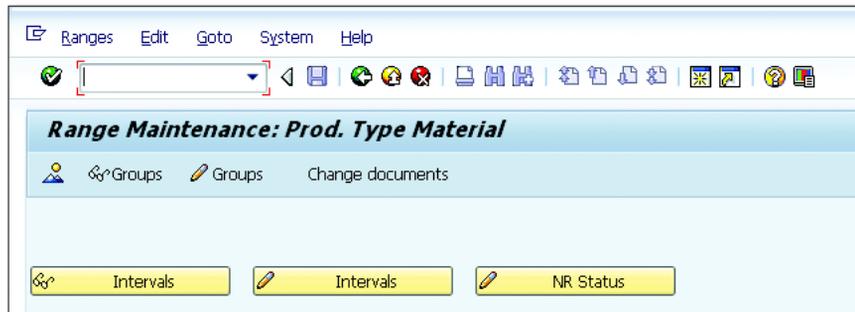


Figure 2.34 Maintaining Groups

Figure 2.35 shows the GROUP OVERVIEW screen from the product group maintenance. You can assign the category ID to the product group here.

Group	Element	Elea. Text	From No.	To No.	NR Status	Ext.
Group Without Text			1	99999	49893	
ISU Technical Objects			999999	99999999	50104584	
Not assigned						

Figure 2.35 Group Overview

Defining Item Category Groups

To avoid any failure when loading material from SAP ERP to SAP CRM, it's necessary to sync the item category group configuration from SAP ERP to SAP CRM by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORY GROUP.

Maintaining the Adapter Settings

To load the material from SAP ERP to SAP CRM, it's important to maintain adapter object MATERIAL with the necessary filter settings by following these steps:

1. From the SAP CRM menu, go to Transaction R3AC1.
2. Select business object MATERIAL, and click DETAILS or press **F2**.
3. Go to the FILTER SETTINGS tab (see [Figure 2.36](#)).
4. In the SOURCE SITE NAME field, choose the site (R/3).
5. Maintain the object filter settings (based on your business requirements).
6. Save your settings.

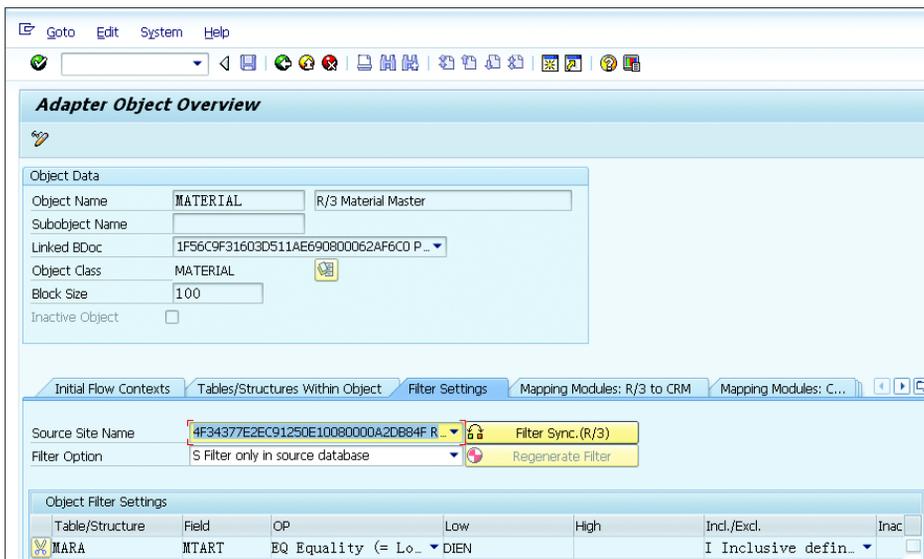


Figure 2.36 Adapter Object MATERIAL

Replicating Products

After the adapter object MATERIAL setting is completed, the next step is to load the materials from SAP ERP to SAP CRM. To initiate the load, follow these steps:

1. From the SAP CRM menu, go to Transaction R3AS.
2. In the LOAD OBJECT field, enter "MATERIAL" (see [Figure 2.37](#)).
3. In the SOURCE SITE (SENDER) field, enter "R/3", and in the DESTINATION SITE (RECEIVER) field, enter "CRM".
4. To run the replication, click EXECUTE, or press **F8**.
5. Confirm the next screen message by clicking CONTINUE.

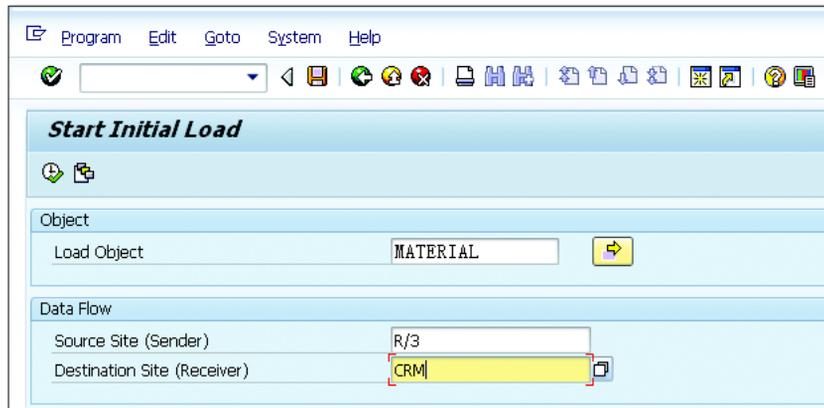


Figure 2.37 Material Initial Load

Service Master Replication

To replicate the service master into the product from SAP ERP to SAP CRM, use adapter object SERVICE_MASTER.

Monitoring Replication Status

After the material load is started by executing the steps in the “Replicating Products” section, the next step is to monitor the load to make sure the products are loaded from SAP ERP to SAP CRM successfully.

1. Run Transaction R3AM1.
2. In the LOAD OBJECT field, enter “MATERIAL”.
3. In the OBJECT NAME field, enter the downloaded object “MATERIAL” to get the download status of this object.
4. Verify that the replication is complete by checking whether all objects have the status DONE.

2.3.4 Products Upload

You can upload products from SAP CRM to SAP ERP. The product upload isn't automatic and has to be done manually for each product, or you can schedule job COM_PRODUCT_UPLOAD_BATCH to upload the product changes to the SAP

ERP system. Choose CUSTOMIZING: SAP IMPLEMENTATION GUIDE • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • PRODUCTS • SETTINGS FOR PRODUCT TYPE • ALLOW UPLOAD FOR A PRODUCT TYPE to upload any product from SAP CRM to SAP ERP. The configuration is based on the product type and can be activated or deactivated to upload the product from SAP CRM to SAP ERP based on your business requirement.

You can also allow changes in the product master by making the set type entries with BADI: Allow Changes to Product Data, per your business requirement.

2.4 Pricing

Pricing in SAP CRM is used to carry out business transactions such as quotations, sales orders, contracts, or service processes. Based on a company's requirements, the pricing procedure can be comprised of different condition types such as list price, discounts, freight charges, rebate condition (if applicable), surcharges, and more. While creating a business transaction, the system uses the condition techniques to determine the correct price for the product. Pricing information in SAP CRM can be downloaded from SAP ERP or can be created in SAP CRM directly.

In this section, we'll look at the pricing procedure determination, group condition maintenance, and pricing routines using the Internet Pricing and Configurator (IPC).

2.4.1 Pricing Procedure Determination

A pricing procedure is determined based on the sales area (sales organization, distribution channel, and division), customer pricing procedure, and document pricing procedure. A pricing procedure is comprised of a list of condition types and subtotals based on business requirements. *Routines* can be assigned to each of the condition types based on business logic.

Figure 2.38 shows the pricing procedure determination configuration. The path to this configuration is SPRO • CRM • BASIC FUNCTIONS • PRICING • PRICING IN THE BUSINESS TRANSACTION • DETERMINE PRICING PROCEDURES.

The screenshot shows the SAP Pricing Procedure Determination interface. The title bar reads "Change View 'Determination of Pricing Procedure': Overview of Selected". Below the title bar is a menu bar with "Table View", "Edit", "Goto", "Selection", "Utilities", "System", and "Help". A toolbar contains various icons for navigation and editing. The main area displays a table with the following data:

Determination of Pricing Procedure					
Sales Organization...	Dis. Chan.	Division	Doc. Pri...	Cust. Pri...	Procedure
0 10000002	00	33	A	1	ZPRDEM

Figure 2.38 Pricing Procedure Determination

Before creating or determining a pricing procedure, condition types, access sequences, and condition tables should be configured or loaded from SAP ERP based on your business requirements:

► **Condition type**

Condition types are the actual price, discounts, surcharge, and so on in the business document. Condition types can be determined automatically or entered manually. For automatic determination of a condition type, the access sequence should be assigned to it. A condition type can be a group condition, header condition, or an item condition:

- *Group condition*: A group condition allows you to determine the price based on the material group. You can group the product to determine the price for a specific condition type.
- *Header condition*: A header condition is the condition type that applies to the complete sales order and is at the header level, for example, header pricing.
- *Item condition*: An item condition is the condition type that applies to a specific line item on the sales order and is at the line item level, for example, item pricing.

► **Access sequence**

An access sequence determines the sequence of the condition tables, which therein determines the condition record for a specific condition type.

► **Condition table**

A condition table consists of a list of fields that determines the correct condition type based on the access sequence. The SAP-delivered condition table ranges from 0 to 500 and customer-specific tables range from 501 to 999.

► Condition records

These are the entries or records based on the condition table and fields. The actual price, discounts, and surcharge are entered in the condition records for a specific period. These are either loaded from SAP ERP or can be maintained directly in SAP CRM.

As we go through the details regarding pricing, you'll learn how these tables and configurations are created and performed. Specific steps are required to load the customer-specific condition records and the maintenance of the same in SAP CRM. To download the pricing procedure and condition records, see the following sections and their designated tasks.

Define SAP ERP Fields in SAP CRM

To download the condition records, the fields within the condition tables in SAP CRM should be in sync with the SAP ERP condition tables; that is, if certain fields aren't available in SAP CRM, those should be added to load the condition records successfully.

If the SAP ERP fields aren't present in structure CND_MAPT_ACS_REM, they should be added into structure CND_MAPT_ACS_REM_CUST. An example condition table consisting of a price reference material (PRICING REF. MATL) as a customer field from SAP ERP is shown in [Figure 2.39](#).

Display Condition Table (Pricing Sales/Distribution): Technical View

Dictionary elements Other description Field attributes...

Table: 828 [SOrg/DC/Div/PrcLstTyp/PrcRefMtl]

With validity period
 with release status

Selected fields						
Short Description	Key	Footer fld	Text field	Field Name	Data element	Domain
Sales Organization	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	VKORG	VKORG	VKORG
Distribution Channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	VTWEG	VTWEG	VTWEG
Division	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	SPART	SPART	SPART
Price List	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	PLTYP	PLTYP	PLTYP
Pricing Ref. Matl	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	ZZPMATN	PMATN	MATNR

Figure 2.39 Condition Table

The pricing reference material is created as a Z-field in SAP CRM and should therefore be added to structure CND_MAPT_ACS_REM_CUST, as shown in [Figure 2.40](#).

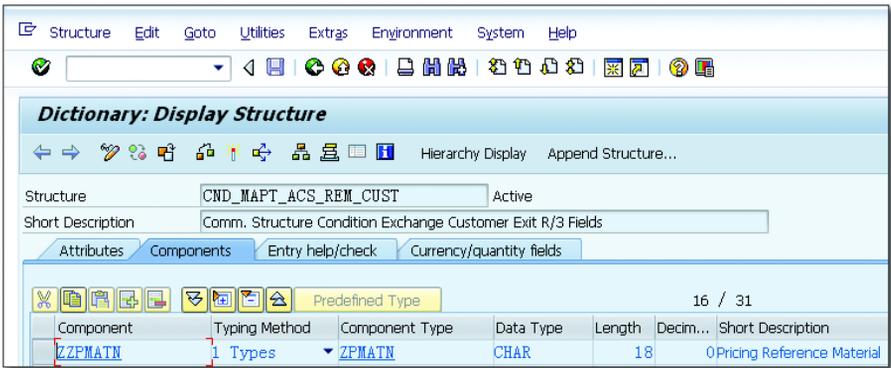


Figure 2.40 Structure CND_MAPT_ACS_REM_CUST

Define Customer-Specific Fields in the SAP CRM Field Catalog

The customer-specific field PRICING REF. MATL should be added in the field catalog within SAP CRM. These are the fields that are going to be accessed to determine the price after being added to the field catalog. They are available in the communication structure of CRM_COND_COM_BADI. [Figure 2.41](#) shows where the customer specific field is added.

To define the customer-specific fields in the field catalog of SAP CRM, follow the path, CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • PRICING • DEFINE PRICING RELATED SETTINGS • DEFINE FIELD CATALOG.



Figure 2.41 SAP CRM Field Catalog

Define Field Mapping between SAP CRM and SAP ERP

SAP provides table `CND_MAPC_CNV_FLM` wherein you'll find the field mapping between SAP CRM and SAP ERP for standard fields with the conversion function module assigned if needed.

Figure 2.42 shows an example for the `PRICING REF. MATL` field, which is maintained in table `CND_MAPM_CNV_FLM`.

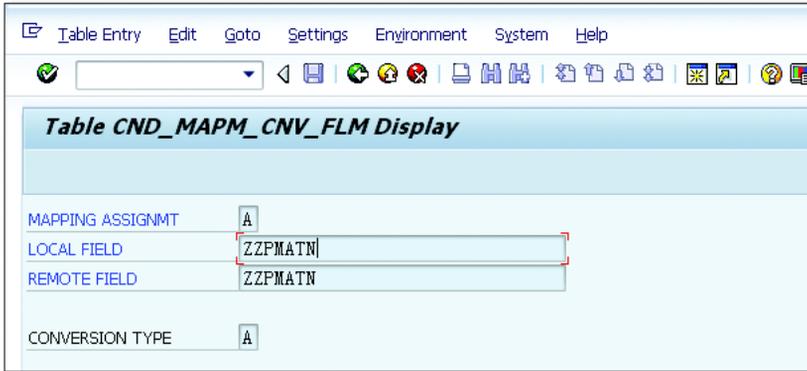


Figure 2.42 Table `CND_MAPM_CNV_FLM` Maintained with the Pricing Ref. Matl Field

Field Mapping for Custom Fields

To maintain the field mapping for custom fields, table `CND_MAPM_CNV_FLM` should have the entry of the field mapping, as shown in Figure 2.42. This can be added via view `V_CND_MAP_CNVFLD`. Also, if the data element of the SAP CRM field catalog and the component type of the same field defined in table `CND_MAPT_ACS_REM_CUST` are different, then you need to enter `CONVERSION TYPE "C"`, and the conversion routine is defined in `BAdI CND_MAP_CNV_FIELD`.

For more details, refer to SAP Note 501567: Copying Conditions for KUNAG (Sold-to-Party) into SAP CRM.

Customizing Object Download

After the condition tables with custom fields are created in SAP CRM, you can load the condition tables from SAP ERP to SAP CRM before loading the actual condition records.

To download the Customizing object and sync the condition tables and pricing procedure between SAP ERP and SAP CRM, follow these steps:

1. From the SAP CRM menu, go to Transaction R3AS.
2. In the LOAD OBJECT field, enter "DNL_CUST_CNDALL" (see [Figure 2.43](#)).
3. In the SOURCE SITE (SENDER) field, enter "R/3", and in the DESTINATION SITE (RECEIVER) field, enter "CRM".
4. To run the replication, click EXECUTE, or press **[F8]**.
5. Confirm the next screen message by choosing CONTINUE.
6. Go to Transaction R3AM1 to confirm whether the Customizing load ran successfully.
7. Verify that all the pricing procedures, access sequences, condition types, and condition tables are generated corrected after the previous download.

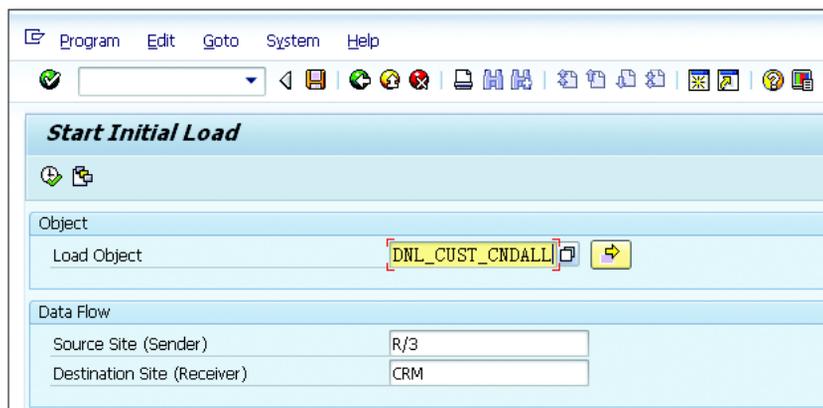


Figure 2.43 Download Pricing for Customizing Objects

Create Condition Tables

After the pricing Customizing object is downloaded successfully, the next step is to create the condition adapter objects for the condition tables and then load the condition records by running these conditions adapter objects one by one. Follow these steps to do so:

1. Go to Transaction R3AC5.
2. Create the adapter objects for the condition tables (if objects don't exist as standard) as a copy of one of the standard objects, for example, DNL_COND_A828 (see [Figure 2.44](#)).

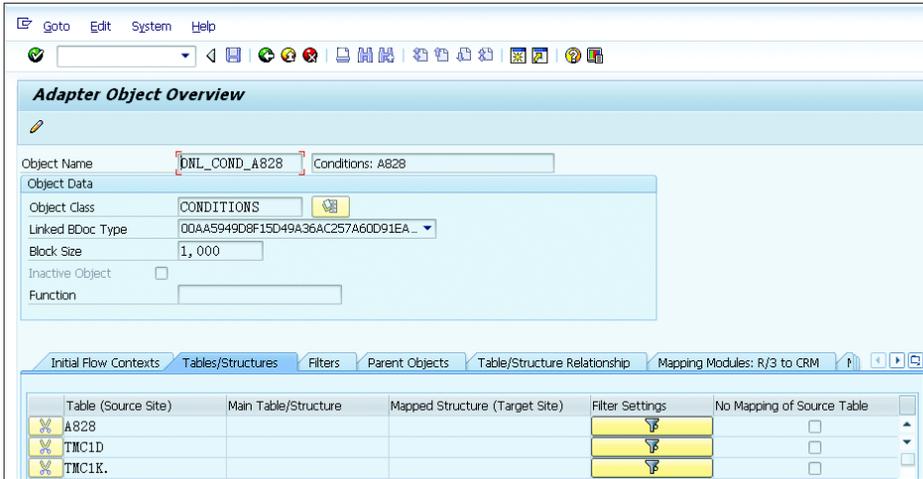


Figure 2.44 Condition Adapter Object

Download Condition Records

Now that you've created the condition tables, it's time to download the condition records by following these steps:

1. Go to Transaction R3AS.
2. In the LOAD OBJECT field, enter "ZDNL_COND_A828".
3. In the SOURCE SITE (SENDER) field, enter "R/3", and in the DESTINATION SITE (RECEIVER) field, enter "CRM".
4. To run the replication, click EXECUTE, or press **F8**.
5. Confirm the next screen message by clicking CONTINUE.

Repeat these steps for all the condition adapter objects to load all the condition records. After the condition records are loaded, and the pricing configuration is completed, price determination will be in effect on the SAP CRM business transactions.

2.4.2 Condition Maintenance Group

The condition records that are downloaded can be viewed within the CONDITION MAINTENANCE GROUP area. This makes it easier for any user to refer to the condition tables in the condition maintenance group rather than going through multiple tables to identify which records were applied in the business transactions.

Follow these steps to create the maintenance group:

1. Create the maintenance group and add the condition table with the condition type as stated in [Figure 2.45](#) by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • CONDITIONS AND CONDITION TECHNIQUE • CONDITION TECHNIQUE: BASICS • CREATE MAINTENANCE GROUP.



Figure 2.45 Creating a Condition Maintenance Group

2. Add the condition table and condition type to the condition maintenance group details, as shown in [Figure 2.46](#). These are the condition type and the condition tables that can be viewed as a part of the master data record.
3. The condition maintenance group for the context assignment is necessary to maintain the condition records in SAP CRM. To add the maintenance group created to the maintenance context GCM, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • CONDITIONS AND CONDITION TECHNIQUE • CONDITION TECHNIQUE: BASICS • DEFINE MAINTENANCE GROUPS FOR CONTEXT. [Figure 2.47](#) shows the assignment of the condition maintenance context to the ZMAINTGRP group.

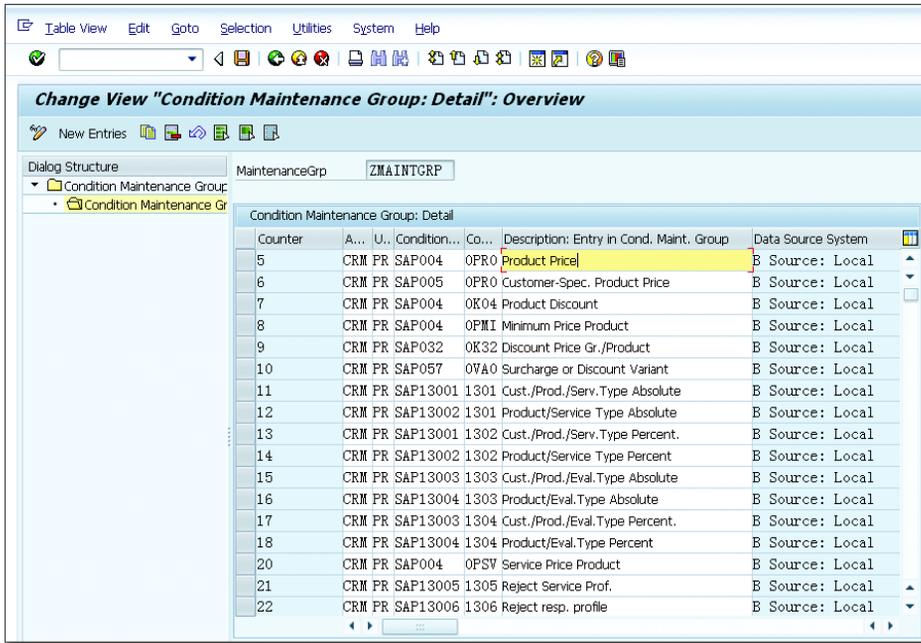


Figure 2.46 Condition Maintenance Group Details

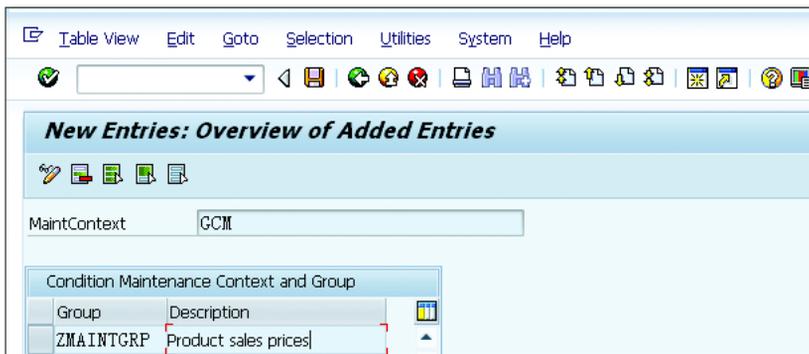


Figure 2.47 Defining Maintenance Groups for Context

4. Run Transaction /SAPCND/GCM (Maintain Conditions), and enter the maintenance group created in [Figure 2.47](#) to view the condition table entries for the condition type listed in the configuration steps for the maintenance group. [Figure 2.48](#) shows the initial GENERAL CONDITION MAINTENANCE screen. You need

to add the maintenance group ZMAINTGRP created in the previous step and execute the transaction to add or change the condition record for the condition type.

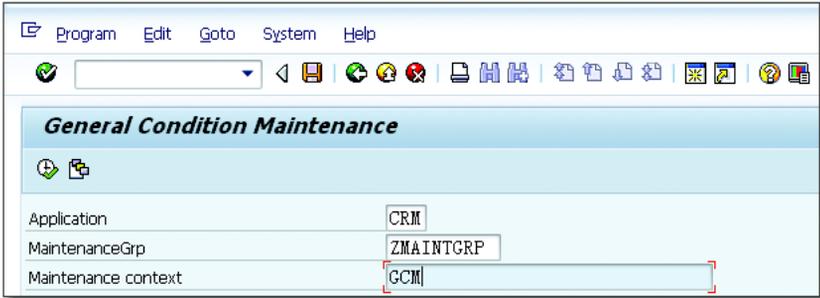


Figure 2.48 General Condition Maintenance

BAdI /SAPCND/ROLLNAME

You have to implement BAdI /SAPCND/ROLLNAME for the customer-specific field in SAP CRM. This is required to view the condition records with custom fields in SAP CRM condition maintenance.

Similarly, you can add conditions to the product master by going through these same steps. Instead of creating a new condition maintenance group, you have to use condition group PRODUCTCRM. This will bring the condition records in the product master, and you can view the same in Transaction COMMPRO1 under the CONDITION tab.

2.4.3 Pricing Routine Using the Internet Pricing and Configurator

The *IPC* is used in SAP CRM to calculate the price in any of the business documents, such as quotations, orders, contracts, and more. The *IPC* is used in the Web Channel and the *IC*. The routines created in SAP CRM are developed in Java and assigned to the condition type within a pricing procedure. Downloading the pricing customization takes care of assigning the routine to the condition type if pricing is loaded from SAP ERP.

After you've carried out all of the necessary activities, there are certain custom routines that you've implemented in SAP ERP that you'll want to create in SAP CRM. In this section, we'll look at the steps involved in creating pricing routines in SAP CRM.

Creating a Java Project in Eclipse

To create a new custom routine, you must have the Java project created in the Eclipse environment. (We're using Eclipse as an example and illustrating the steps mentioned in SAP Note: 809820 – User Exit Concept for Pricing.)

Prerequisite

The pricing user exits will be compiled with J2SE 1.4.x or a compatible Java compiler of version 1.4.x. Also the libraries must be compatible with J2SE 1.4.x. A standard installation of the Java Development Kit (JDK) is sufficient. It's important that the compiled class files are compatible with a JDK 1.4 version, and the standard library used is only JDK 1.4. The Virtual Machine Container (VMC) Java environment of SAP BASIS 7.00 only supports JDK 1.4 class files and libraries.

Follow these steps:

1. Create a workspace folder for Eclipse on your desktop.
2. Unpack the ZIP file attached to SAP Note 809820 into the workspace folder. Then, a subdirectory named PRC_UE_CUSTOMER should appear containing the project files.
3. Start your SAP GUI on the same machine, log in to the system, and start Transaction /SAPCND/UE_DEV. [Figure 2.49](#) shows the initial screen of Transaction /SAPCND/UE_DEV wherein you can download the Java routine files from SAP CRM and upload the changes made to the Java routine files.
4. Select the DOWNLOAD option, and select LIBRARIES.
5. Follow the path to the newly created subfolder PRC_UE_CUSTOMER, and click the EXECUTE button. The downloading will take a few minutes and create some subfolders in the PRC_UE_CUSTOMER directory containing some Application Programming Interface (API) jars and source jars.
6. Start Eclipse, and select the manually created folder as the workspace. Eclipse creates the metadata for an empty workspace.
7. Select FILE • IMPORT AND IMPORT AN EXISTING PROJECT INTO WORKSPACE. Select the PRC_UE_CUSTOMER folder as the root directory. Eclipse should show PRC_UE_CUSTOMER as the project name.
8. Now that the Java Runtime Environment (JRE) system libraries have to be added to the build path of Eclipse, right-click on the project, and select BUILD PATH • ADD LIBRARIES. Select JRE SYSTEM LIBRARY, and use a 1.4.x version.

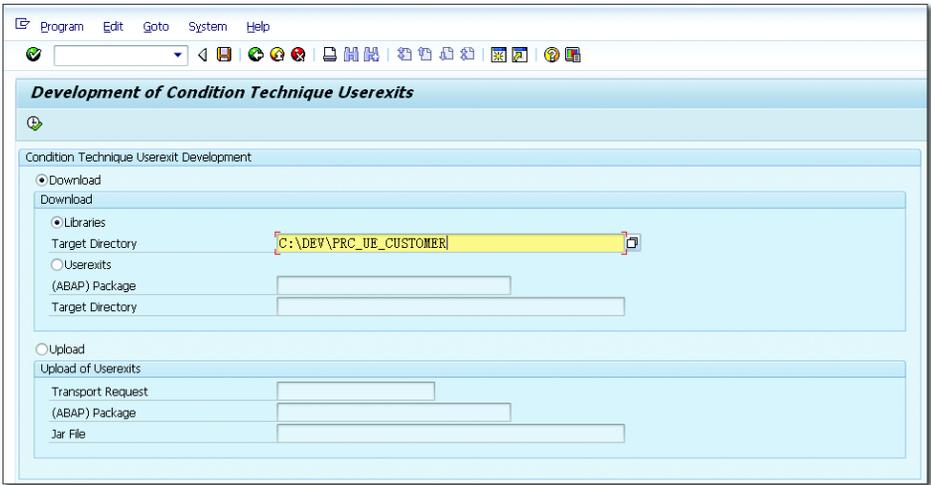


Figure 2.49 Development of Condition Technique User Exits

- 9. Prepare the API source, and build the HTML documentation. Right-click on BUILD_API_DOC.XML, and select RUN As • ANT BUILD. Ignore the error message during that process.
- 10. Refresh the Eclipse project by right-clicking on the project and selecting REFRESH in the context menu or by pressing [F5].

Creating Routines

Now that the project is ready, it's time to add the custom routines based on your business requirements. You'll create the routines in the SRC folder and save the file without any errors. The following sections look at these tasks in greater detail.

Create the PRC_UE_CUSTOMER.jar

After implementing the customer user exits, you'll want to upload the user exits classes into the system. However, you must first archive all the classes (preferably together with the sources) into a Java Archive (JAR) file. Before creating the JAR file, make sure the Java sources and compiled classes are up to date and error free.

To generate a JAR file, Eclipse provides the JAR packager feature that guides you through easy steps to configure and create a JAR file. Follow these steps:

1. From Eclipse's FILE menu, choose the EXPORT option.
2. From the popup list, choose the JAR FILE, and click NEXT.
3. From the resources tree of PRC_UE_CUSTOMER, choose only the SRC node making sure that the other nodes LIB_API and LIB_SRC aren't chosen.
4. Make sure that the EXPORT GENERATED CLASS FILES AND RESOURCES option is selected.
5. Enter a name and path for the JAR file (e.g., "PRC_UE_CUSTOMER.jar").
6. Click on FINISH to generate the JAR file.
7. Go to the SAP GUI and Transaction /SAPCND/UE_DEV. Select the UPLOAD radio button as shown in [Figure 2.50](#), and add the TRANSPORT REQUEST number to log the changes. Select the JAR file, and execute the upload.

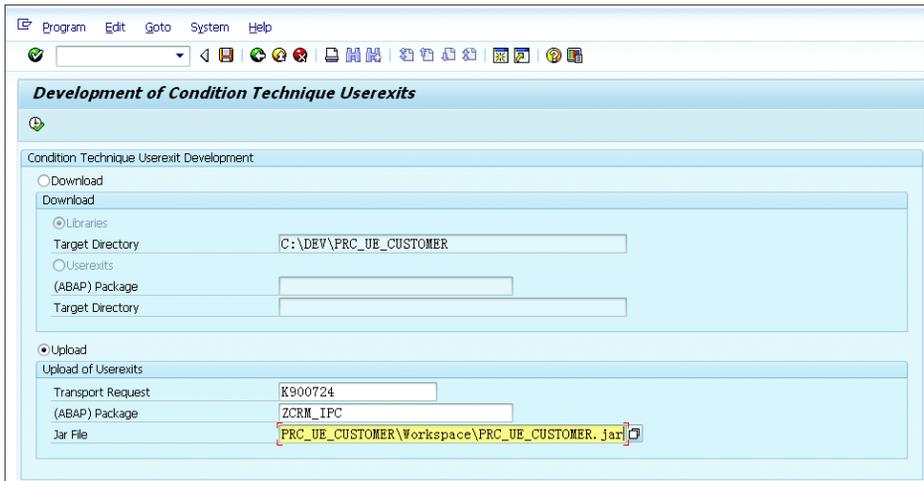


Figure 2.50 Uploading the User Exit JAR File

After the user exits are loaded to the SAP system, it's time to register the routine and the attributes if required in the configuration.

User Exit Types

Figure 2.51 shows the different user exit types for USAGE PR (pricing). These need to be configured based on your requirement and the routines added to the pricing procedure. Use Transaction /SAPCND/UEASS to configure the user exit types.

Any rules based on the user exit type should be added as an implementation and formula.

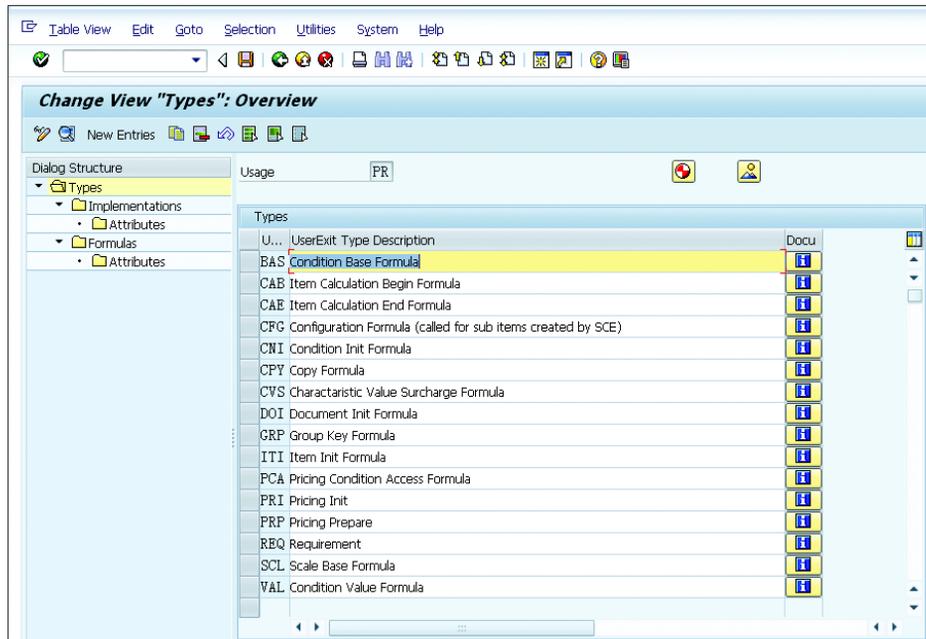


Figure 2.51 User Exit Types

On the CHANGE VIEW "TYPES" DETAILS screen for each USER EXIT TYPE, you'll see the SCOPE and USEREXIT INTERFACE fields (see Figure 2.52). Options within the SCOPE field include the following:

- ▶ A NUMBER-DEPENDENT
The user exit is referenced via a formula number from other configurations such as the pricing procedure.
- ▶ B ONE UNIQUE IMPLEMENTATION
The user exit with the number 0 will be executed.

► C MULTIPLE IMPLEMENTATIONS

Each user exit with an attached formula number will be executed.

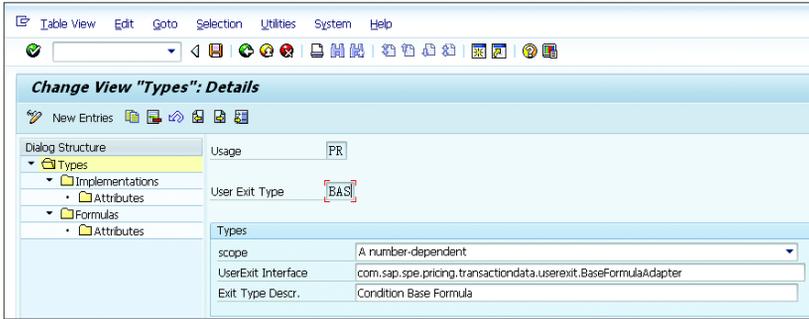


Figure 2.52 User Exit Type Details

Register an Implementation

After you identify which routine belongs to which user exit type, you need to register an implementation within this step. [Figure 2.53](#) is an example of the REQ user exit type.

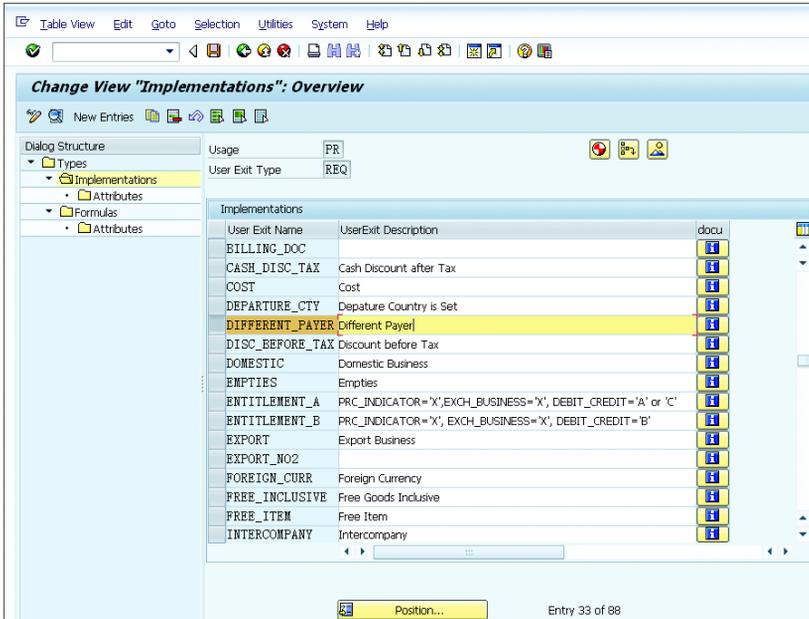


Figure 2.53 User Exit Type REQ Implementations

Figure 2.54 shows the required ATTRIBUTES assigned to the implementation in the user exit.

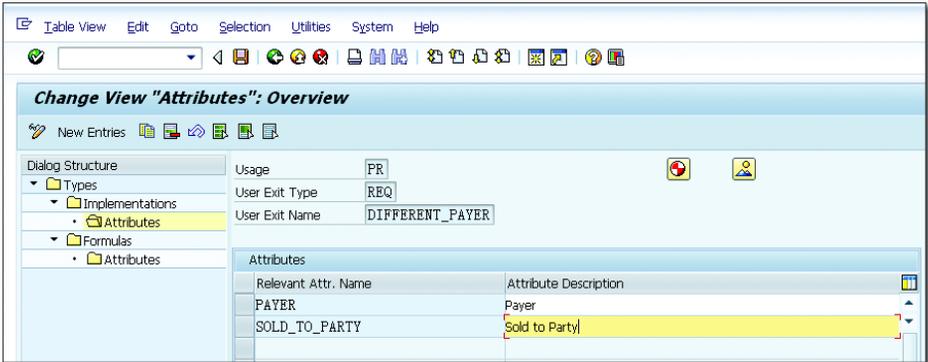


Figure 2.54 User Exit Attributes

Assign Implementations to Formula

After defining the implementation for the user exit type, the next step is to assign the formula. Customer formulas extend from 600 to 999. The number is the same as what is being assigned in the pricing procedure. Each of the user exit types must have a formula number assigned to it as shown in Figure 2.55.

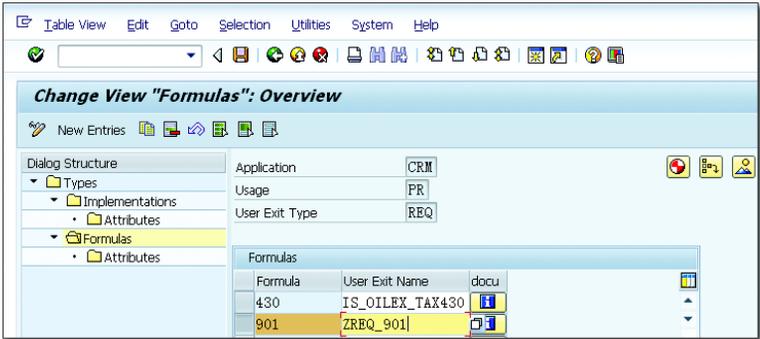


Figure 2.55 Formulas Assigned to the User Exit

Attributes Assigned

Figure 2.56 shows INCO_TERMS1 as one of the attributes assigned that is used to determine the price for the condition type.

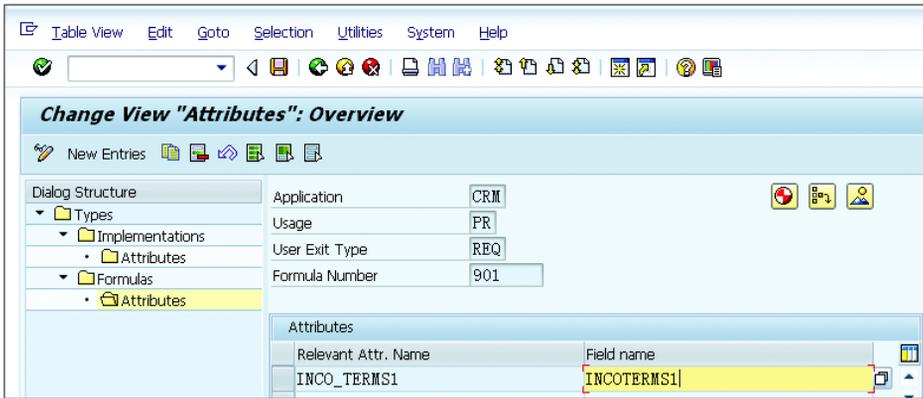


Figure 2.56 Attributes Assigned to the Formula

After going through all the configuration steps, it's necessary to reset the VMC (Transaction SM53) and run the IPC buffer program IPC_DET_CLEAR_CUST_BUFFER to implement your changes.

Table SMOFPARSFA

In SAP CRM, with table SMOFPARSFA you can control the pricing redetermination in SAP ERP for SAP CRM orders by adding the entry for PRICINGTYPE with the pricing indicator (e.g., the PRICING INDICATOR "G" is set for reprising tax in SAP ERP).

Verify Routines

You can verify routines in SAP CRM that are loaded via program /SAPCND/UE_DEV. Access Transaction VMCJDB, and double-click on DBSOURCES as highlighted in Figure 2.57.

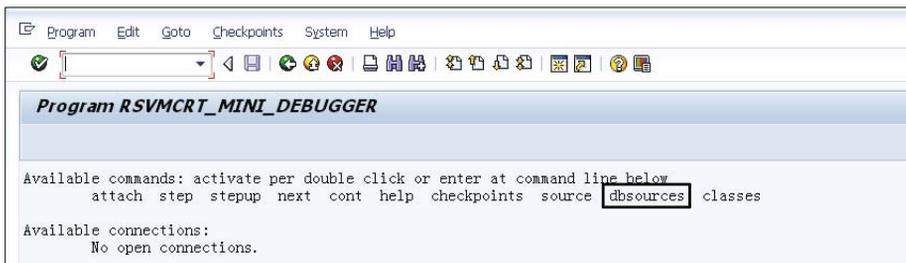


Figure 2.57 VM Container Mini Debugger

You'll see the list of the routines you've uploaded to the SAP CRM system under the list of Java source files located in the database. Double-click on one of the routines to view the Java source file.

You can also activate the user exit logger that can be viewed in Transaction SM53 under LOG ADMINISTRATION • DISPLAY LOG.

2.5 Vendors

Vendors are created in SAP ERP and can be loaded to SAP CRM based on your business requirements. Common examples of vendors are forwarding agents, third-party vendors where the products are sourced out of a vendor warehouse, and products that aren't stock items.

In typical SAP CRM sales order scenarios, a customer service representative might need vendor information for a third-party sales order. In such a situation, it becomes imperative to determine the correct vendor on an SAP CRM sales order. For vendor determination, you need to load vendors into the SAP CRM system. In SAP CRM, these vendors are created business partners in role BBP000 Vendor when downloaded from SAP ERP.

To download vendors from SAP ERP to SAP CRM, some prerequisite steps are required. You perform the first prerequisite steps in SAP CRM as follows:

1. Activate the `VEND_MWX_CREATE_MAIN_BDOC` function in Transaction SM31 and table `CRMC_BUT_CALL_FU` for the business partner outbound of the business partner objects.
2. Activate the adapter objects `VEND_MAIN` and `VENDOR_MAIN` in Transaction R3AC1. In Transaction R3AC1, the adapter objects `VEND_MAIN` and `VENDOR_MAIN` must be active. A filter for each role of role category vendor must be set for object `VEND_MAIN`.
3. Create a subscription for vendors in Transaction SMOEAC. In Transaction SMOEAC (Admin Console), there will be a subscription for publishing ALL VENDORS to the SAP ERP system (site). For example, you specify "ALL VENDORS" as the subscription's NAME (see [Figure 2.58](#)).

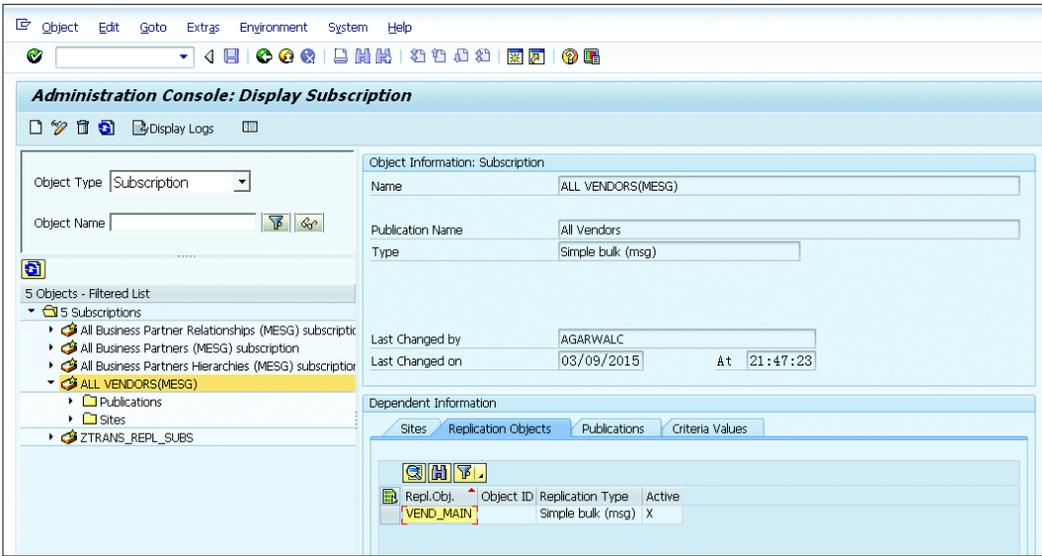


Figure 2.58 Vendor Subscription in Transaction SMOEAC

4. Create a business partner grouping for vendors. Ensure that it's an external grouping and that the number range is the same as in SAP ERP (see [Figure 2.59](#)).

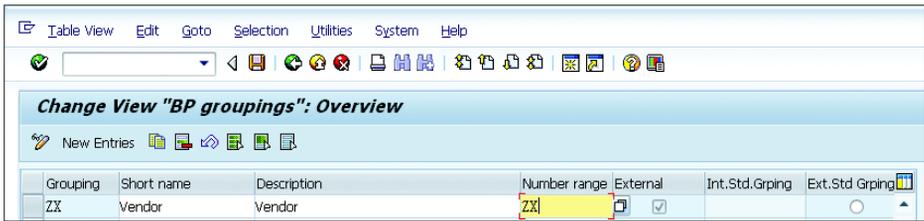


Figure 2.59 Vendor Business Partner Grouping

After you've completed the prerequisite steps for the SAP CRM system, it's time to tackle the SAP ERP system:

1. Activate PI_BP_PROXY_BAPI_VENDOR. Within Transaction SM31, the table COM_BUPA_CALL_FU for SAP ERP (R/3) object inbound processing (time R3OBI) of vendor records (object VEND), the function PI_BP_PROXY_BAPI_VENDOR must be active. The function PI_BP_PROXY_BAPI_CUST_VEND must not be active.

2. Adjust the settings for table CRMSUBTAB. In Transaction SM31, table CRMSUBTAB for user CRM and function COM_VEND_MAIN_INBOUND must be activated for the object VEND_MAIN of class BUPA for upload. Function PI_BP_VENDOR_MAIN_EXTRACT should be activated for object VENDOR_MAIN of class VEND for download.
3. Adjust the settings for table PIDV. In Transaction PIDV, maintain the mapping between the SAP CRM role categories for vendors (usually ROLE CAT. BBP000) and the corresponding SAP ERP account GROUP, as shown in [Figure 2.60](#) and [Figure 2.61](#).



Figure 2.60 Assignment of Account Group to Business Partner Role Category

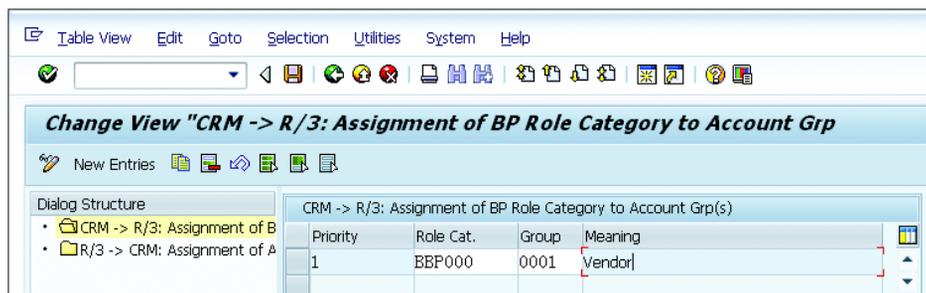


Figure 2.61 Assignment of Business Partner Role Category to Account Group

After all of these prerequisite activities, vendors are downloaded using Transaction R3AS in SAP CRM (see [Figure 2.62](#)).

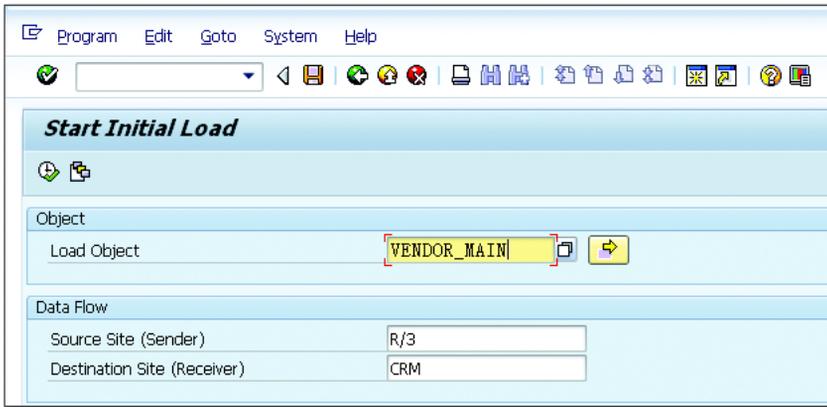


Figure 2.62 Vendor Initial Load via Transaction R3AS

By default, Business Documents (BDocs) of type VENDOR_MAIN are sent in the SAP CRM system for all SAP CRM business partners as soon as you activate the distribution function in table CRM_BUT_CALL_FU for VENDOR_MWX_CREATE_MAIN_BDOC. This is a mandatory step to load the vendors into SAP CRM.

2.6 Summary

In this chapter, we've gone through each of the master data aspects for organization models, business partners, products, pricing, vendors, and plants. You've learned how to set up the master data and configure the system to replicate the data from an SAP ERP system to an SAP CRM system.

Organization data, business partners, and products form the basis of all business transactions. If this data has any issues, the downstream impact will be significant. This chapter provided the required information to minimize and reduce risk related to master data and explained the details regarding setup.

In the next chapter we will look at the various SAP CRM data exchange scenarios and system setup steps.

In this chapter, we'll discuss the system setup and middleware steps required to make the SAP CRM system compatible with different processes.

3 SAP CRM Middleware

For any organization to work effectively and without any resource overheads, it's imperative to understand the integration points in SAP CRM and how data flows between SAP CRM and other systems. If the master data replication and the data quality in the SAP CRM system are in question, then the whole business model of an organization is at risk. Therefore, understanding SAP CRM middleware and its functions, including the settings that should be performed, is critical to ensure that data integrity is maintained and that data replication has no issues between other systems and SAP CRM.

In this chapter, we'll look at SAP CRM middleware functions and settings within SAP CRM. In addition, we'll also look at the middleware data exchange between SAP CRM and SAP ERP, before diving into the system setup/middleware setup steps to be undertaken.

3.1 Role and Function

SAP CRM Marketing, Sales, and Service applications include channel partners, the Interaction Center (IC), and E-Commerce to help organizations interact with their customers. To ensure that these core areas and applications can effectively communicate with one another, middleware must be in place to execute quality data flow.

Figure 3.1 shows an overview of the SAP CRM applications and backend connections. Here we see the different applications (i.e., telephony, Internet, SAP CRM mobile client, WebClient UI) that log transactions within SAP CRM based on communications with customers. As transactions are entered in the SAP CRM system,

other backend systems play a vital role in getting the required information to SAP CRM. These systems include SAP ERP, SAP Business Warehouse (SAP BW), and SAP Advanced Planning and Organization (SAP APO). [Figure 3.1](#) shows the typical system landscape setup where companies use SAP CRM as their order entry tool with other SAP CRM functionalities.

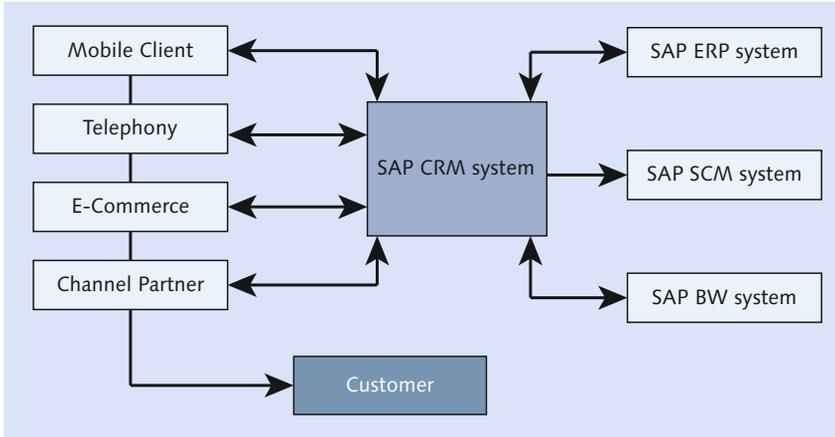


Figure 3.1 SAP CRM Overview with Applications and Backend Connections

The following are some of the applications where SAP CRM middleware plays a vital role:

► **Mobile client**

SAP CRM middleware is used to replicate master data and transactions to the SAP CRM mobile client. This information replicated on the mobile server is then harnessed by users to access data and perform business functions.

► **IC (Telephony)**

The data for telephony applications reside in the IC. The master data can be locally created or replicated from the SAP ERP backend.

► **E-Commerce**

Products and product catalogs are replicated from the SAP ERP backend and are then used by the E-Commerce applications in B2B scenarios. The transactions created from the E-Commerce application are then replicated back to SAP ERP.

All of the data replication is performed by SAP ERP adapters placed in the SAP CRM system with the plug-in installed in the SAP ERP system when the data replication is performed.

In the next section, we'll provide a high-level overview of the data exchange between SAP CRM and SAP ERP.

3.2 Data Exchange with SAP ERP

Before we look at the system setup, it's important to understand the data exchange between SAP CRM and the SAP ERP backend. Many transactions and communications between SAP CRM applications involve the integration of data flow between SAP CRM and SAP ERP, where the client of record for the master data is SAP ERP. This includes the initial data load and the delta load. SAP CRM middleware helps to achieve this flow with certain configurations and customization options. These will be discussed over the course of this chapter. The Messaging BDocs (mBDocs) are generated in SAP CRM when the data flow occurs from SAP ERP to SAP CRM.

The SAP CRM server contains middleware that handles the data exchange with internal applications and external major components, such as an SAP ERP backend, SAP BW, or non-SAP systems. SAP CRM middleware also synchronizes the databases of mobile clients with the SAP CRM database. The SAP CRM server is built on the SAP NetWeaver Application Server.

As shown in [Figure 3.2](#), in the SAP CRM server, business objects are replicated to an external system when the relevant adapter, such as the SAP ERP (R/3) adapter, external interface (XIF) adapter, SAP CRM mobile client adapter, and SAP BW adapter, is called, and the outbound queues are generated to send the data to an external system.

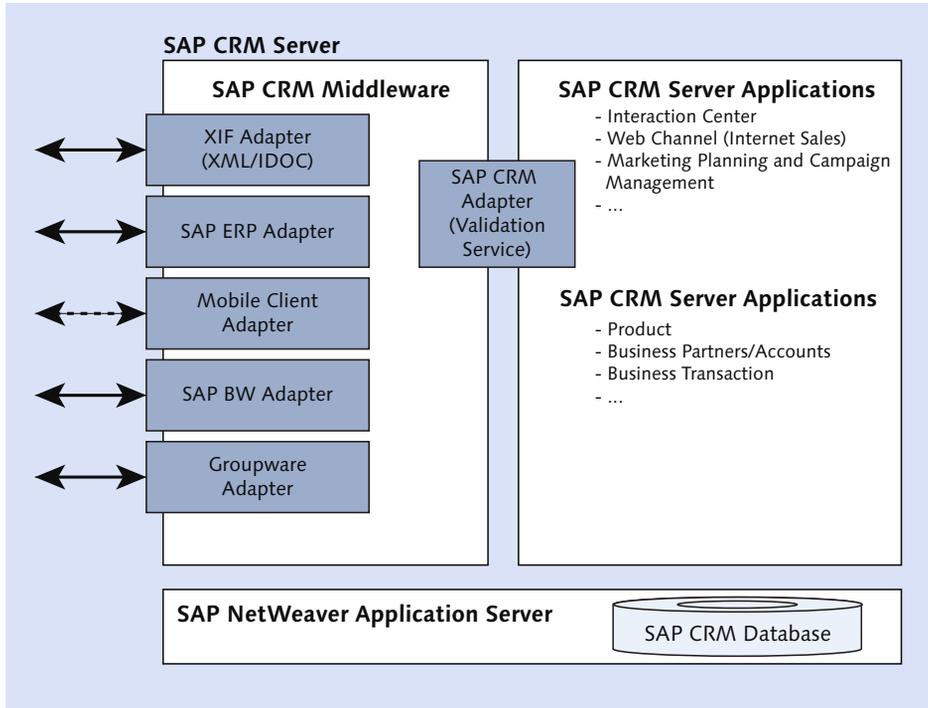


Figure 3.2 SAP CRM Server

Figure 3.3 shows a high-level representation of the message flow in SAP CRM. The message flow for the SAP ERP system and the definitions around some of the basic conventions on the data flow are as follows:

1 Inbound processing

Inbound processing refers to the data coming into SAP CRM, which is read from the external system format and converted into the mBDoc that SAP CRM understands. For example, the Business Application Programming Interface (BAPI) structures from SAP ERP, IDocs from the external system, and synchronization BDoc (sBDoc) messages from the mobile client are all converted into mBDocs.

2 Validation

As soon as the inbound adapter is called, the message flow triggers within SAP CRM when the data is processed. The data coming to the SAP CRM system needs validation and checks certain rules to make sure the quality of the data is accurate and the integrity is maintained. For this reason, the validation occurs

in the SAP CRM system while the inbound queue is processed. The mBDoc may either result in an error or be processed successfully based on the validation check on the inbound message. If the error occurs, the details of the error message can be seen via Transaction SMW01 in SAP CRM.

③ Outbound processing

In simple terms, outbound processing is the exact opposite with regards to the data flow within inbound processing. The data from SAP CRM in the form of an mBDoc is sent via outbound adapters that are converted to the external system format so that the mBDoc can be posted in the external system, which may be SAP ERP or any other external system.

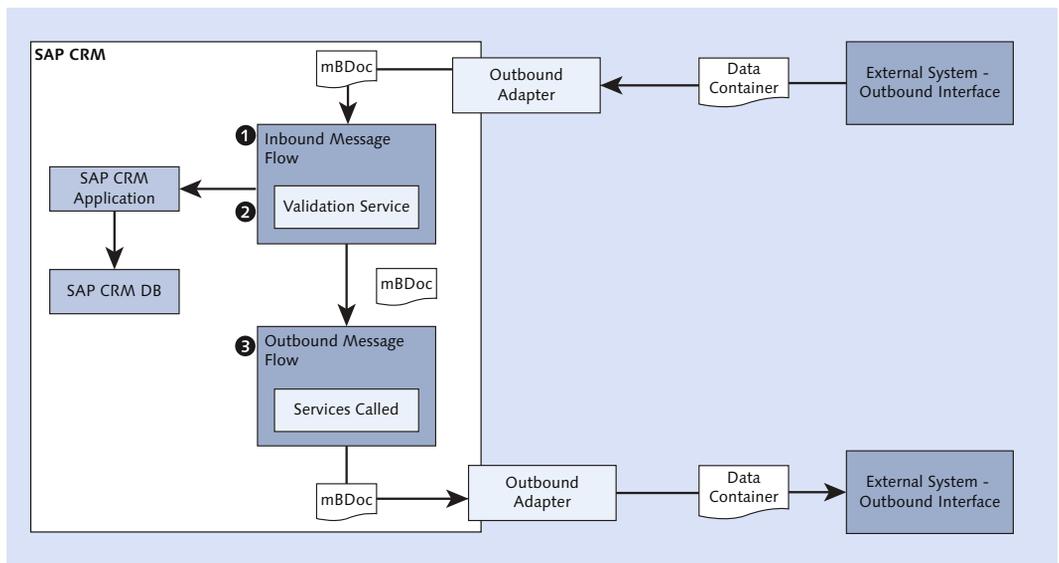


Figure 3.3 Message Flow for the SAP ERP Backend

In the following sections, we'll look at the data flow process between SAP CRM and the SAP ERP backend. To begin, we'll look at the different adapter object types, and then dive into the download and upload process between SAP CRM and SAP ERP. Finally, we'll look at the data request process.

3.2.1 Adapter Object Types

There are three types of adapter objects in SAP CRM: customizing objects, business objects, and condition objects. Each of these adapter objects needs to be in

place and correctly configured per your business needs. You can place filters in the adapter objects to restrict certain data flow based on your requirements. The following sections look at these three adapter objects in closer detail.

Customizing Objects Exchange

The *customizing objects* exchange data to confirm that the customizing tables in SAP ERP and SAP CRM are being properly synced without any inconsistencies in these table entries. This is a basis for master data replication because the validation services are called when the data flow occurs. Therefore, it's imperative to run the customizing load before moving any master data objects from SAP ERP to SAP CRM. The customizing data is transferred to the SAP CRM system via Queued Remote Function Calls (qRFC).

Business Objects Exchange

Business partner master data, product master data, and other master data within SAP ERP are transferred with business objects. The adapter object names for customer and material are CUSTOMER_MAIN and MATERIAL, respectively. They also use mBDocs to move data between SAP ERP and SAP CRM.

Let's look at the CUSTOMER_MAIN adapter object in detail. You can access the master adapter objects via Transaction R3AC1. As shown in [Figure 3.4](#), the OBJECT NAME is CUSTOMER_MAIN, and the LINKED BDoc is BUPA_MAIN. The BLOCK SIZE shows the number of records that you can download in one data set.

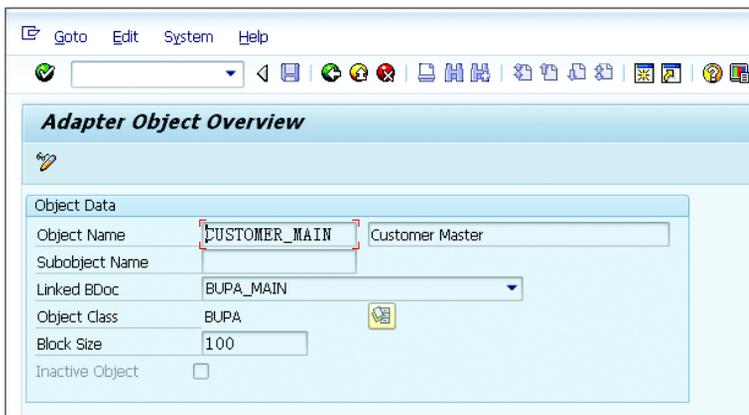


Figure 3.4 CUSTOMER_MAIN Adapter Object

On the ADAPTER OBJECT OVERVIEW screen, the following tabs are found:

► INITIAL FLOW CONTEXTS

This shows the SOURCE SITE TYPE (i.e., R/3) and the TARGET SITE TYPE (i.e., CRM). This means the data will flow from the SAP ERP system to the SAP CRM system. FLOW CONTEXT also shows MBDoc VALIDATE, which is nothing but the message inbound flow. The details on the messaging flow context for each of the adapter objects can be viewed by accessing Transaction SMO8FD (see [Figure 3.5](#)).

Source Site Type	Target Site Type	Consumer	Flow Context	Inactive
R/3	CRM	CRM	mBDoc Validate	<input type="checkbox"/>
				<input type="checkbox"/>

Figure 3.5 Initial Flow Contexts Tab

► TABLES/STRUCTURES WITHIN OBJECT

This shows the list of tables from the source system (i.e., SAP ERP system). The data from these tables in SAP ERP will be extracted and transferred to the SAP CRM system (see [Figure 3.6](#)).

Table Name (Source Site)	No Mapping of Source Table	Mapped Table/Structure (...)	Inactive
KNA1	<input type="checkbox"/>		<input type="checkbox"/>
KNAS	<input type="checkbox"/>		<input type="checkbox"/>
KNEK	<input type="checkbox"/>		<input type="checkbox"/>
KNVA	<input type="checkbox"/>		<input type="checkbox"/>
KNVI	<input type="checkbox"/>		<input type="checkbox"/>
KNVK	<input type="checkbox"/>		<input type="checkbox"/>
KNVP	<input type="checkbox"/>		<input type="checkbox"/>
KNVV	<input type="checkbox"/>		<input type="checkbox"/>

Figure 3.6 Tables/Structures Within Object Tab

Table SMOFTABLES

You can search the customizing object to load from SAP ERP to SAP CRM from table SMOFTABLES by entering the SAP ERP table in the MAIN TABLE field. It will show you the list of the customizing objects to load for that table in the SAP CRM system.

► FILTER SETTINGS

You can set the filter to allow the data that you want to bring into the SAP CRM system. For example, you might want to load the business partner with division 17 as shown in [Figure 3.7](#). Only these customers with division 17 will be loaded to SAP CRM.

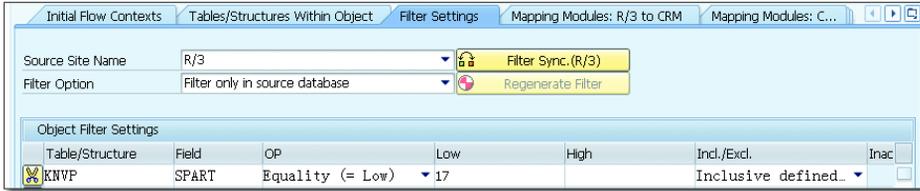


Figure 3.7 Filter Settings Tab

Table SMOFFILFLD

If required, you can add more table and field filters apart from the ones provided by SAP via table SMOFFILFLD for a specific adapter object.

► MAPPING MODULES R/3 TO CRM

Mapping module converts the BAPIMTCS structure into the mBDoc. This is a function module assigned to the adapter object (see [Figure 3.8](#)).

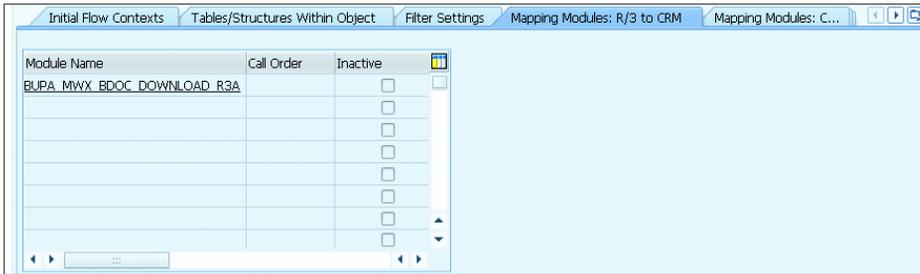


Figure 3.8 Mapping Modules: R/3 to CRM Tab

Condition Objects Exchange

Condition objects are used to load the pricing data, product determination condition record data, free goods condition record data, campaign determination condition records data, rebate condition record data, and so on from SAP ERP into SAP CRM.

Adapter Object Transaction Codes

The following transaction codes can be used to load the adapter objects:

- ▶ Transaction R3AC1: Business Objects Exchange
- ▶ Transaction R3AC3: Customizing Objects Exchange
- ▶ Transaction R3AC5: Condition Objects Exchange

The objects are stored in table `SMOFOBJECT`.

3.2.2 Download from SAP ERP to SAP CRM

In this section, we'll describe how the flow of data occurs from SAP ERP to SAP CRM, including the overall flow logic. In most business scenarios, SAP CRM is connected to the SAP ERP system with SAP ERP as the client of record. Therefore, the master data creation and change will occur only in SAP ERP. From a logic perspective, whether we consider the master data flow or transactional data flow, the path in both data flows is the same, meaning the concept doesn't differ.

The following sections look at the different types of data transfers between SAP ERP and SAP CRM.

Initial Data Transfer

When you execute any adapter object from SAP CRM to SAP ERP for the first time, the load is referred to as an initial data transfer. As soon as you perform any initial load for customer, material, or condition objects, the object class activation occurs in SAP CRM. This means that the Business Transaction Event (BTE) by object class is activated in SAP CRM. This activates the delta replication of the business objects.

You can see this in SAP CRM under `ARCHITECTURE AND TECHNOLOGY • DATA EXCHANGE • DELTA LOAD • SET UP DELTA LOAD`. This will take you to the screen shown in [Figure 3.9](#). BTEs are automatically created when the initial load is performed for the business object (see [Figure 3.10](#)).

Now, let's discuss the details around the initial load from SAP ERP to SAP CRM. [Figure 3.11](#) shows a representation of the data flow from SAP ERP to SAP CRM.

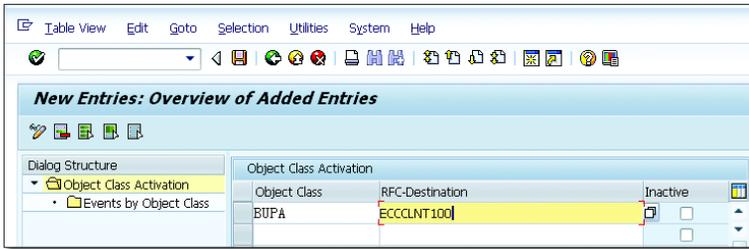


Figure 3.9 Object Class Activation for Delta Load

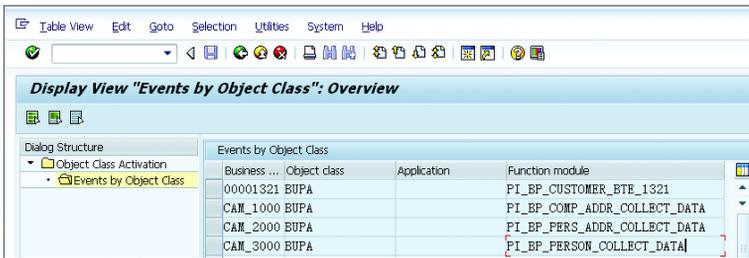


Figure 3.10 Events by Objects Class

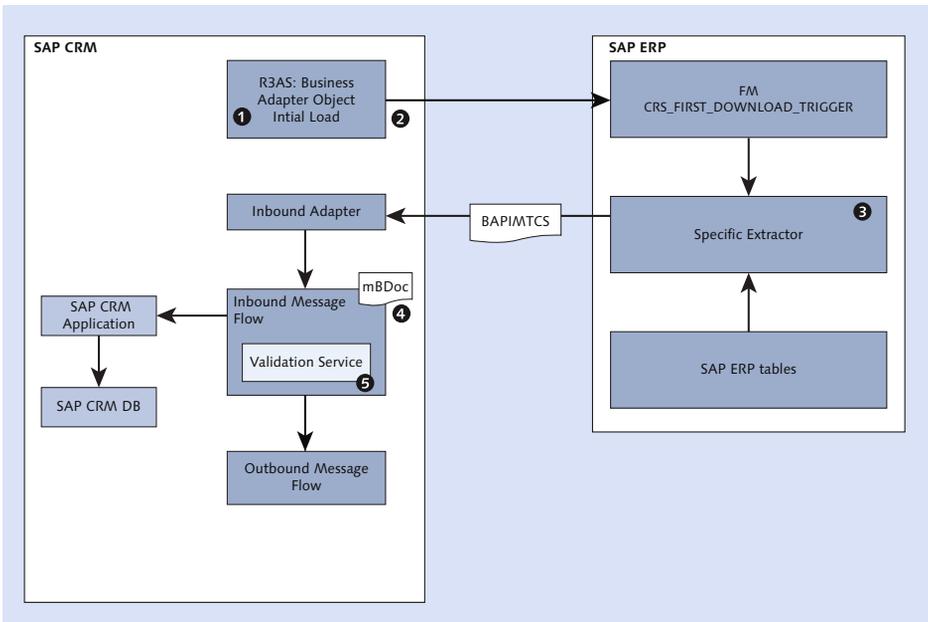


Figure 3.11 Initial Load from SAP CRM

The following describes the steps in the data flow shown in [Figure 3.11](#):

- ❶ Start the initial load for the business adapter object (e.g. CUSTOMER_MAIN) in SAP CRM via Transaction R3AS. You need to enter the OBJECT NAME and the SOURCE/DESTINATION SITE to trigger the call to SAP ERP.
- ❷ The RFC is triggered to the SAP ERP system, which results in queuing up the RFCs to the SAP ERP system. As soon the call connects with SAP ERP, the download of the customer master data triggers from SAP ERP to SAP CRM. As you can see in [Figure 3.11](#), the function module CRS_FIRST_DOWNLOAD_TRIGGER triggers the download in the SAP ERP system.
- ❸ The extractor function module is called within the SAP ERP system when the download triggers to extract the data from the SAP ERP database. The function module resides in table CRMSUBTAB in SAP ERP for every SAP CRM adapter object. This function module also reads the filters in the adapter object that is being called from SAP CRM. After the data is extracted, the same function module creates the BAPIMTCs data container and sends it to the SAP CRM server. The data is sent to the SAP CRM system via RFC.

[Figure 3.12](#) shows the mapping of the table entry for CUSTOMER_MAIN with the extraction function module.

The screenshot shows the 'Display View' for the 'Subscription Table for Upload and Download Objects'. The form contains the following fields and values:

User	CRM
Objectn.Downl.	CUSTOMER_MAIN
Up- or Download	Download
Obj. Class	BUPA
Function	PI_BP_CUSTOMER_MAIN_EXTRACT
Object Type	

Below the main form, there is a section titled 'Subscription Table for Upload and Download Objects' containing:

Function Module	PI_BP_CUSTOMER_MAIN_EXTRACT
<input type="checkbox"/> Inactive	

Figure 3.12 Table CRMSUBTAB – Subscription Table for Upload and Download Objects

- 4 As soon as the data container comes to SAP CRM, the SAP ERP inbound adapter is called, which consists of the mapping function module. This mapping function module converts the BAPIMTCS data container to the mBDoc, and it's passed to the inbound message flow.
- 5 The inbound message flow triggers the validation service. As a part of the standard adapter object, CUSTOMER_MAIN is assigned with the MIO – mBDoc VALIDATE. The customer master load undergoes the validation; you can view the validate service function module via Transaction SMO8FD, as shown in [Figure 3.13](#).

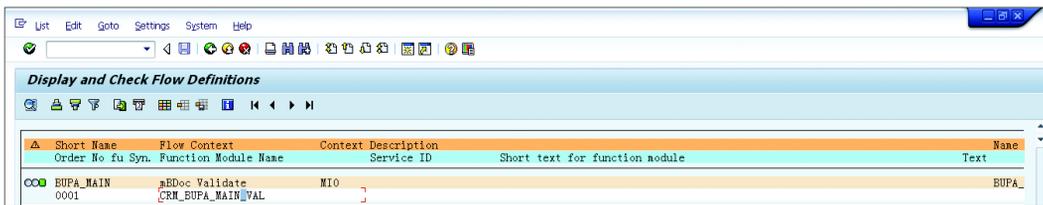


Figure 3.13 Display and Check Flow Definitions Screen

After the validation is successful, the data is posted to SAP CRM database. This also updates the BDoc message in Transaction SMW01 with a successful generation flag.

Transactions SMQ1 (Outbound Queue) and SMQ2 (Inbound Queue) are used for checking the data flow between SAP ERP and SAP CRM.

Queues

You have to register the queues in the inbound and outbound of SAP ERP and SAP CRM systems for the data flow to happen successfully. The settings are maintained via Transaction SMQR (Inbound Scheduler) and SMQS (Outbound Scheduler).

Delta Data Transfer

A delta data transfer comes into play for any changes that happen after the initial data transfer to the master data within SAP ERP to SAP CRM via SAP CRM middleware. The BTEs enable the delta data transfer after the initial data transfer is completed. As stated in the previous section, after you load the data the first time,

the BTE is activated for the business objects. Therefore, the changes in the SAP ERP system are immediately updated to the SAP CRM system.

Figure 3.14 shows the BTE from SAP ERP for the customer business object. This can be viewed in SAP ERP via Transaction FIBF • SETTINGS • P/S MODULES • OF AN SAP APPLICATION.

The screenshot shows the SAP ERP interface for transaction FIBF, specifically the 'Publish & Subscribe BTE: SAP Enhancement' overview. The table below lists the configured BTEs:

Event	Ctr	Appl.	Function Module
00001320	IN	CIN	J_1IKUNNR_SAVE_00001320
00001321			CMD_CUSTOMER_BTE_1321_IMPL
00001321		BC-MID	PI_BP_CUSTOMER_BTE_1321

Figure 3.14 Publish and Subscribe Business Transaction Events (1)

These BTEs for customer master data are also activated in the SAP CRM system when the initial data load is executed from SAP ERP to SAP CRM (see Figure 3.15).

The screenshot shows the SAP ERP interface for transaction FIBF, specifically the 'Publish & Subscribe BTE: SAP Enhancement' overview. The table below lists the configured BTEs for customer master data:

Event	Ctr	Appl.	Function Module
CAM_1000		BC-MID	PI_BP_COMP_ADDR_COLLECT_DATA
CAM_1000		ND-APO	NDPLG_APO_001_CAM_1000_ADR
CAM_2000		BC-MID	PI_BP_PERS_ADDR_COLLECT_DATA
CAM_3000		BC-MID	PI_BP_PERSON_COLLECT_DATA

Figure 3.15 Publish and Subscribe Business Transaction Events (2)

Figure 3.16 shows a representation of the delta data transfer from SAP ERP to SAP CRM.

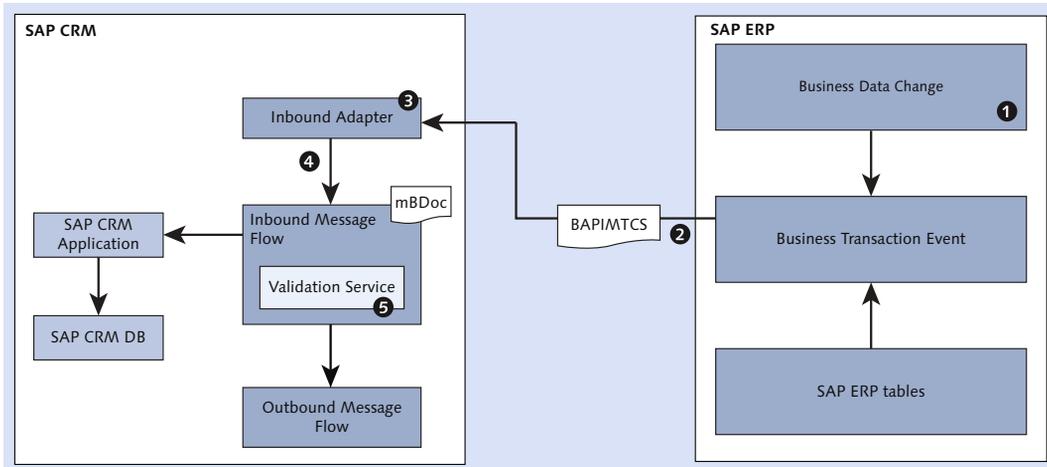


Figure 3.16 Data Delta Changes Flow from SAP ERP to SAP CRM

The following describes the steps for the delta data flow from SAP ERP to SAP CRM (see [Figure 3.16](#)):

- ❶ You make a change in the business partner in SAP ERP. The business partner changes trigger the BTE. In this case, it will trigger the 1321 business transaction event for the customer changes in SAP ERP.
- ❷ After the BTE is triggered, the function module assigned to the event extracts the data from SAP ERP tables and also filters out the data that isn't required based on the filter settings in the CUSTOMER_MAIN adapter object in SAP CRM. The extracted data is converted into BAPI/MTCS structures and is then queued up in the outbound queue of the SAP ERP system.

Queue Name

The queue name for the initial load is R3AI*, whereas the queue name for the delta load is R3AD*.

- ❸ The SAP ERP inbound adapter is called when the inbound queue is generated in the SAP CRM system for the data flow to SAP ERP.
- ❹ The SAP ERP adapter object converts the data from the BAPI/MTCS structure into mBDoc format, which calls the inbound message services.

- ⑤ When the inbound messaging service is called, the validation services are invoked. The validation services validate the data that flows from SAP ERP to SAP CRM based on the rules within these services. If any of the customer master configuration is incomplete, for example, it will process the mBDoc with an error message, which can be viewed in Transaction SMW01. You can see the validation services for each adapter object in table SMW3BDOCIF. For BUPA_MAIN, the validation service is CRM_BUPA_MAIN_VAL.

Table CRMRFPCPAR

You can also control the data flow from SAP ERP to SAP CRM from table CRMRFPCPAR in the SAP ERP system. For example, if you want to discard any delta data flow of any business object, you can maintain the entry in this table to stop the changes from SAP ERP to SAP CRM. This applies to both initial and delta data flows.

3.2.3 Upload from SAP CRM to SAP ERP

You can upload data from SAP CRM to SAP ERP similarly to how data replicates from SAP ERP to SAP CRM. This includes master and transactional data. There are two types of loads involved here: the initial load and the delta load. In this section, we'll walk through the step-by-step procedure for how these loads perform when moving the data from SAP CRM to SAP ERP.

Figure 3.17 shows a high-level representation of the outbound message flow from the SAP CRM database to the SAP ERP outbound adapter. The data flow from SAP CRM triggers the SAP CRM adapter to call the outbound message flow. The outbound message flow kicks in the validation services before the data moves to the SAP ERP outbound adapter. Validation services are flow contexts that have multiple services assigned. The services perform validation on the data and determine the site type regarding which system this data flows to.

As an exception to the master data, conditions are only loaded from the SAP ERP system to the SAP CRM system. Sales orders are considered to be a delta load only, and determination of the delta load is done via Transaction SMOEAC. Transaction SMOEAC is an administration console where you subscribe the replication object to flow from SAP CRM to SAP ERP.

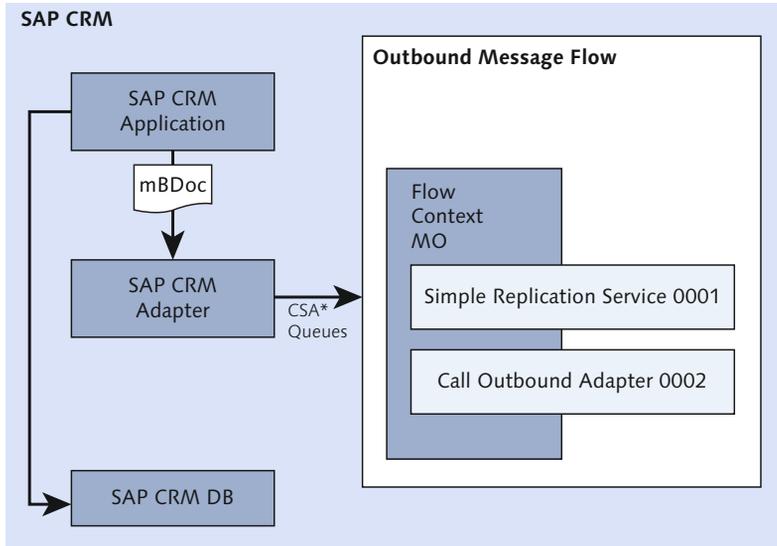


Figure 3.17 SAP CRM Outbound Message Flow

Before we go through the data flow logic from SAP CRM to SAP ERP, it's important to understand the SAP CRM adapter object, which is similar to the SAP ERP (R/3) adapter object. The structure and transaction code to access the adapter object are the same, but certain settings on the SAP CRM adapter object differ from the SAP ERP adapter object. After we've gone through the adapter object, we'll better understand concepts around the settings for creating sites and subscriptions in SAP CRM.

Consider an example using the BUPA_MAIN adapter object, as shown in [Figure 3.18](#). Any changes or new customers created in SAP CRM trigger the BUPA_MAIN object to replicate the changes from SAP CRM to the SAP ERP system. Here, the OBJECT NAME is BUPA_MAIN.

As shown in [Figure 3.18](#), the following are some of the tabs and fields that can be found on the ADAPTER OBJECT OVERVIEW screen:

► INITIAL FLOW CONTEXTS

This tab shows the SOURCE SITE TYPE and the TARGET SITE TYPE. Here, the source site is SAP CRM, and the target site is SAP ERP, as the data replication is from SAP CRM to SAP ERP. Additionally, you'll see the FLOW CONTEXT field shows

MO4 mBDOC DIRECT SEND instead of MI0 – Message Inbound mBDoc. (MO stands for messaging flow outbound.)

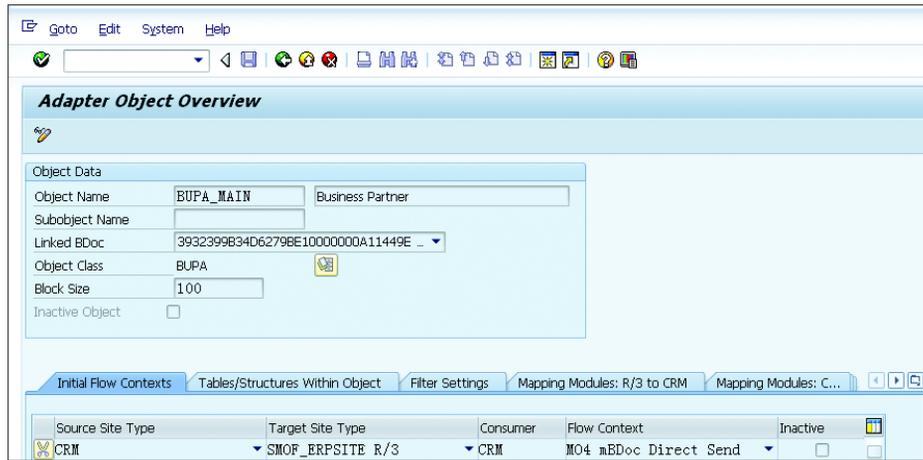


Figure 3.18 Adapter Object BUPA_MAIN

► MAPPING MODULES: CRM TO R/3

The mapping module converts the mBDoc into the BAPIMTCS structure. This is a function module assigned to the adapter object (see [Figure 3.19](#)).

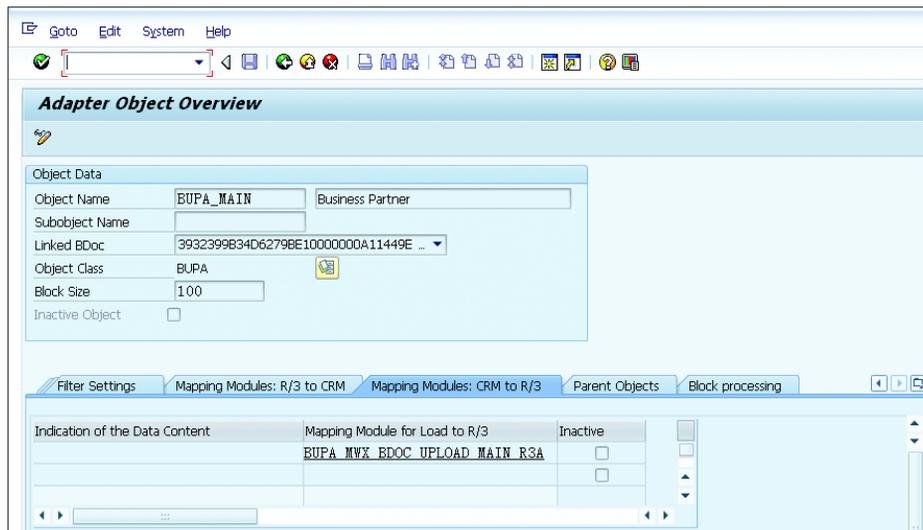


Figure 3.19 Mapping Module: SAP CRM to R/3

Figure 3.20 shows how the SAP CRM adapter object is connected to the site. This flow will help you understand how objects are connected and flow through the sequence of steps to subscribe any data objects from SAP CRM to SAP ERP. Apart from subscription and site, SAP provides you with the adapter object, replication object, and publication. Based on the customer's requirement, you can create the subscription and site.

Figure 3.20 shows that the adapter object is connected to the BDoc type and the BDoc is assigned to the replication object. When creating the publication, you assign the replication object to the publication. Finally, you create the subscription and assign this publication to the subscription that has the sites assigned to it.

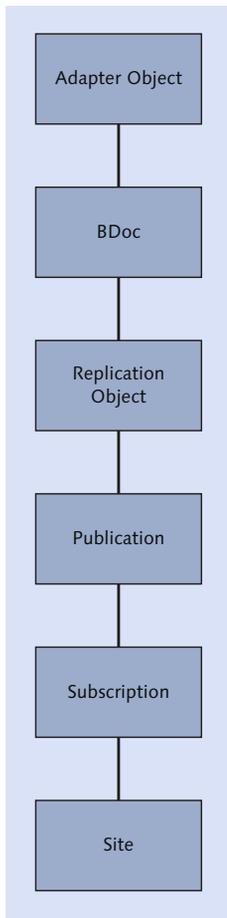


Figure 3.20 Site Connection to the SAP CRM Adapter Object

The objects shown are described here:

► SITE

Sites are the destinations where you want the data to flow from the SAP CRM system to the external systems. For example, you want the data replication being activated from SAP CRM to SAP ERP; in that case, you'll create a SITE for R/3, as shown in [Figure 3.21](#). To create sites, use Transaction SMOEAC (Administration Console).

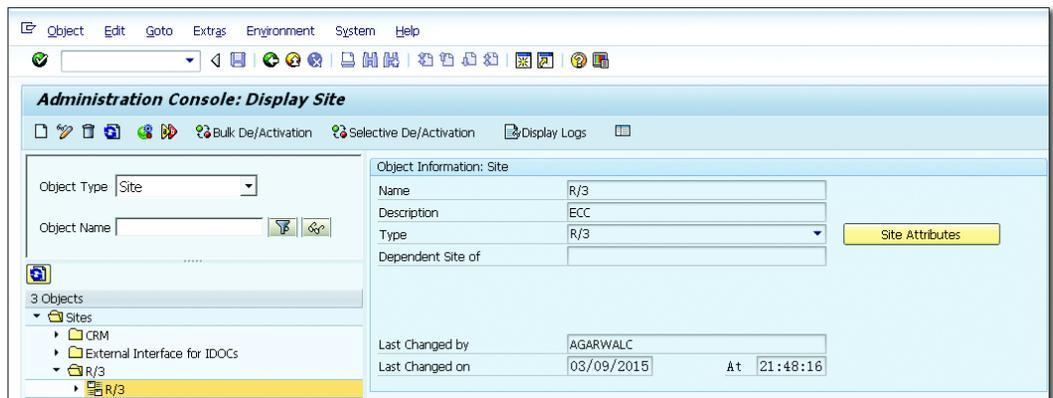


Figure 3.21 Create Sites – R/3

► SUBSCRIPTION

After the site is created, you create the subscription for the publication. Sites and subscriptions are usually created based on the requirements regarding what replication object to subscribe. For example, if the business requirement is to replicate the customers from SAP CRM to SAP ERP, then you'll create the subscription for BUPA_MAIN and assign the site to your subscription. [Figure 3.22](#) shows the SUBSCRIPTION assigned with the R/3 site. You can also assign the CRITERIA VALUES where you can state which business partner you want to replicate from SAP CRM to SAP ERP.

► REPLICATION OBJECTS

Replication objects are the objects you want to replicate from SAP CRM to SAP ERP, for example, BUPA_MAIN as shown in [Figure 3.23](#). Multiple replication objects can be assigned to the publication.

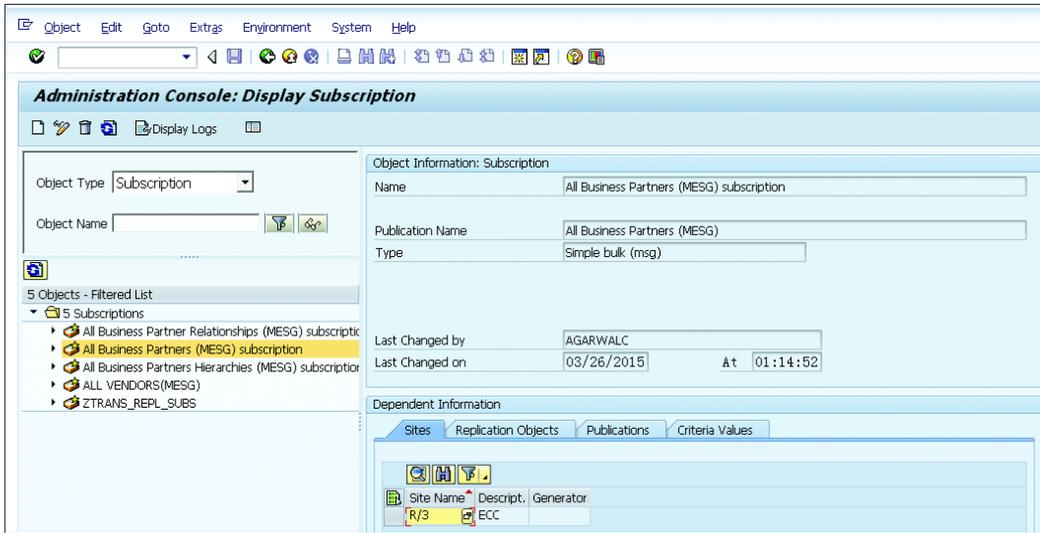


Figure 3.22 Subscription: Business Partner

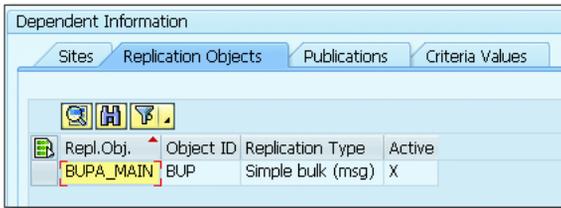


Figure 3.23 Replication Objects – BUPA_MAIN

► PUBLICATIONS

Publications are assigned to the subscriptions and are used to publish replication objects to the specific sites. In this case, you want to publish the business partner object to a subscription that is directed to the SAP ERP (R/3) site. You can assign multiple replication objects to the publication (see [Figure 3.24](#)). There are two types of publications:

- SIMPLE BULK (MSG): The messages are replicated if the sites are mentioned, which means there isn't any selection criteria to restrict any message flow.
- SIMPLE INTELLIGENT REPLICATION: This consist of the selection criteria to restrict the message flow, if any.

Dependent Information			
Sites	Replication Objects	Publications	Criteria Values
		Publication Name	Publication Type Active
		All Business Partners (MESG)	Simple bulk (msg) X

Figure 3.24 Publications – Business Partner

Sales Order and Business Transaction Replication

For a sales order or any business transaction to replicate from SAP CRM to SAP ERP, you need to create a subscription for the replication object BUS_TRANS_MSG. If you fail to create the subscription for BUS_TRANS_MSG, then the business transaction won't replicate from SAP CRM to SAP ERP. You'll see the successful BDoc being generated in Transaction SMOEAC in SAP CRM but no site will be assigned to the BDoc. In other words, the generated BDoc won't post to any of the sites, for example, SAP ERP (R/3).

Initial Data Load

The initial data load from SAP CRM to SAP ERP is split into two steps; one is the data extraction part within the SAP CRM system, and the other step is passing on the extracted data to the SAP ERP system (see [Figure 3.25](#)).

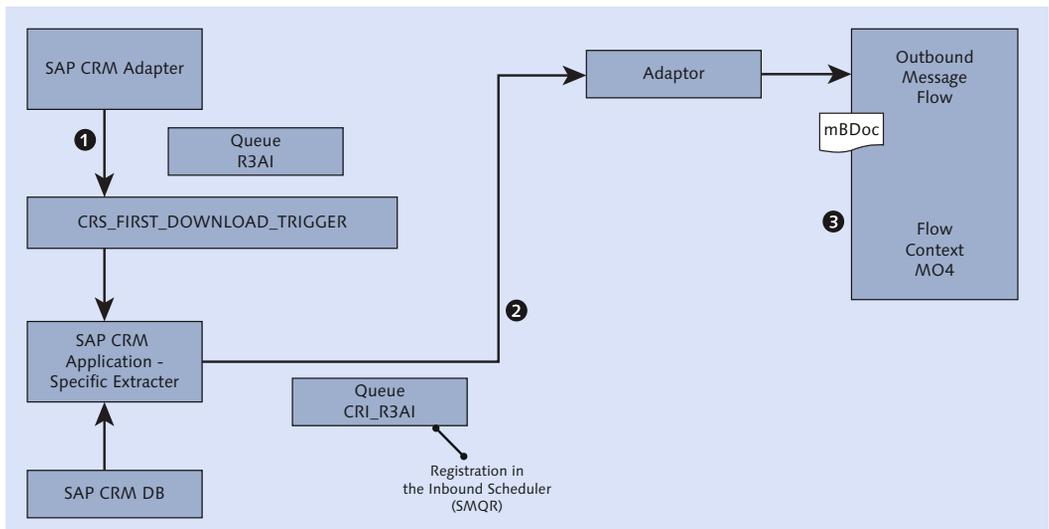


Figure 3.25 Data Extract within SAP CRM

Let's go through the flow concept as shown in [Figure 3.25](#):

- 1 Run the initial load in SAP CRM from Transaction R3AS for the business adapter object. Here, the source site will be SAP CRM, and the target site will be the SAP ERP system. The upload program triggers the FM CRS_FIRST_DOWNLOAD_TRIGGER, which then calls the business adapter object to extract the data from the SAP CRM system. The extractor function module is maintained in table CRMSUBTAB for a specific business object. [Figure 3.26](#) shows an example of BUPA_MAIN. The GUIDS are collected by the function module CRM_BUPA_MAIN_EXTRACT_GUIDS in case of BUPA_MAIN (see [Figure 3.26](#)).

The screenshot shows the SAP Table Entry screen for the table CRMSUBTAB. The title bar reads 'Table CRMSUBTAB Display'. Below the title bar, there is a 'Check Table...' button. The main area contains a form with the following fields and values:

MANDT	100
CONSUMER	EXT
OBJNAME	BUPA_MAIN
UP OR DOWN	D
OBJCLASS	BUPA
OPERATION	
OBJECTTYPE	
MOD NAME	CRM_BUPA_MAIN_EXTRACT_GUIDS
INACTIVE	<input type="checkbox"/>

Figure 3.26 Table CRMSUBTAB with BUPA_MAIN Entry

- 2 After the data is collected, the mBDocs are created and then passed on to the outbound message flow by the adapter object.
- 3 The outbound message flow triggers the flow context MO4.
- 4 As shown in [Figure 3.27](#), the flow context MO4 consists of validation services for the initial load from SAP CRM to the SAP ERP system. The concept is similar to the load from SAP ERP to SAP CRM. In this case, we see reverse logic. After the validation service validates the data extracted, this data is then passed to the SAP ERP (R/3) outbound adapter. Validation services are the function modules assigned to the flow context MO4 as shown in [Figure 3.28](#).

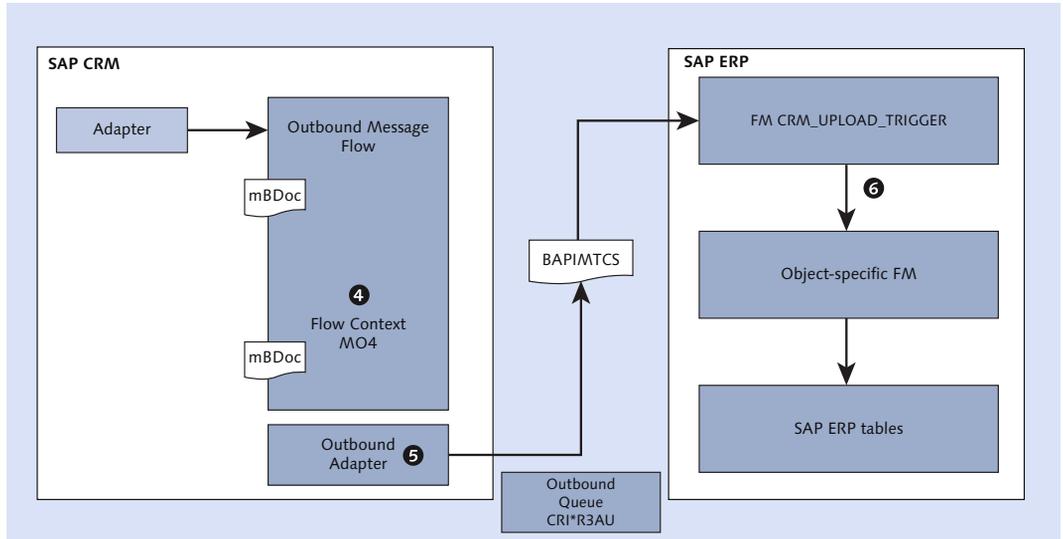


Figure 3.27 Data Flow from SAP CRM to SAP ERP

CO	BUPA_MAIN	mBDoc Direct Send	MO4		BUPA_
0001		BP_MAIN_CRM_TO_CDB		Flow service for mapping CRM to CDB	
0002		SMOH_REPLICATION_WRAPPER_MSG		Replication Wrapper for Messaging Flow	
0003		SMWS_OUTBOUNDADF_CALLADAPTERS		Flow Outbound Adapter (Dispatcher)	

Figure 3.28 Validation Service Function Module Assigned to the Flow Context MO4

- 5 The outbound adapter has the mapping function module, which converts the mBDoc messages to the BAPI/MTCS structure that triggers program CRM_UPLOAD_TRIGGER in the SAP ERP system.
- 6 Program CRM_UPLOAD_TRIGGER calls the function module for the specific object, BUPA_MAIN, to validate and write the records in SAP ERP database tables. The specific object function modules are stored in table CRMSUBTAB in the SAP ERP system. This function module also sends the confirmation back to the SAP CRM system for the records posted in the SAP ERP system.

Delta Data Load

Any changes to the data in SAP CRM trigger the delta data flow to the SAP ERP system. Sales orders created in SAP CRM are considered to be a part of the delta data flow to the SAP ERP system. The delta data flow triggers a queue named CSA* from SAP CRM to the SAP ERP system.

Figure 3.29 shows a representation of the delta data flow within SAP CRM to SAP ERP.

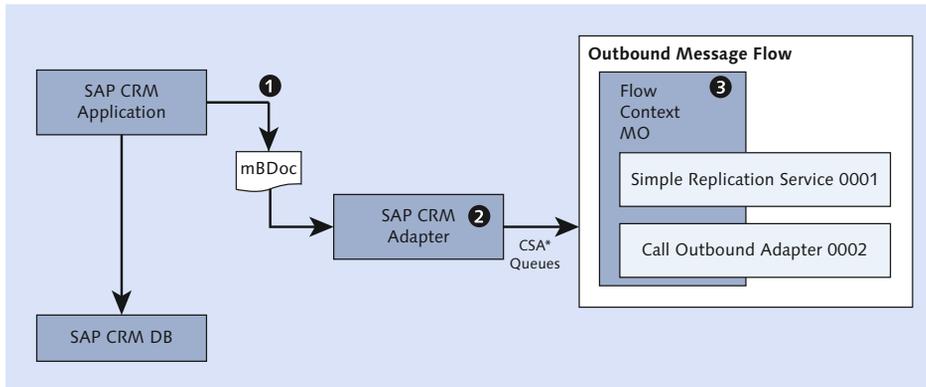


Figure 3.29 Data Flow within the SAP CRM

Let's walk through the delta data flow shown in Figure 3.29:

- ❶ Changes are made in the master data, or new records are created in SAP CRM triggering the creation of the mBDoc in the SAP CRM system.
- ❷ After the mBDoc is created, the SAP CRM adapter is called to trigger the outbound message. The outbound message flow consists of the flow context MO* that triggers the validation services.
- ❸ The outbound message flow triggers the flow context MO*, which triggers the validation services. These can be viewed via Transaction SMO8FD for specific business objects. If the replication is happening for one specific instance, then MO1 flow context is called. If there are multiple instances where the replication should occur, then MO2 flow context is called. Within this step, the data is controlled by the administration console as one of the validation checks. If the subscription for the specific business object isn't maintained, then the SAP ERP (R/3) outbound adapters aren't called. After all validation services are successful, the SAP ERP outbound adapter is called.
- ❹ In Figure 3.30, the SAP ERP outbound adapter has the mapping function module to load the data to the SAP ERP system. The SAP ERP outbound adapter is called to convert the mBDoc into BAPIMTCS structures.

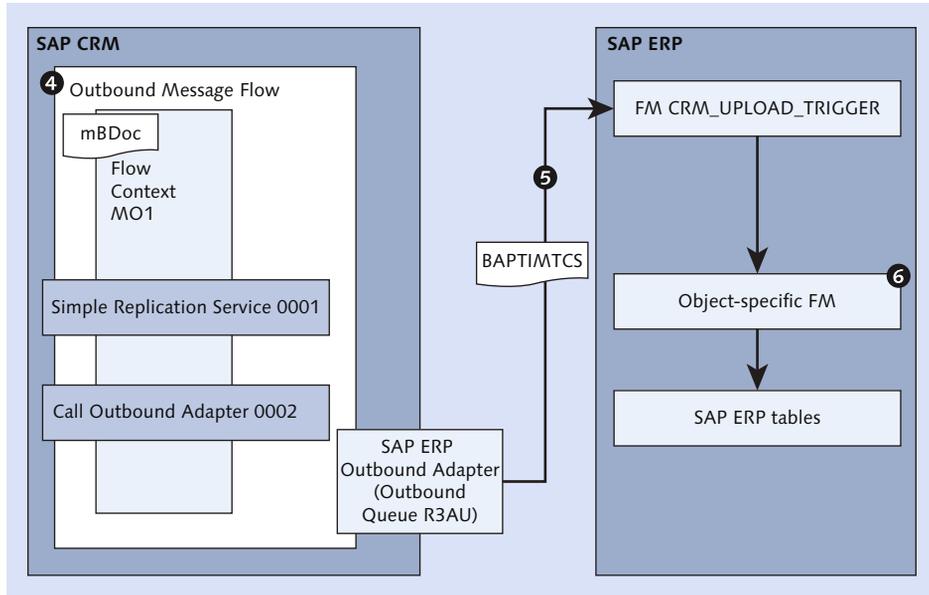


Figure 3.30 Outbound Flow from SAP CRM to SAP ERP

- 5 The mBDoc is converted into BAPIMTCS structures. The SAP ERP (R/3) outbound adapter has the mapping function module, which performs this function. This also triggers program CRM_UPLOAD_TRIGGER in SAP ERP, which calls object-specific function module.
- 6 When the function module CRM_UPLOAD_TRIGGER is called by the SAP ERP outbound adapter, it triggers the call to the object-specific function module to write the data in the SAP ERP database tables. The object-specific function modules are stored in table CRMSUBTAB in the SAP ERP system.

3.2.4 Requesting Data

To request the flow of the data from SAP ERP to SAP CRM for one-off data or to reload certain number ranges for the master data, you can create your own request and pull the data from SAP ERP to SAP CRM. The following steps outline a material load example:

1. Go to SAP menu and navigate to ARCHITECTURE AND TECHNOLOGY • DATA EXCHANGE • SYNCHRONIZATION • R3AR2 – DEFINE REQUESTS.
2. Click NEW ENTRIES.

- Enter the REQUEST NAME, ADAPTER OBJECT, and OBJECT CLASS as shown in [Figure 3.31](#). The REQUEST NAME can be based on your naming convention.

New Entries: Details of Added Entries

Dialog Structure

- Request header
 - Request detail

Request Name: ZMAT1

Request header

Adapter Object: MATERIAL

Object Class: MATERIAL

RequestType: Request: Objects could be loaded from R/3 Backend / CRM DB

Inactive Use once

Creation Date: 04/03/2015

Creation Time: 19:12:42

Creator: ACARVALC

Figure 3.31 Creating a Request for the Delta Load

- Select the request created, and go to the REQUEST DETAIL folder. Enter the values shown in [Figure 3.32](#) for the TABLE NAME, FIELD NAME, and OPTION. The OPTION can be range or specific master data you want to pull from SAP ERP to SAP CRM. In this case, it's EQ EQUALITY (= Low) and the material number in the Low field that you want to replicate from SAP ERP to SAP CRM. Remember to add the leading zeros for replication to be successful.

New Entries: Details of Added Entries

Dialog Structure

- Request header
 - Request detail

Request Name: ZMAT1

Request detail

Table Name: MARA

Field Name: MATWR

Incl/Excl: Inclusive defined set/array

Option: EQ Equality (= Low)

Low: 0000000000000626049

High:

Inactive

Figure 3.32 Request Details

5. Save the request. Run the request via Transaction R3AR4 (Start Requests).
6. Enter the REQUEST NAME created (Figure 3.33). Enter "R/3" for the SOURCE SITE NAME and "CRM" for the TARGET SITE NAME.

The screenshot shows the 'CRM Request Start' dialog box in SAP. The 'Request' section has a 'Request Name' field with the value 'ZMAT1' and a 'to' field. The 'Data flow' section has 'Source Site Name' set to 'R/3' and 'Target Site Name' set to 'CRM'.

Figure 3.33 SAP CRM Request Start

7. Monitor the request via Transaction R3AR3 (Monitor Requests). Enter the REQUEST NAME and execute the report to see if the request is successful. This will bring the data and sync it from SAP ERP to SAP CRM.

3.3 Data Exchange with an External System

SAP CRM has the capability of exchanging data with external systems via the external interface adapter. This is commonly referred as XIF adapter. The flow of information from and to external system is bi-directional. There are two forms of communication possible between SAP CRM and an external system:

- ▶ XML/SOAP (Extensible Markup Language / Simple Object Access Protocol)
- ▶ ALE/IDoc (Application Linking and Enabling / Intermediate Document)

Figure 3.34 shows the data transfer from the external system to the SAP CRM system.

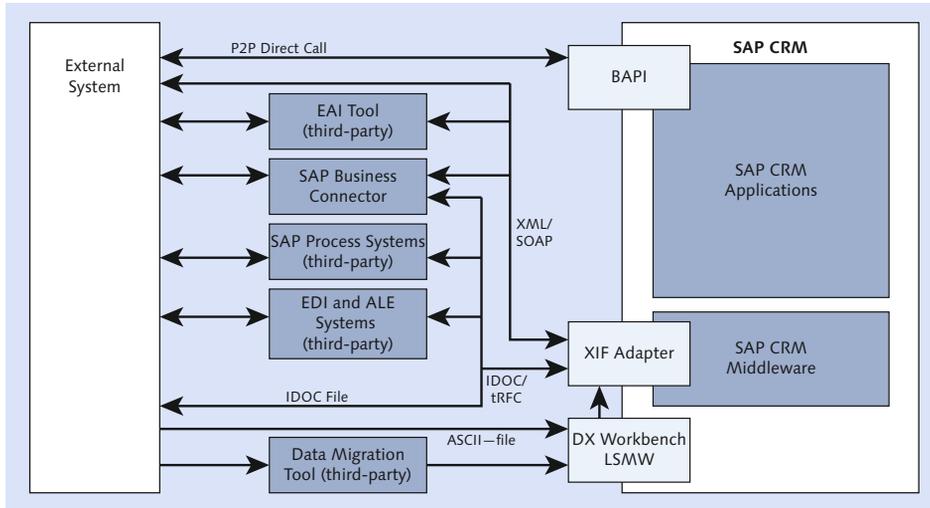


Figure 3.34 Data Exchange between CRM and External System

As shown in [Figure 3.34](#), the XIF adapter within SAP CRM converts the IDoc from the external system to the mBDoc, which then triggers the inbound messaging flow to validate the data before it writes to the SAP CRM database.

If the external system sends data in a format that SAP CRM cannot read, then other third-party systems or SAP Process Integration (SAP PI) are used to convert the data from the external system to XML/SOAP or the IDoc that the SAP CRM XIF adapter reads and converts it into the messaging BDoc. As shown in [Figure 3.35](#), there are multiple channels at work. One channel is the P2P direct call from external system to SAP CRM, another channel of data communication happens via a third-party tool or SAP PI where the data is converted to the readable format for the XIF adapter to accept it.

The following is a diagrammatic representation of the data flow split into two steps (see [Figure 3.35](#)).

1. The XIF adapter converts the SOAP-XML and IDOC complex data type to the mBDoc extension.
2. The XIF adapter triggers SAP CRM middleware to execute the messaging flow for validation services and commit the data in the SAP CRM system.

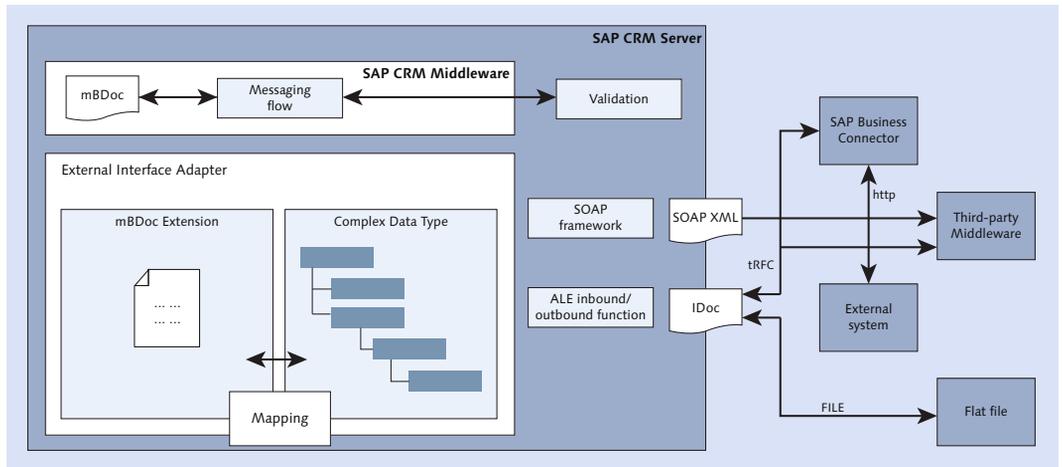


Figure 3.35 External Interface Adapter

Two types of communications are happening in [Figure 3.35](#): one when the business transaction is sent out from SAP CRM to the external system and one where the business transaction is sent from the external system to the SAP CRM system.

Let's go through some of the configuration steps for outbound processing for IDocs and SOAP/XML, and inbound processing for IDoc and SOAP/XML in the next sections.

3.3.1 Outbound and Inbound IDoc Processing

In this section, we'll look at the outbound and inbound processing for IDocs. Let's begin with outbound processing.

IDoc Outbound Processing

Outbound IDoc processing consists of an order confirmation being sent to the external system via SAP PI. Follow these steps to configure the outbound IDoc processing:

1. Create the RFC destination in the source system for the external system to which you're going to send the IDoc. In this case, we're sending the IDoc to SAP PI, which in turn will send it to the customer system in the respective format. To create the RFC destination, follow the menu path, SPRO • CRM • CRM

MIDDLEWARE AND RELATED COMPONENTS • COMMUNICATION SETUP • DEFINE RFC DESTINATIONS (see [Figure 3.36](#)).

The screenshot shows the SAP configuration window for an RFC Destination named 'PITEST100'. The window has a menu bar (Connection, Edit, Goto, Extras, Utilities, System, Help) and a toolbar. Below the title bar, there are buttons for 'Remote Logon', 'Connection Test', and 'Unicode Test'. The main form contains the following fields:

- RFC Destination:** PITEST100
- Connection Type:** 3 ABAP Connection
- Description:**
 - Description 1: PITEST100 (highlighted in yellow)
 - Description 2: (empty)
 - Description 3: (empty)

At the bottom, there are tabs for 'Administration', 'Technical Settings', 'Logon & Security', 'Unicode', and 'Special Options'. The 'Administration' tab is active, showing the 'Attributes' section with the following data:

Created By	AGARWALC	Client	100
Created On	04/03/15	Time	21:45:14
Last Changed By	AGARWALC	Client	100
Changed On	04/03/15	Time	21:45:14

Figure 3.36 Creating the RFC Connection to the SAP PI System

- Next, create the logical system by following the menu path, SPRO • CRM • CRM MIDDLEWARE AND RELATED COMPONENTS • COMMUNICATION SETUP • SETUP LOGICAL SYSTEMS • DEFINE LOGICAL SYSTEM.
- To establish the connection with SAP CRM and SAP PI, you need to create the logical system for SAP PI, as shown in [Figure 3.37](#).
- Create the receiver port via Transaction WE21. This configuration is required to dispatch the messages to the logical systems. The port for SAP PI configuration is shown in [Figure 3.38](#).

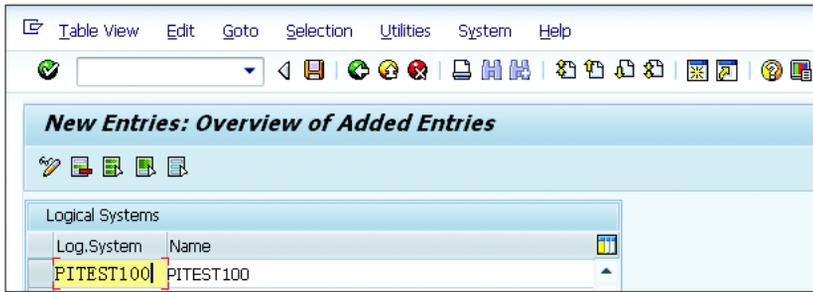


Figure 3.37 Creating the Logical System

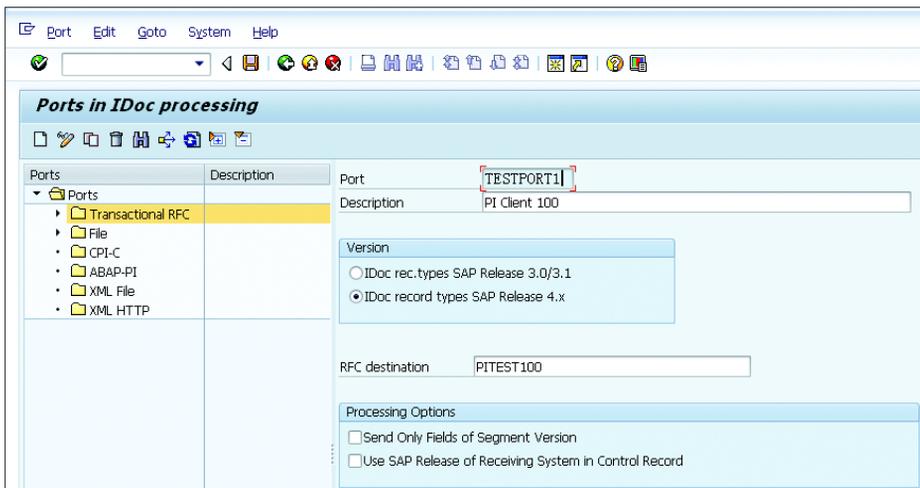


Figure 3.38 Creating the Receiver Port for IDoc Processing

5. Create the partner profiles for the relevant systems via Transaction WE20. Here you assign the outbound parameters with CRMXIF_ORDER_SAVE_M, as shown in Figure 3.39.

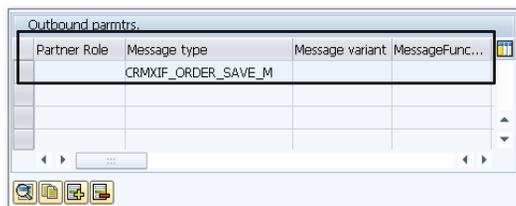


Figure 3.39 Outbound Parameters – Message Type CRMXIF_ORDER_SAVE_M

- Assign the IDoc type CRMXIF_ORDER_SAVE_M01 to the message type CRMXIF_ORDER_SAVE_M. The OUTPUT MODE is transferred immediately to the IDoc (see [Figure 3.40](#)).

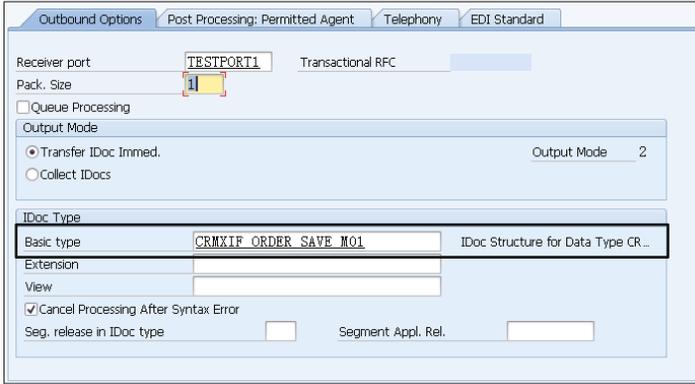


Figure 3.40 Outbound Details

- Create a SITE for the XIF for the IDocs, and assign the site attributes with the receiving partner as shown in [Figure 3.41](#).

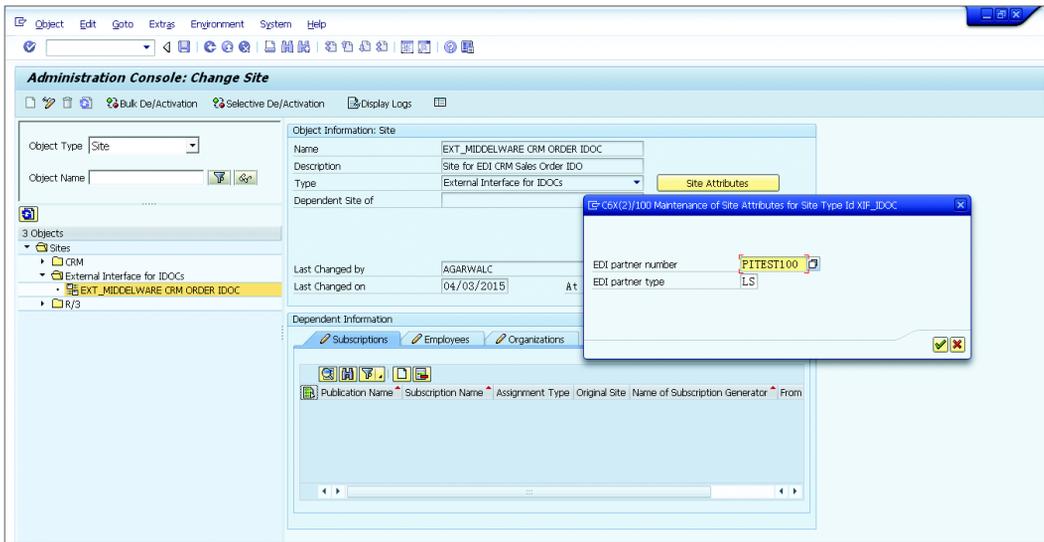


Figure 3.41 Creating the Site for the Receiving Partner

- The last step in configuring the outbound electronic data interchange (EDI) scenario is to assign the site created in the preceding step to the interface type CRMXIF_ORDER_SAVE by accessing Transaction CRMXIF_C1 in SAP CRM.

IDoc Inbound Processing

In this scenario, SAP CRM consumes the data in the IDoc format from SAP PI in the case of an inbound order flowing into the SAP CRM system. The XIF adapter for the inbound scenario changes the IDoc to an mBDoc format when the document is received in the SAP CRM system. To begin, create the logical system as mentioned in the outbound EDI scenario. Follow these steps:

- Create the partner profiles for the sender partner via Transaction WE20. Assign the MESSAGE TYPE CRMXIF_ORDER_SAVE_M to the INBOUND PARMTRS. (see [Figure 3.42](#)).

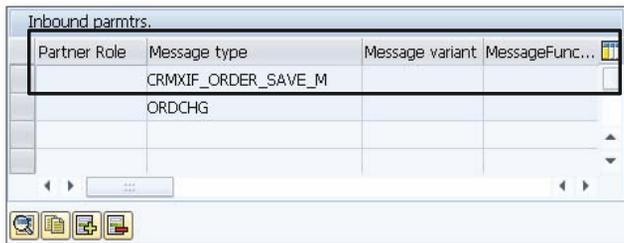


Figure 3.42 Inbound Parameters – Message Type CRMXIF_ORDER_SAVE_M

- Assign the PROCESS CODE as APLI (Inbound IDoc: Individual Processing) to the message type CRMXIF_ORDER_SAVE_M (see [Figure 3.43](#)).

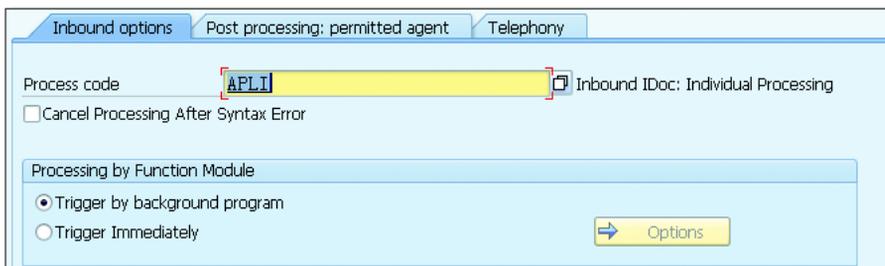


Figure 3.43 Inbound Details

3.3.2 Outbound and Inbound SOAP/XML Processing

In this section, we'll look at the outbound and inbound processing for SOAP/XML.

SOAP/XML Outbound Processing

To configure SOAP/XML outbound processing, follow these steps:

1. Create the HTTP destination via Transaction SM59 to the external server.
2. Create the SITE for the XIF for the IDocs, and assign the site attributes with the receiving partner as shown in [Figure 3.44](#).
3. Assign the RFC destination created to the external server in the site attributes.

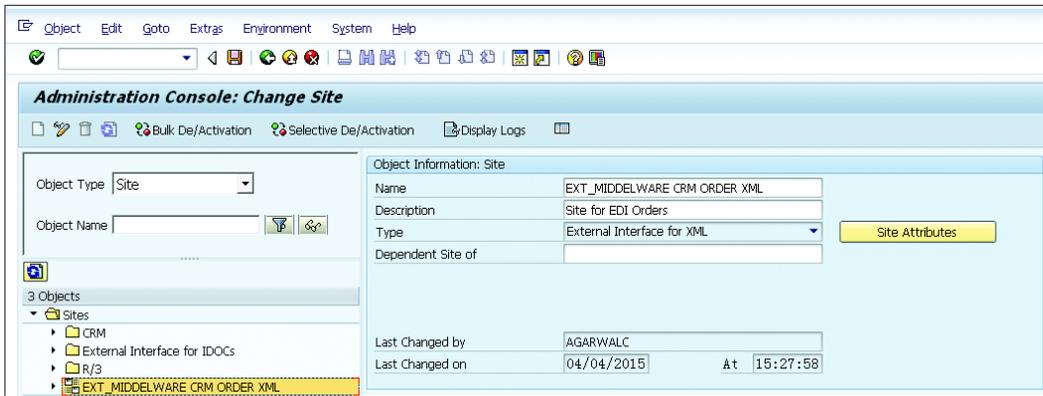


Figure 3.44 Create Site – External Interface for XML

Subscription Criteria

There isn't any order type restriction based on subscription for the BUS_TRANS_MSG publication. Based on your business scenario, you can assign the criteria to your subscription; for example, you may want to send certain order types to the receiving partner.

4. Assign the created site to the interface type via Transaction CRMXIF_C1.

SOAP/XML Inbound Processing

Generally, there isn't any specific customization required in the SAP CRM system for SOAP/XML inbound processing. You simply need to activate the HTTP services via Transaction SMICM • SERVICES.

Other Functionality

In addition to the preceding functionality of inbound and outbound IDoc scenarios, you can also use the XIF adapter together with the Legacy System Migration Workbench (LSMW) to import the data present in a flat file, to generate the IDocs first, and then to save them in the SAP CRM system.

3.4 Data Exchange with SAP BusinessObjects Business Intelligence

The SAP BusinessObjects Business Intelligence (SAP BusinessObjects BI) adapter is used to load data from SAP CRM to SAP BusinessObjects BI. Like replicating data from SAP CRM to SAP ERP, the data is replicated from SAP CRM to the SAP BusinessObjects BI system in a format that SAP BusinessObjects BI understands.

Data flow steps are similar to the SAP ERP system; in this case, the SAP CRM application sends the data from a specific data source in the mBDoc format. This mBDoc is converted into the format that SAP BusinessObjects BI understands (i.e., extract structure). SAP BusinessObjects BI reads the extract structure, which is essentially raw data for a specific data source, for example, OCRM_SALES_ACT_I. After the data is converted into the extract format, it's queued up in the outbound queue of the SAP CRM system. Before the data is converted from the mBDoc to the extract structure, you can implement a BADI that can look up additional fields not available in the BDoc that are required by SAP BusinessObjects BI.

After the data from SAP BusinessObjects BI is queued up in the outbound queue of SAP CRM, SAP BusinessObjects BI can consume that data based on the request made by the SAP BusinessObjects BI system to the SAP CRM system. The data flow from SAP CRM to SAP BusinessObjects BI isn't automatic; these data flows will only occur if the request is made by the SAP BusinessObjects BI system to the SAP CRM system. These queues in SAP CRM are also referred to as SAP BW delta queues.

Figure 3.45 shows the actual data flow from the SAP CRM system to the SAP BusinessObjects BI system.

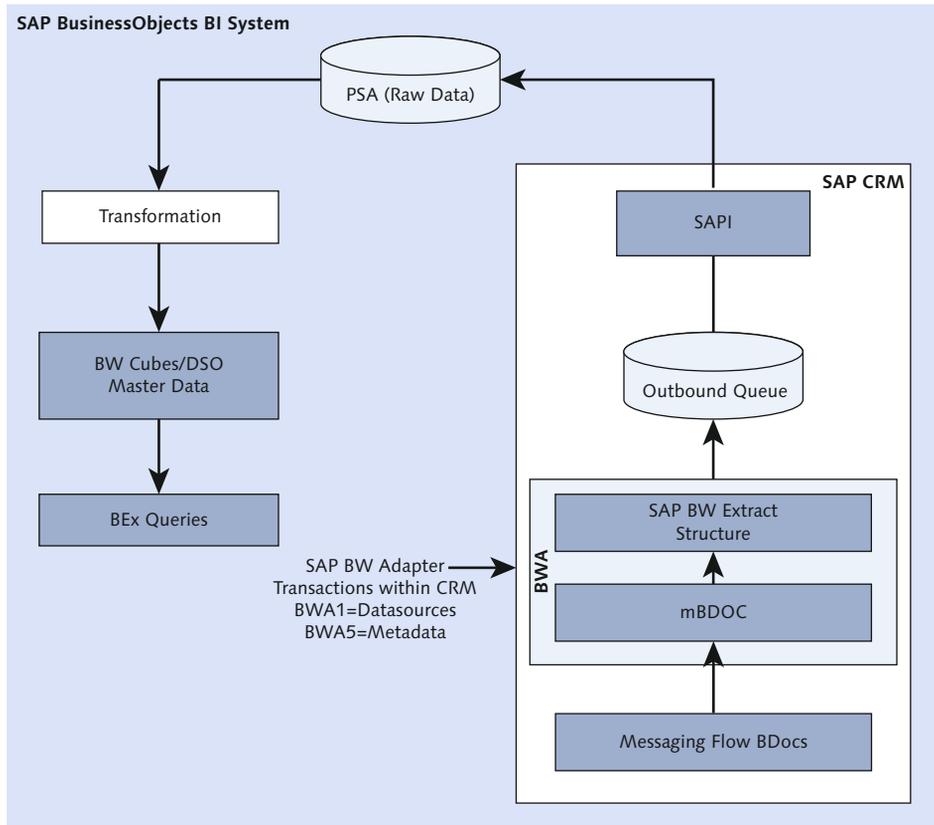


Figure 3.45 Data Flow from SAP CRM to SAP BusinessObjects BI

The data extraction happening from SAP CRM by the SAP BW adapter is shown in Figure 3.45. The message flow within the SAP CRM system triggers the mBDoc to be converted to the SAP BW extract structure. Figure 3.46 shows the SAP BW adapter for EXTRACT STRUCT. 0CRM_QUOTATION_I. It also shows the SELECTION MODULE, and the MAPPING MODULE which convert the data from the mBDoc to the SAP BW extract structure.

This data is then queued up in the outbound queue of SAP CRM, which is also known as an SAP BW delta queue. The data doesn't flow automatically to the SAP BusinessObjects BI system. The SAP BusinessObjects BI object InfoPackage is

used to consume the data from the outbound queue of SAP CRM to the SAP BusinessObjects BI system. A service API (SAPI) is installed as a plug-in in SAP CRM, which processes the InfoPackage and coordinates the data transfer from SAP CRM to SAP BusinessObjects BI.

BW Adapter: Maintain DataSource

DataSource: OCRM_QUOTATION_I

Long description: CRM Quotations: Item

Medium description: Quotations: Item

Short description: Quotations: Item

Metadata | Extract Structure | Selection Conditions | Mapping

EDoc	BUS_TRANSACTION_MESSAGE
Extract Struct.	CRMT_EW_QUOTATION_I
Type of DataSource	TRAN
Appl. Component	OCRM_SALES
Delta Procedure	AIMD
Delete Fld-Name	RECORDMODE
SelectionModule	CRM_BWA_INIT_BUS_TRANS
Mapping Module	CRM_EW_QUOTATION_I_MAP

Figure 3.46 SAP BW Adapter OCRM_QUOTATION_I

Now that you have a greater understanding of the key data exchange scenarios between SAP CRM and SAP ERP, external systems, and SAP BusinessObjects BI, let's dive into the system setup steps and middleware requirements for SAP CRM.

3.5 System Setup

System setup requires specific steps to be executed as a part of the middleware activities within SAP CRM, and certain settings are required to load the master data and condition objects into SAP CRM. This is a basis for any data (master data/transaction data) exchange between SAP CRM and SAP ERP.

The communication of the master data and business documents from SAP CRM to SAP ERP is carried out via SAP CRM middleware adapters. Before you transact anything, it's necessary to have certain configuration objects, master data objects, and condition objects loaded from SAP ERP to SAP CRM. There are exceptions for loading these objects if you're using a standalone SAP CRM system.

SAP CRM middleware is a part of the SAP CRM server and helps handle the data exchange with internal applications and external major components. Systems involved for configuring the middleware settings are SAP ERP and SAP CRM. SAP CRM middleware contains important functionality to help SAP CRM share data with other systems. It's used to replicate business partners, pricing data, transaction data, contracts, and products. This data exchange between SAP CRM and SAP ERP is supported by a plug-in installed on the SAP ERP system and a built-in SAP ERP adapter within SAP CRM.

In this section, we'll look at the different middleware settings for SAP ERP and SAP CRM and then see how to connect them both. Finally, we'll walk through the replication activities.

3.5.1 SAP CRM Middleware Settings

In this section, we'll look at the middleware settings that need to be made for SAP CRM.

SAP ERP Settings

The first step in configuring the middleware settings for SAP CRM is to customize the settings in SAP ERP.

Create a Logical System

To begin, we need to create a logical system for the SAP ERP system. To enable communication between systems within the IT landscape, the following steps are required:

- ▶ Defining the systems as logical systems
- ▶ Assigning the logical system for the SAP ERP system to a client

These steps enable the systems to recognize the target system as an RFC destination.

Follow these steps:

1. In the SAP ERP menu, go to Transaction BD54.
2. Create the logical SAP ERP system.
3. Assign the logical system for SAP ERP to a client. In the SAP ERP menu, go to Transaction SCC4.
4. Select your SAP ERP client, and click DETAILS.
5. In the LOGICAL SYSTEM field, select the newly created logical system of your SAP ERP using input help.
6. Save and confirm.

Create an RFC User

To enable communication between the SAP ERP backend system and the SAP CRM system, an RFC user must be created in the SAP ERP system. The RFC user in the application client enables multiple RFC connections. To create an RFC user, follow these steps:

1. In the SAP ERP transaction menu, use Transaction SU01.
2. Click CREATE or press **F8**.
3. On the MAINTAIN USER screen, enter the details ADDRESS, LOGON DATA, and PROFILE.
4. Save your entries.

SAP CRM Settings

In this section, we'll look at the SAP CRM settings that must be made.

Define a Logical System

The distribution of data between systems makes it necessary to identify each system as a unique logical system. To define the logical system with SAP CRM, follow these steps:

1. In SAP CRM, go to CUSTOMER RELATIONSHIP MANAGEMENT • CRM MIDDLEWARE AND RELATED COMPONENTS • COMMUNICATION SETUP • SET UP LOGICAL SYSTEMS • DEFINE LOGICAL SYSTEM.
2. Click NEW ENTRIES.
3. Enter the name of the logical system to create.

4. In SAP CRM, go to CUSTOMER RELATIONSHIP MANAGEMENT • CRM MIDDLEWARE AND RELATED COMPONENTS • COMMUNICATION SETUP • SET UP LOGICAL SYSTEMS • ASSIGN LOGICAL SYSTEM TO CLIENT.
5. Select the created logical system.
6. Save your entries.

Create an RFC User

Next, an RFC user in the SAP CRM system is required for setting up the connection between the SAP ERP and SAP CRM systems. To create an RFC user in SAP CRM, follow these steps:

1. On the SAP CRM menu, go to Transaction SU01.
2. Click NEW USER, and enter the details for the ADDRESS, LOGON DATA, and PROFILE fields.
3. Save your entries.

3.5.2 Connecting SAP ERP and SAP CRM

This section describes all settings that are necessary to connect the SAP ERP and SAP CRM systems with each other.

SAP ERP Settings

In this section, we'll look at the settings that must be made in SAP ERP to connect with SAP CRM.

Create an RFC Destination

Communication between the SAP ERP and SAP CRM systems is based on the RFC interface and RFCs that manage the communication process, parameter transfer, and error handling between different systems. To set up this functionality within the system, it's important to define RFC destinations in the system landscape by following these steps:

1. Go to Transaction SM59.
2. Click CREATE.
3. Enter the following data according to the RFC destination: FIELD NAME, TECHNICAL SETTINGS, LOGON DATA, MDMP, UNICODE, and SPECIAL OPTIONS if required.
4. Save your RFC destination.

Create an RFC User in Client 000

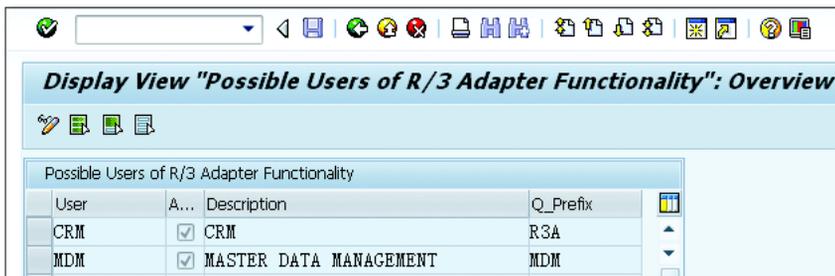
Next, in SAP ERP, an RFC user in client 000 is required for replication and realignment queues. To do this, follow these steps:

1. On the SAP ERP menu, go to Transaction SU01.
2. Under the USER field, click CREATE, or press **[F8]**.
3. On the MAINTAIN USER screen, enter the appropriate data in the following fields: ADDRESS, LOGON DATA, and PROFILES.
4. Save your entries.

Maintain Tables CRMCONSUM and CRMRFPCPAR

Next, you need to maintain table CRMCONSUM in SAP ERP. Table CRMCONSUM contains the consumers (applications) that are to receive data from the SAP ERP system. To check this table, follow these steps:

1. In the SAP ERP menu, go to Transaction SM30.
2. In the TABLE/VIEW field, enter the table name "CRMCONSUM".
3. Click MAINTAIN.
4. Enter the values for the fields shown in [Figure 3.47](#).



The screenshot shows the SAP SM30 'Possible Users of R/3 Adapter Functionality' table. The table has columns for User, A..., Description, and Q_Prefix. Two entries are visible: CRM and MDM.

User	A...	Description	Q_Prefix
CRM	<input checked="" type="checkbox"/>	CRM	R3A
MDM	<input checked="" type="checkbox"/>	MASTER DATA MANAGEMENT	MDM

Figure 3.47 Possible Users for R/3 Adapter Functionality

You also need to maintain table CRMRFPCPAR in SAP ERP. The parameters in table CRMRFPCPAR indicate the RFC destinations that receive data. The required parameters include, for example, consumer, client, object name, and download type. To maintain this table, follow these steps:

1. In the SAP ERP menu, go to Transaction SM30.
2. In the TABLE/VIEW field, enter the table name "CRMRFPCPAR".

3. Click MAINTAIN.
4. Enter the values shown for the fields in [Figure 3.48](#).

The screenshot shows the SAP CRM Middleware configuration interface. The main title is "Change View 'Definitions for RFC Connections': Details of Selected Set". The interface includes a menu bar (Table View, Edit, Goto, Selection, Utilities, System, Help) and a toolbar. The configuration fields are as follows:

User	CRM
Object Name	*
Destination	TSTCLNT100
Load Type	* All Load Types
Definitions for RFC Connections	
Queue Name	
Queue Name	
BAPINAME	
INFO	
<input type="checkbox"/> Data Rcd Inactive	
<input type="checkbox"/> Discard Data	
InQueue Flag	<input checked="" type="checkbox"/>
Send XML	M Mixed Mode (Optimized)
<input type="checkbox"/> Stop Data	
CRM Release	702
Logical system	C6XCLNT100

Figure 3.48 Settings for Table CRMRFPCPAR

Note

You can create the entries based on your requirements, whether it's ALL LOAD TYPES, INITIAL LOAD, or DELTA LOAD. You can also discard data based on the SAP ERP adapter object, which won't allow the data to flow from SAP ERP to SAP CRM.

Declare SAP CRM Release

The data flow between SAP ERP and SAP CRM requires that the SAP CRM release is declared in the SAP ERP system. To enable this, follow these steps:

1. On the SAP ERP menu, go to Transaction SM30.
2. In the TABLE/VIEW field, enter the table name "CRMPAROLTP".

3. Click MAINTAIN.
4. On the screen that appears, enter "CRM_RELEASE" in the PARAMETER NAME field. In the PARAM. VALUE field, enter "701".

Activate Event Control

Activation of the event control is a prerequisite for the replication of data from SAP ERP to SAP CRM. To activate this feature, follow these steps:

1. In the SAP ERP menu, go to Transaction SM30.
2. Choose the table TBE11.
3. Set the applications NDI (NEW DIMENSION INTEGRATION) to ACTIVE by selecting the check box in column A.
4. Save the entries.

SAP CRM Settings

Now that you've completed the necessary settings to connect SAP ERP, let's look at the steps involved in the SAP CRM system.

Create RFC Destination

To begin, create the RFC destination by following these steps:

1. In the SAP CRM menu, go to Transaction SM59.
2. Click CREATE.
3. Enter "XXXCLNT200" as an example in the RFC DESTINATION field.
4. For the CONNECTION TYPE, select 3 (CONNECTION TO ABAP SYSTEM).
5. In the DESCRIPTION field, enter "ERP Client". Press and add the following details: TECHNICAL SETTINGS, LOGON SECURITY, MDMP, and UNICODE.
6. Save your RFC destination.

The newly created RFC connection can be tested using the CONNECTION TEST button. The connection test performs only a technical test (host, IP address) of the target system because the authorization test performs a logon to the target system using the maintained user and password of the RFC destination.

Create an RFC User in Client 000

To make the data replication successful, you need to create the RFC connection in the current application for client 000 by following these steps:

1. In the SAP CRM menu, go to Transaction SM59.
2. Click CREATE.
3. On the screen that appears, enter the RFC DESTINATION as "SAPCRM_MW_RR_000".
4. For the CONNECTION TYPE, select L (REFERENCE ENTRY). This refers to another destination.
5. In the DESCRIPTION field, enter "Processing R&R queues – client 000".
6. Press . Under the LOGON/SECURITY tab, enter "EN" in the LANGUAGE field and "RFCUSER" in the USER field along with the appropriate password.
7. Save your entries.

Create an RFC Destination for Replication and Realignment Queues

Within this step, you need to create the RFC destination for the SAP CRM working client by following these steps:

1. In the SAP CRM menu, go to the Transaction SM59.
2. Choose CREATE.
3. For the RFC DESTINATION, enter "ZZCLNT100".
4. In the CONNECTION TYPE field, enter "3".
5. For the DESCRIPTION field, enter "RFC between client 000 and working client". Press .
6. Under the LOGON/SECURITY tab, enter "EN" for LANGUAGE, "100" for CLIENT, and "RFCUSER" in the USER field, as well as the appropriate password. Press .
7. Under SPECIAL OPTIONS, deselect TRACE, deselect SLOW RFC CONNECTION, and select UNICODE, if the target system is a Unicode system.
8. Save your entries.

Create an RFC User in Client 000 for Replication and Realignment Queues

An RFC user is required in client 000 for the replication and realignment queues. To create an RFC user in client 000, follow these steps:

1. In the SAP CRM menu, go to Transaction SU01.
2. In the USER field, notice the ADDRESS, LOGON DATA, DEFAULTS, and PROFILES tabs. Under the ADDRESS tab, enter "RFCUSER" for the LAST NAME field and "Default-User for RFC Connection" in the FUNCTION field.
3. Under the LOGON DATA tab, enter the PASSWORD, and select "System" as the USER TYPE.
4. For the DEFAULTS tab, select "EN" for the LOGON LANGUAGE.
5. Under the PROFILES tab, select both "SAP_ALL" and "SAP_NEW" for the PROFILE.
6. Saves your entries.

Create Site IDs and Subscriptions for Online Transaction Processing

Within this step, the OLTP SAP ERP system must be defined as a site (the SAP CRM site is already predefined). After you've created this site, you must define the distribution rules (subscriptions) that determine the data flow to the SAP ERP site.

The RFC destination for the connection to SAP ERP must be defined before performing SAP ERP site definition. Follow these steps:

1. In SAP CRM, go to Transaction SMOEAC (Middleware Admin Console).
2. In the OBJECT TYPE field in the left screen area, select SITE.
3. Choose CREATE OBJECT.
4. In the OBJECT INFORMATION: SITE screen area, enter the name "OLTP" and the description "OLTP SAP ERP system", and choose the SITE TYPE as SAP ERP.
5. Choose the SITE ATTRIBUTES next to the TYPE field.
6. In the MAINTENANCE OF ERP SITE ATTRIBUTES dialog box, enter the RFC destination for the SAP ERP system.
7. Choose SET THE ATTRIBUTES, or press .
8. Choose SAVE.

After defining the SAP ERP site, you need to create subscriptions using the Subscription Wizard to enable the uploading of the data from SAP CRM to SAP ERP. Follow these steps:

1. In SAP CRM, go to Transaction SMOEAC (Middleware Admin Console).
2. In the OBJECT TYPE field, select SUBSCRIPTION.
3. Click the CREATE icon.
4. Follow the Subscription Wizard instructions to create the subscriptions.
5. Assign these subscriptions to your SAP ERP (OLTP) site.

3.5.3 Replication Activities

Before we initiate any customizing or master data load there are preliminary activities that need to be performed. These steps are mandatory to perform a successful and seamless data replication from SAP ERP to the SAP CRM system.

Register Queues

In this section, we'll now register the queues in SAP CRM. Follow these steps:

1. In the SAP CRM menu, go to Transaction SMQR.
2. Choose REGISTRATION.
3. On the QUEUE REGISTRATION screen, make the following entries:
 - ▶ QUEUE NAME: CSA*
 - ▶ EXEMODE: D
 - ▶ MAXTIME: 6
 - ▶ USERDEST: <blank>
 - ▶ NRETRY: 30
 - ▶ TDELAY: 300
4. Register an additional queue with the following field entries:
 - ▶ QUEUE NAME: R3A*
 - ▶ EXEMODE: D
 - ▶ MAXTIME: 60
 - ▶ USERDEST: <blank>
 - ▶ NRETRY: 30
 - ▶ TDELAY: 300
5. Press . The CSA* and the R3A* queues are registered and are displayed in the queue list.

6. Similarly, register outbound scheduler QOUT via Transaction SMQS.
7. Register the SAP ERP destination on the outbound scheduler to enable the data replication from SAP CRM to SAP ERP.

Start Queue Demon and Queues

Within this step, you activate the queues so that the status of the queue demon is set to RELEASED. Executing this step will enable the queue replication.

Follow these steps to release the queue:

1. In SAP CRM, go to Transaction SMOHQEUE.
2. Choose START QUEUE DEMON.
3. Release all queues by choosing RELEASE QUEUE and selecting the valid line in the CLIENT field.
4. Perform step 3 for all the queues: SUBCHECK, REALIGN, DEPENDENCY, EXTRACT, EXTRACTBLK, and AC_EXTRACT.
5. [Figure 3.49](#) shows the status RELEASED (yellow) of the queue demon with all queues, including SUBCHECK, REALIGN, DEPENDENCY, EXTRACT, EXTRACTBLK, and AC_EXTRACT.

Monitor R&R Queues

Status of Queue Demon: ○○○ **RELEASED**

Display current client (100) only:

Client	Queue	Status	Number of entries	Active tasks
100	SUBCHECK	○○○ RELEASED	0	0
100	REALIGN	○○○ RELEASED	0	0
100	DEPENDENCY	○○○ RELEASED	0	0
100	EXTRACT	○○○ RELEASED	0	0
100	EXTRACTBLK	○○○ RELEASED	0	0
100	AC_EXTRACT	○○○ RELEASED	0	0

Figure 3.49 Monitor R&R Queues Screen

Client 000 and Working Client

Do this activity for client 000 and the working client.

Set Up the Error Handler

Certain settings need to be configured to receive email alerts on failed BDocs. Follow these steps:

1. From the SAP CRM EASY ACCESS screen, go to Transaction SMW00.
2. Select DEFAULT ERROR ACTION.
3. Choose EXECUTE, or press .
4. Select MAINTAIN CONFIGURATION, or press .
5. Select MAIL AS ERROR ACTION.
6. Under MAIL PARAMETERS, enter "Administrator User ID" in the E-MAIL ADDRESS OF RECEIVERS field. In the E-MAIL TYPE field, enter "B (SAP User)".
7. Choose SAVE CONFIGURATION.
8. Choose EXECUTE.

Set Up Middleware Reorganization SMO6_REORG

The tables for the BDoc message flow and the middleware trace can increase considerably and therefore require a lot of disk space. This may also cause a decrease in performance during the processing of BDoc messages. SAP has provided the standard middleware reorganization report SMO6_REORG to delete the BDoc entries from tables SMW3_BDOC4 and SMW3_BDOC6. You can run a batch job with program SMO6_REORG.

Before starting the customizing replication, verify that entries for the ISO codes are unique in the following SAP ERP tables:

- ▶ Language keys (T002 field LAISO)
- ▶ Currency codes (TCURC field ISOCD)
- ▶ Countries (T005 field INTCA)

After this is confirmed, follow these steps:

1. From the SAP ERP menu, go to Transaction SE16.
2. In the TABLE NAME field, enter "T002".
3. Choose TABLE CONTENTS.
4. Choose EXECUTE, or press .

5. Check the LAISO column for duplicate entries.
6. Repeat these steps for the other tables (tables TCURC and T005).

Table CRMATAB

It's also necessary to check table CRMATAB in SAP ERP to confirm all tables present in this table are connected to the SAP ERP adapter objects in SAP CRM. If the table is blank, then you'll need to run program SMOF_FILL_CRMATAB. Also, verify tables CRMMLSGUID in SAP CRM and CRMPRLS in SAP ERP. The GUID should match between systems for the successful replication between SAP ERP and SAP CRM systems.

Define the Product Hierarchy Structure

Within this step, you verify the product hierarchy structure within the SAP ERP system and make the necessary settings in SAP CRM. Follow these steps:

1. From the SAP ERP menu, go to Transaction SE11. In the ABAP DICTIONARY : INITIAL screen, enter "PRODHS" in the VIEW field, and then click DISPLAY. In the DICTIONARY: DISPLAY STRUCTURE screen, the number of components corresponds to the number of levels in the SAP CRM system. The LENGTH field defines the number of digits for each level.
2. In SAP CRM, go to SPRO • CROSS APPLICATION COMPONENTS • SAP PRODUCT • PRODUCT CATEGORY • DEFINE CATEGORY NUMBERING SCHEMES. Choose new entries for R3PRODHIER. Mark the number scheme R3PRODHIER, and double click on the DEFINE NUMBERING SCHEME LEVELS folder. The LENGTH field defines the number of digits for each level.

In SAP CRM, you now define the product ID settings. Within this step, you define how the product ID is shown on the interface and how the product ID is saved in the database. Follow these steps:

1. In SAP CRM, go to Transaction COMCPRFORMAT. Enter the appropriate values in the following fields:
 - ▶ PROD ID LENGTH: The value of the MATERIAL NO. field should match the length in the SAP ERP system (Transaction OMSL).
 - ▶ TEMPLATE FOR ID: This is a template for converting the product ID.
 - ▶ DISPLAY LEADING ZEROS: The product is displayed with the leading zeros when this checkbox is activated. If lexicography is activated, the leading

zeros are activated by default because the products with leading zeros are different from the products without leading zeros with the same number.

- ▶ **SAVE LEXICOGRAPHICALLY:** If the products are set to lexicographically, then the products with leading zeros are different from those without leading zero.

Recommendation

It's recommended to have the same settings in SAP ERP and SAP CRM to avoid any functionality failures.

Replicate Customizing Objects from SAP ERP to SAP CRM

To initiate the master data replication, the customizing tables between the SAP ERP and SAP CRM systems should be in sync to avoid any data replication failures or data inconsistency. Within this step, you need to download all customizing objects and sync the configuration tables between the SAP ERP and SAP CRM systems. Follow these steps:

1. In SAP CRM, go to Transaction R3AS (Initial Load).
2. Choose the respective OBJECT NAME (DNL_CUT_ACGRPB).
3. Choose the SOURCE SITE (OLTP).
4. Choose the DESTINATION SITE (CRM).
5. Click the EXECUTE button, or press **F8**.
6. You'll find the remaining objects you need to download to ensure customizing tables assigned to the adapter object are in sync from SAP ERP to SAP CRM here: https://help.sap.com/saphelp_crm60/helpdata/en/1d/09d1e713d711d6999e00508b6b8a93/content.htm. Repeat the steps for all the customizing objects listed at this web page.

Setting Up Taxes

To replicate the tax information on business partners and products, it's important to replicate the tax customizing information from the SAP ERP system and the SAP CRM system.

Define Tax Types in SAP ERP

Within this step, you define the tax type in the SAP ERP system based on your business requirement and the tax type entries specific to the country.

Follow these steps to add the tax type in the SAP ERP system:

1. Check table TSTL (tax categories by countries). For every relevant combination of country and tax category in table TSTL, a corresponding entry has to be available in the table TB070_CM.
2. Go to Transaction PITC. You should then branch to the DEFINE TAX TYPES screen.
3. Check if entries for the relevant countries and tax types exist.
4. If not, again check table TSTL (tax categories by countries).
5. Choose DEFINE TAX TYPES.
6. Choose NEW ENTRIES.
7. Enter the COUNTRY.
8. Enter the TAX TYPE.
9. Indicate, via the checkboxes, if the tax type is relevant for the business partner, product, or both.

Define Tax Type and Group in SAP CRM

Similar to the previous step, here you define the tax type and tax groups in the SAP CRM system for products to make sure tax customizing is in sync with the SAP ERP system. These correspond to the SAP ERP tax classifications that are used in material and customer master records, and which are also used by tax condition records.

Follow these steps:

1. Check SAP ERP tables TSTL and TSKM using Transaction SE16.
2. Navigate to CROSS-APPLICATION COMPONENTS • SAP PRODUCT • TAX TYPES AND TAX GROUPS • DEFINE TAX TYPES AND TAX GROUPS IN THE CRM SYSTEM.
3. Select the country's tax types for which you have to maintain the product taxes, and choose ASSIGN PRODUCT TAX GROUPS.
4. Choose NEW ENTRIES.

5. For each combination of COUNTRY, TAX CATEGORY, and TAX CLASSIFICATION in SAP ERP (tables TSTL and TSKM), create a corresponding combination of the same fields in SAP CRM.

Define Business Partner Tax Groups in SAP ERP

Within this step, you create the tax group in the SAP ERP system for the defined tax types based on the country setting. Follow these steps:

1. Check tables TSTL and TSKD in SAP ERP. For every relevant country and tax category in table TSTL, determine the tax classifications in table TSKD. For each combination of country, tax category, and tax classification, an entry in table TB071_CM consisting of country, tax type, and tax group must exist.
2. Go to Transaction PITC.
3. Select a TAX TYPE.
4. Choose ASSIGN BP TAX GROUP. Check if an entry according to table TSKD exists. If not, choose NEW ENTRIES.
5. Enter the COUNTRY, REGION, TAX TYPE, and TAX GROUP.
6. Enter the TAX TYPE.
7. Enter the TAX GROUP.

Define Business Partner Tax Classification in SAP ERP

Within this step, you assign SAP CRM business partner tax groups to tax classifications. Navigate to SAP ERP, and follow the menu path, SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • TAXES • BUSINESS PARTNER TAX GROUPS • ASSIGN SAP CRM BP TAX GROUPS TO TAX CLASSIFICATIONS. On the next screen, you assign the SAP CRM business partner tax groups to tax classifications. Follow these steps:

1. On the TAX CLASSIFICATION: MAPPING SAP ERP TO SAP CRM screen, choose NEW ENTRIES.
2. Enter the COUNTRY and REGION. If you calculate tax via the jurisdiction method, you must maintain a REGION.
3. Enter the SAP CRM TAX TYPE and TAX GROUP.
4. Enter the SAP ERP TAX CATEGORY and TAX CLASSIFICATION.
5. Choose SAVE.

Define Assignment of Product Tax Data from SAP ERP to SAP CRM

Within this step, you create an assignment for country, tax type, product tax group, tax sequence, and tax classification in table `CRMC_TAX_MAP` in SAP CRM. This table is the tax mapping table between SAP ERP and SAP CRM. Follow these steps:

1. On the **TAX CLASSIFICATION: MAPPING SAP ERP TO SAP CRM** screen, choose **NEW ENTRIES**.
2. Check tables `TSTL` and `TSKM` in SAP ERP.
3. For each combination of country, tax category, and tax classification in tables `TSTL` and `TSKM`, you must create an entry in table `CRMC_TAX_MAP` in the SAP CRM system as follows:
 - ▶ Run **ASSIGN TAX GROUPS TO SAP ERP TAX CLASSIFICATIONS (PRODUCT)**.
 - ▶ Navigate via the menu path, **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • TAXES • BASIC SETTINGS • TAX TYPES AND TAX GROUPS • ASSIGN TAX GROUPS TO SAP ERP TAX CLASSIFICATIONS (PRODUCT)**.
 - ▶ Choose **NEW ENTRIES**.
 - ▶ Enter values for **COUNTRY, TAX TYPE, PRODUCT TAX GROUP, TAX SEQUENCE, and TAX CLASSIFICATION**.
4. Now the tax customizing object can be executed to bring the customizing tax settings from SAP ERP to SAP CRM. Replicate tax customizing (SAP CRM) via the customizing adapter object `DNL_CUST_TAX`.
5. To check the customizing of data transfer for taxes (SAP CRM), execute Transaction `CRM_TAXCUST_VALIDATE`.

Monitoring the Replication Status

Within this step, you monitor the status of the customizing object load that helps you take necessary steps if the customizing load fails in SAP CRM. To do so, follow these steps:

1. In the SAP CRM menu, go to Transaction `R3AM1`.
2. Enter the required object, and click **EXECUTE**.

You should now have a good understanding of the steps required to set up the system and understand the key cutover steps. These steps are very important to

ensure that the data flow runs smoothly and that you've properly set up the middleware.

3.6 Summary

In this chapter, we discussed the data exchange among SAP CRM, SAP ERP, external systems, and SAP BusinessObjects BI. Understanding data flows between SAP CRM applications is vital for any SAP CRM consultant. This chapter also discussed the system setup steps. In the next chapter, we'll look at the structure and functions of a business transaction in SAP CRM.

Business transactions in SAP CRM are used to describe business processes and transactions. In this chapter, we'll offer a foundation for common business transactions in SAP CRM and transaction-related functions.

4 Business Transactions in SAP CRM

Any communication between an organization and its customers needs to be logged as a transaction in the SAP CRM system. We refer to these interactions and business processes as *business transactions*. Different kinds of scenarios within organizations drive these transactions. For example, some transactions require items to be delivered to the customers, while others may call for crediting customers.

Each of SAP CRM's core functions uses transactions to log interactions and run business processes based on organization-specific scenarios. In this chapter, we'll discuss the common transaction-related functions across many SAP CRM processes. To begin, we'll look at the structure of an SAP CRM business transaction, and identify key concepts used.

4.1 Structure and Concepts of a Business Transaction

This section explains the business transaction model and will help you understand some of the basic business transaction features, concepts, and functions. Let's begin by looking at the design and structure expected of a business transaction in SAP CRM.

4.1.1 Design and Structure

It's important to know the main aspects of business transactions. The design and structure, for example, help identify the role business transactions play in different business scenarios.

Figure 4.1 represents the structure of a business transaction that consists of a header and items. You can enter various items in the transaction wherein you can sell a product and also enter complaints or return items. As shown in Figure 4.1, there are two main structures at work here:

► **Header data**

The header data of the business transaction mainly consists of information about the business partner, text, status, actions, and so on. These functions are at the transaction level.

► **Item data**

The item data consist mainly of products. Most of the functionality of item data is controlled via an *item category*. These categories include text, status, actions, and more at the item level.

The screenshot displays the SAP CRM interface for creating a new standard order. The window title is 'Standard Order: New'. The top navigation bar includes 'Save', 'Cancel', 'New', 'Create Follow-Up', 'Trigger Output', and 'More'. The main content area is divided into two sections: 'Header data' and 'Item data'.

Header data section:

- General Data:** Type: Standard Order; Order ID; Sold-To Party; Sold-To Party Address; Contact; Employee Responsible: Chandrakant Agarwal; External Reference; Territory; Delivery Block: No Items Blocked for Delivery; Billing Block: Nothing Blocked; Rejection Reason.
- Processing Data:** Status: Open; Rejection Status: Nothing Rejected; Credit Status: Not Relevant; Output Blocked: .
- Dates:** Posting Date (Free): 04/18/2015; Reference Date; Request. Deliv. Date.
- Value:** Net Value: 0.00; Tax Amount: 0.00; Gross Value: 0.00.
- Notes:** A text area for entering notes.

Item data section:

- Items:** A table with columns: Actions, Item No., Product ID, Description, Qty, Unit, Net Value, Crcy, Delivery Status, Rejection Reason.

Figure 4.1 Business Transaction Header Data and Item Data

The header and item data business transaction structure is applicable for any business transactions in SAP CRM.

The business transactions in SAP CRM are often referred to as transaction types. *Transaction types* define the characteristics and attributes of a business transaction. For example, a transaction type can be a sales order or a service request. Transaction types determine how a transaction is processed and how different functions are determined, which helps in completing the full business functionality, such as profiles and procedures used to determine texts, business partners, statuses, and organization data.

Business transaction categories are defined by SAP and correspond to business object types in the Business Object Repository (BOR) (e.g., Sales [BUS200115], Service Process [BUS200116], and Business Activity [BUS200126]).

A business transaction category determines the business context in which a business transaction or item can be used, including the following:

- ▶ The maximum allowed structure for certain types of transactions.
- ▶ Secondary transaction categories with which the transaction category can be combined. For example, sales categories can be combined with service categories.
- ▶ The business transaction categories at the transaction level.
- ▶ The item object types for the business transaction category at the item category level.

Every business transaction is assigned to business transaction categories. You can assign one or more business transaction categories to the business transactions, but you can't just assign any business transaction categories to the transaction types. There can be one leading business transaction category followed by the subsequent business transaction category assigned to the transaction type.

Figure 4.2 shows a standard order consisting of SALES as a leading business transaction category, followed by the business activity.

The leading transaction category of a transaction type determines which customizing options are available, that is, what item categories can belong to the transaction type or which additional transaction categories can be assigned. The assigned transaction categories define which additional functionality is available for the transaction type (see Figure 4.3). For example, the categories define whether the transaction type used for sales processes can also be used for service processes.

Transaction Type: TA Standard Order

General

Description: Standard Order

Leading Transaction Category: BUS2000115 Sales

Status Object Type:

Contract Determin.: Search Auth. Partner:

Quot. Determin.:

Agreement Determin.:

Inactive:

Commitment Date: Commitment Date is Not Calculated

No Change Documents: Postprocess. from:

Part. Process. Permitted:

Template Type:

Territory Check

Trans. Classification:

Figure 4.2 Leading Business Transaction Category

Change View "Assignment of Business Transaction Categories": Overview

Transaction Type: TA Standard Order

Assignment of Business Transaction Categories

Transaction Category
BUS2000115 Sales
BUS2000126 Business Activity

Figure 4.3 Assignment of Business Transaction Categories

Figure 4.4 provides an example of a service order's business transaction categories, which consist of SALES and SERVICE PROCESS.

Item categories define the characteristics and attributes of a transaction item—for example, whether the transaction has a sales items, service material item, or any activity items—and determines how the item is processed. Item categories also have profiles for things such as text determination procedures, partner

determination procedures, status profiles, and more. These functions can be different at the transaction level versus the item category level. Each item category is assigned as an item object type, which defines the context in which the item can be used (e.g. sales or service processes). This context is defined by the transaction categories that are assigned to the item.

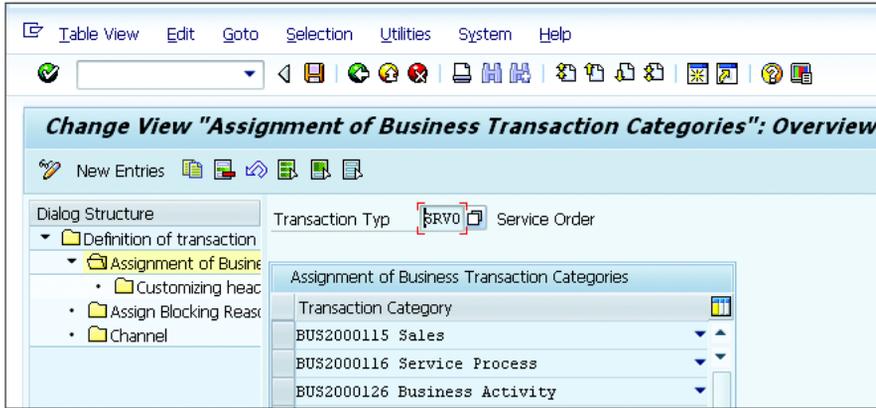


Figure 4.4 Service Order Business Transaction Categories

Figure 4.5 shows an example of an item object type assigned at the item category level.

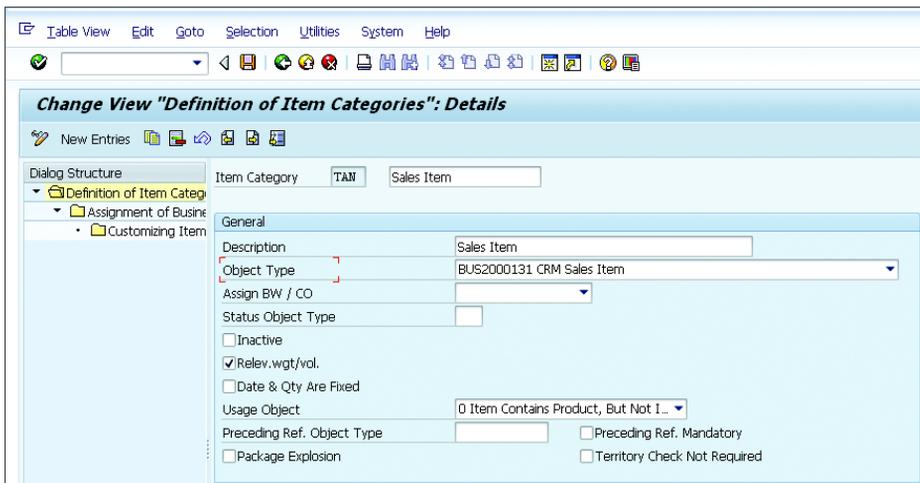


Figure 4.5 Item Category Object Type

An item category is assigned to one or more business transaction categories. Only specific combinations of business transaction categories are allowed, similar to the transaction type. In addition to the general settings for each item category, you need to make Customizing settings specifically for each business transaction category assigned to an item category.

Figure 4.6 shows business transaction categories assigned at the item category level.

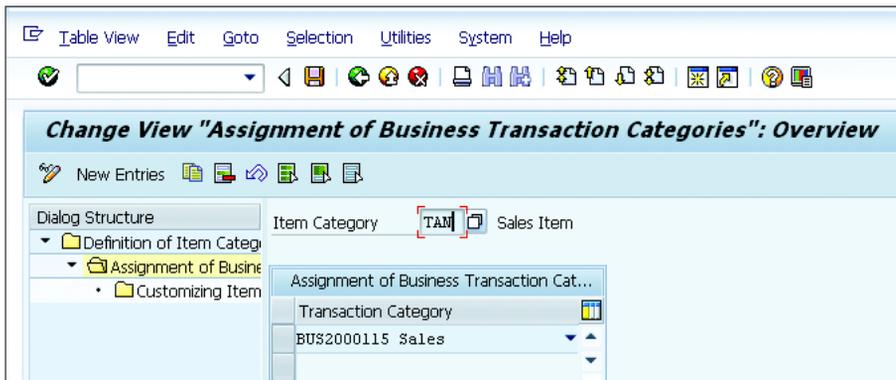


Figure 4.6 Assignment of Business Transaction Categories for Item Category

Figure 4.7 shows a diagram of the transaction types, leading business transaction, business transaction categories, item categories, item object types, and business transaction categories for the item categories.

Every transaction type has a leading business transaction category and a secondary transaction category. Only certain business transaction categories can be assigned to the business transaction. For example, transaction type TA has a leading business transaction category of BUS2000115 Sales, and secondary transaction category of BUS200126. Each of these transaction categories has a certain function and specific configuration that drives the business functionality.

Similarly, the item object type is assigned to the item category; for example, Sales Item BUS2000131 is assigned to item category TAN. The item category also has a business transaction category, and only certain business transaction categories can be assigned to the item category. The sales item category is assigned with the sales business transaction category BUS2000115 (see Figure 4.7).

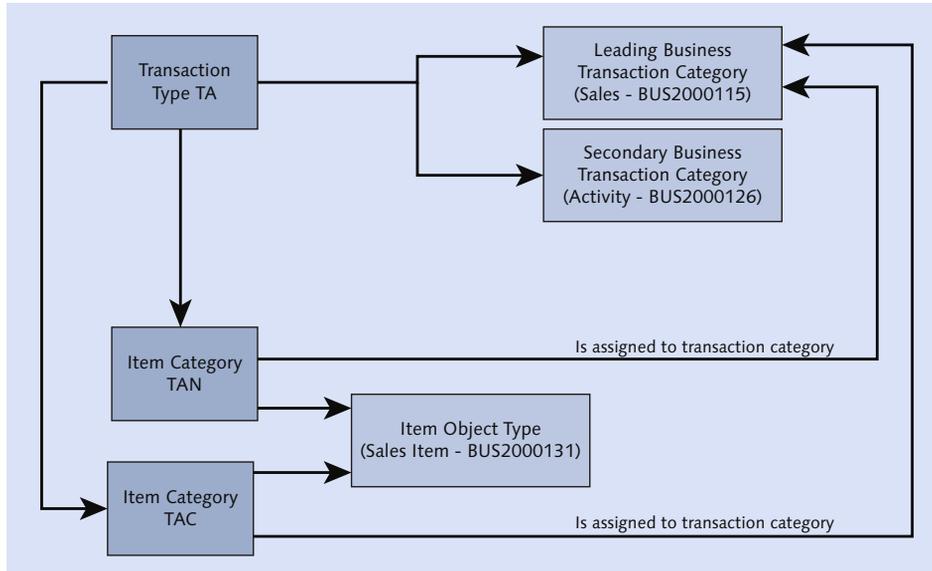


Figure 4.7 Business Transaction Category Assignment to the Transaction Type

The following lists the SAP configuration tables for the transaction type, secondary transaction category, item category, and transaction category for the item category:

► **Transaction type**

In table `CRMC_PROC_TYPE` (Define Transaction Type), the leading transaction category is also specified.

► **Secondary transaction category**

To assign the business transaction categories, use table `CRMC_PR_ASSIGN`.

► **Item category**

To define the item category, use table `CRMC_ITEM_TYPE`.

► **Transaction category for the item category**

To assign the business transaction categories, use table `CRMC_IT_ASSIGN_S`.

4.1.2 Business Functions

In this section, we'll look at the general functions of a business transaction that are implemented in most projects. Transaction types consist of basic functions that are used to process the business transactions. These basic functions include

partner processing, text management, pricing, availability checks, actions, date management, and credit management. These functions are discussed in detail in this chapter.

However, other business transaction features are also imperative when logging transactions within SAP CRM. The following sections look at these features in greater detail.

Product Entry

You can enter the product for a quotation and sales order via the product ID or product description. This is configured in the transaction type, as shown in [Figure 4.8](#).

The screenshot shows a dialog box titled "Product Determination" with the following options and fields:

- Enter GTIN
- Enter Partner Product
- Create Product Order Number
- Always Check Product ID
- Product Description/ID Search
- Profile for Altern. Identif.
- Product Substitution Proced.

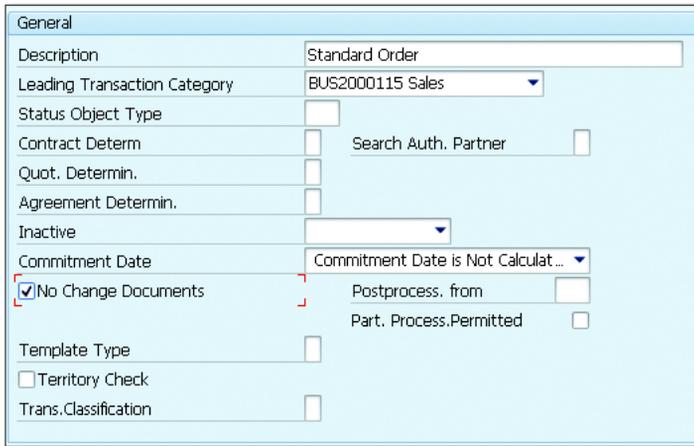
Figure 4.8 Product Description/ID Search within the Transaction Type

If you've enabled any other product search capabilities, for example, product determination by Global Trade Item Number (GTIN) along with the product description, the system uses your entry in the product ID field to first search for products by GTIN. If the system finds a match, it doesn't search by product description. However, if the system doesn't find a match, the system continues to search for product descriptions that match your entry.

Change History

The change history feature is one of the assignment blocks in a transaction. This feature provides details about the changes done on the transaction at the header and item level.

The change history feature can be activated during the transaction type configuration as shown in [Figure 4.9](#). If the NO CHANGE DOCUMENTS checkbox is activated, then no change logs will be captured for the sales document.



General	
Description	Standard Order
Leading Transaction Category	BUS2000115 Sales
Status Object Type	<input type="checkbox"/>
Contract Determ.	<input type="checkbox"/> Search Auth. Partner <input type="checkbox"/>
Quot. Determin.	<input type="checkbox"/>
Agreement Determin.	<input type="checkbox"/>
Inactive	<input type="checkbox"/>
Commitment Date	Commitment Date is Not Calculat...
<input checked="" type="checkbox"/> No Change Documents	Postprocess. from <input type="checkbox"/>
	Part. Process. Permitted <input type="checkbox"/>
Template Type	<input type="checkbox"/>
<input type="checkbox"/> Territory Check	
Trans. Classification	<input type="checkbox"/>

Figure 4.9 No Change Documents within the Transaction Type

Follow-Up Transactions

When you create a new transaction that relates to an existing transaction, you can create the new transaction as a follow-up transaction, thereby creating a relationship between the two transactions that provides additional contextual information to business users in the transaction history assignment block. This is controlled via copy control settings.

Copying Business Transactions

To save time creating a new transaction that isn't a follow-up to an existing transaction, you can copy an existing transaction that contains data relevant to your new transaction. No link is created between the existing and new business transactions. You can restrict the copying of the business transaction with the copy control Business Add-In (BAI).

Authorization Checks

An *authorization* is the authority to carry out a specific action in the SAP CRM system. Business transaction processing in SAP CRM is protected by an authorization check based on alternatives so that only authorized users can create, change, display, or delete a business transaction.

Authorization checks control the access to the user on the transaction types. You can control transaction and field level authorization checks for the users to accomplish your business requirements.

Incompleteness Check

An incompleteness check helps an organization configure the transaction if certain fields are required to be filled before saving. If those fields are empty, the transactions can't be saved, or they're saved with errors.

The incompleteness check is available to you in SAP CRM Enterprise, SAP CRM Internet Sales, Partner Channel Management, and the Interaction Center (IC). To achieve this functionality, you need to configure the incompleteness determination procedure and assign the procedure to the transaction type within the configuration path, CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • INCOMPLETENESS CHECK.

Figure 4.10 shows the procedure number, requested delivery date, and means of transport being added to the incompleteness procedure and marked it as the ERROR message. Within the RELEVANCE column, you can state that you want these fields mandatory at the header, item, or both.

Object Na...	Description	Field Name	Description	Relevance	Message C...	Trans.
SALES	Sales Data	PO_NUMBER_SOLD	Ext. Reference	A Header	E Error	INCL
SALES	Sales Data	REQ_DLV_DATE	Rqstd Deliv. Da...	Header and I...	E Error	INCL
SHIPPING	Shipping Data	TRANS_MEANS	Means of Trans.	Header and I...	E Error	INCL

Figure 4.10 Incompleteness Procedure

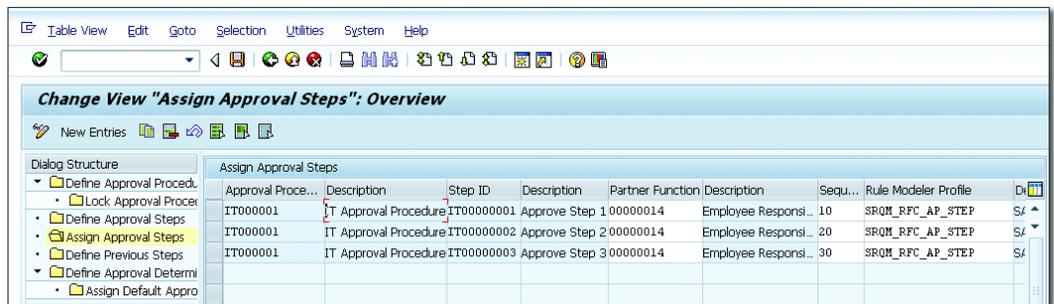
Approvals

An organization can use *approvals* by an individual or a group to approve certain business transactions. For example, a credit memo request needs an approval by a certain individual at a specific dollar amount. Unless the transaction isn't yet

approved, the credit can't be issued to the customer. There can be different levels of approval configured based on the dollar amount.

When you create an approval procedure, you can define the approval steps within the procedure, which is then assigned to the Rule Modeler profile or Service Manager profile. Based on the Rule Modeler profile, you can assign certain rules on the approval procedure; for example, based on the specific dollar amount, route the order to a specific group or person for approval. This will be based on your specific business scenario.

Figure 4.11 shows the approval step assigned to the Service Manager profile within the Customizing step CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • APPROVAL SETTINGS • DEFINE APPROVAL SETTINGS.



The screenshot shows the SAP CRM Customizing step 'Assign Approval Steps' in the 'Overview' view. The table below represents the data shown in the screenshot:

Approval Proce...	Description	Step ID	Description	Partner Function	Description	Sequ...	Rule Modeler Profile	Di...
IT000001	IT Approval Procedure	IT00000001	Approve Step 1	00000014	Employee Respons...	10	SRQM_RFC_AP_STEP	S4
IT000001	IT Approval Procedure	IT00000002	Approve Step 2	00000014	Employee Respons...	20	SRQM_RFC_AP_STEP	S4
IT000001	IT Approval Procedure	IT00000003	Approve Step 3	00000014	Employee Respons...	30	SRQM_RFC_AP_STEP	S4

Figure 4.11 Business Transaction Approval Procedure Assigned with the Rule Modeler

After the approval steps are defined and assigned to the Rule Modeler, the next step is to assign the approval procedure to your transaction type.

The following are some important approval features within an SAP CRM business transaction:

- ▶ You can use the approvals assignment block in the business transaction to monitor the approval steps and related information. For example, you can view which business partner approved each step and when the approval was performed.
- ▶ You can use the workflow to notify the appropriate person that he has an approval step to approve.
- ▶ You can define the steps that need to come before and after each approval step.

Data Exchange Scenarios in SAP CRM

Understanding how business transactions integrate with other systems is important when determining the data exchange approach to use. The integration impacts how the system is configured and whether the data exchange scenarios suit your business needs or not.

SAP CRM not only offers integration between different communication channels, (e.g. Internet, telephony, or mobile devices) but also offers process integration with backend functions for logistical follow-on processes (e.g., billing and shipping). This helps organizations keep customer transactions in sync between different systems and allows them access anytime.

The following is a list of data exchange scenarios:

- ▶ Data exchange for sales transactions from SAP CRM to SAP ERP
- ▶ Data exchange for sales transactions between SAP CRM on-premise and SAP CRM Mobile
- ▶ Data exchange for service orders between the SAP CRM server and SAP ERP/SAP Advanced Planning and Optimization (SAP APO)
- ▶ Data exchange for service confirmations between SAP CRM and SAP ERP
- ▶ Data exchange for complaints between SAP CRM and SAP ERP
- ▶ Data exchange for activities between the SAP CRM server and SAP CRM Mobile Sales
- ▶ Data exchange for sales contracts between SAP ERP and SAP CRM Enterprise
- ▶ Data exchange for sales contracts between SAP CRM Enterprise and SAP CRM Mobile
- ▶ Data exchange for opportunities between SAP CRM Enterprise and SAP CRM Mobile

This section is a good starting point to understand some key concepts around business transactions and how they are structured in SAP CRM. Before covering any features of business transactions, it's important to know about their elements and functions, as well as their linkage with respect to the business transaction categories and the item object type.

4.2 Partner Processing

Partner processing allows you to determine the correct partners in any SAP CRM business transaction based on business requirements and needs. Based on the business scenario and the organizational needs, the partner determination on the business transaction can be automatic or manual.

4.2.1 Business Functions

Business partners in transactions are derived during configuration that is a key element of partner processing. For our purposes, we'll be considering a business scenario to run through the concept and configuration involved in the partner determination of a business transaction.

In our business scenario, an organization wants to determine the ship-to, bill-to, payer, and employee responsible in a given transaction automatically based on the sold-to party. This can be achieved by configuring the access sequence for these partner functions and assigning it to the business transaction type and item category.

The following sections provide insight into different partner processing concepts and various business functions.

Partner Functions and Categories

Partner functions are partners that an organization does business with. This can be any partner function based on your business requirements. The most commonly used partner functions include sold-to, ship-to, bill-to, and payer. Every partner function defined has a function category hard-coded in the SAP CRM system. Partner function usage can be for an SAP CRM or B2B enterprise buyer. [Figure 4.12](#) shows a list of partner functions in SAP CRM.

To define partner functions and their relationships, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • PARTNER PROCESSING • DEFINE PARTNER FUNCTIONS. [Figure 4.12](#) shows the user interface setting that allows you to influence which partner function appears in individual partner fields.

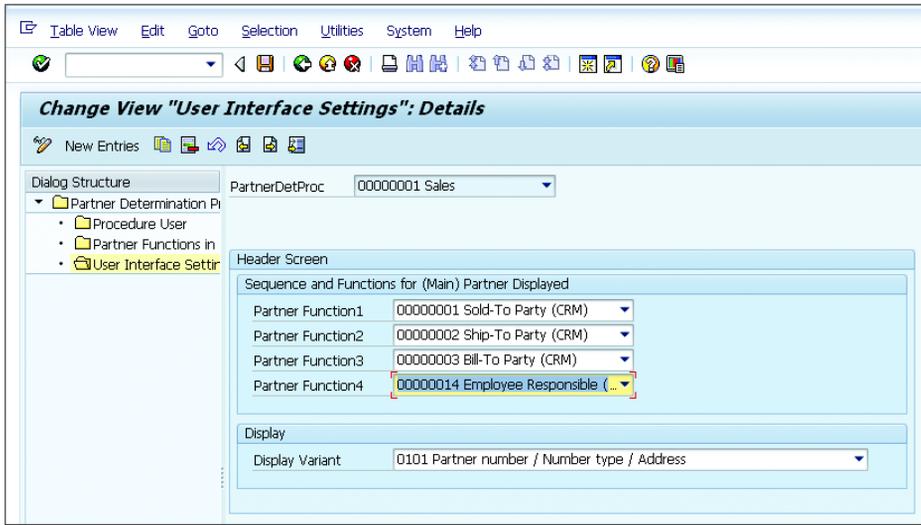


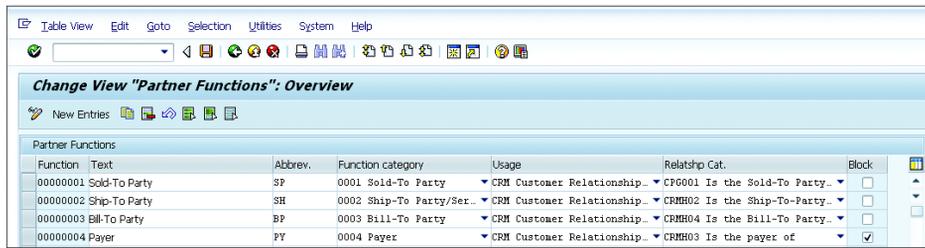
Figure 4.12 User Interface Settings for a Specific Partner Determination Procedure

A *partner relationship category* is assigned to each of the partner functions to determine the relationship of the business partner with other partners. For example, Company A has a contact person named Jim C. To maintain the relationship between Company A and Jim C, we want to maintain the partner relationship as a category. For this purpose, we could use a IS A CONTACT PERSON FOR THE CONTACT PERSON PARTNER function in the configuration. We then need to maintain the business partner master data for Company A with the relationship category HAS A CONTACT PERSON for Jim C. After these steps are completed, the transaction can determine the contact person Jim C as soon as Company A is entered as a SOLD-TO PARTY. This can be achieved via access sequence assignment on the CONTACT PERSON partner function.

A *block field* on a partner function configuration blocks the source partner to be determined when the partner determination takes place, if it's active. You can activate the block field feature by selecting the checkbox next to the corresponding partner function in the BLOCK column (see [Figure 4.13](#)).

As shown in [Figure 4.13](#), the partner function BILL-TO PARTY isn't marked as blocked, however, the PAYER partner function is. To understand how this would play out, let's say that customer C1 has a relationship maintained for SHIP-TO PARTY, BILL-TO PARTY, and PAYER with C2, C3, and C4, respectively.

When creating a sales order, the SOLD-TO PARTY "C1" is entered, triggering a partner determination for the SHIP-TO PARTY, BILL-TO PARTY, and PAYER. In this case, the BILL-TO PARTY determination will show a popup with partners C1 and C3 as options because the BLOCK checkbox isn't activated for BILL-TO PARTY. However, because the PAYER is marked as blocked, the partner payer C4 will default on the sales order without any popup for payer determination.



The screenshot shows the SAP 'Change View "Partner Functions": Overview' window. It contains a table with the following data:

Function	Text	Abbrev.	Function category	Usage	Relationship Cat.	Block
00000001	Sold-To Party	SP	0001 Sold-To Party	CRM Customer Relationship...	CPG001 Is the Sold-To Party...	<input type="checkbox"/>
00000002	Ship-To Party	SH	0002 Ship-To Party/Ser...	CRM Customer Relationship...	CRMH02 Is the Ship-To-Party...	<input type="checkbox"/>
00000003	Bill-To Party	BP	0003 Bill-To Party	CRM Customer Relationship...	CRMH04 Is the Bill-To Party...	<input type="checkbox"/>
00000004	Payer	PY	0004 Payer	CRM Customer Relationship...	CRMH03 Is the payer of	<input checked="" type="checkbox"/>

Figure 4.13 Define Partner Functions

Access Sequences

Access sequences are search tactics that help determine the partner on a business transaction based on the searches performed in a specific sequence. The partner determination of a particular sequence is assigned in the access sequence, which is assigned to the partner function.

Access sequences allow the system to carry out *partner determination*, the process by which the system automatically finds and enters partners in a business transaction. When you define a partner determination procedure, you can assign an access sequence to each partner function listed in the procedure. Then, when you create a transaction, the system knows how to search for partners to carry out these functions. If you don't assign an access sequence or the system can't find partners in the sources listed, then you enter the partner manually.

Figure 4.14 shows a 0005 access sequence consisting of sequences COM_PARTNER_A PRECEDING DOCUMENT, CRM_PARTNER_S BP RELATIONSHIP BY SALES ORG, CRM_PARTNER_C BUSINESS PARTNER RELATIONSHIP, and COM_PARTNER_C CURRENT PARTNER.

The sequence shown in Figure 4.14 is determined by the BATCH SEQ. and DIALOG SEQ. fields on the CHANGE VIEW "INDIVIDUAL ACCESSES": DETAILS page (see Figure 4.15).

The screenshot shows the 'Change View Individual Accesses: Overview' window. The 'Access sequence' is set to '0005 Preceding Document -> Business Partner Relationships: Sold-To Party -> Current Pa'. The table below lists the individual access sequences:

Batch Seq.	Dialog Seq.	Source	Reverse Determin...	Incorrect Source	Wait	Next Access	As Business Partner	Partner Function
10	10	COM_PARTNER_A Preceding Doc...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20	20	CRM_PARTNER_A BP Relationsh...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30	30	CRM_PARTNER_C Business Part...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
40	40	COM_PARTNER_C Current Partn...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure 4.14 Partner Function Access Sequence Overview

The screenshot shows the 'Change View Individual Accesses: Details' window. The 'Access sequence' is '0005 Preceding Document -> Business Partner Relationships: Sold-To Party -> Current Pa'. The 'Batch Seq.' is '10'. The 'Individual Accesses' section shows the following configuration:

- Dialog Seq.: 10
- Source: COM_PARTNER_A Preceding Document
- Allow Incorrect Source
- Alternative Follow Access
- Mapping/Restrictions (Optional: Search for Which Partner)
 - Mapping/Definition for Partner Being Searched

Figure 4.15 Access Sequence Details with the Source Assignment

As a business scenario, let's say that access sequence 0005 is assigned to the SHIP-TO PARTY partner function in the configuration. When creating a sales order, the SOLD-TO PARTY is entered, and the SHIP-TO PARTY determination takes place based on the access sequence.

First, the access sequence will check to see whether there is any preceding document. If it doesn't find the partner, then it will check the sold-to relationship by sales area; that is, if the sales area on the order doesn't match the sales area of the ship-to relationship, then it will jump to the next sequence, which is the business partner relationship. The business partner is independent of the sales area. If it

doesn't find the partner in the relationship, then the current partner is determined on the business transaction. The current partner is a SOLD-TO PARTY.

Within the access sequence, you can assigned the FUNCT. CATEG. as shown in [Figure 4.16](#), which uses the source partner to determine the other partner function in the business transaction.

Details on the Source	
Partner Functio	<input type="text"/>
Funct.Categ.	0001 Sold-To Party
Usage	CRM Customer Relationship Managem.
Other Source / Attribute in Doc.	<input type="text"/>

Figure 4.16 Function Category within the Access Sequence

The following are some of the sources that SAP has provided within the access sequence to determine the partner based on your business needs:

- ▶ PRECEDING DOCUMENT
- ▶ BUSINESS PARTNER RELATIONSHIPS
- ▶ BUSINESS PARTNER RELATIONSHIPS BY SALES ORGANIZATION
- ▶ ORGANIZATIONAL DATA
- ▶ PRICING HIERARCHY
- ▶ CURRENT PARTNER
- ▶ BUSINESS PARTNER ASSIGNED TO THE USER
- ▶ BUSINESS ADD-INS (BADIs)
- ▶ OWN PRODUCTS

It's important to assign the access sequence to the partner function within the partner determination procedure. If the access sequence isn't assigned to the correct partner function, then the partners aren't determined automatically in the transaction.

Partner Determination Procedures

Partner determination procedures provide a set of rules for how the system works with business partners during transaction processing. They bring together partner functions and access sequences, and they include additional information.

Partner determination procedures are made up of three levels (see [Figure 4.17](#)):

- ▶ **PROCEDURE USER**
Identifies the transaction categories and item object types to which the procedure applies.
- ▶ **PARTNER FUNCTION IN PROCEDURE**
Lists the partner functions involved and specific settings for each function.
- ▶ **USER INTERFACE SETTINGS**
Allows you to influence which partner function appears in individual partner fields.

You can define a partner determination procedure by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • PARTNER PROCESSING • DEFINE PARTNER DETERMINATION PROCEDURE.

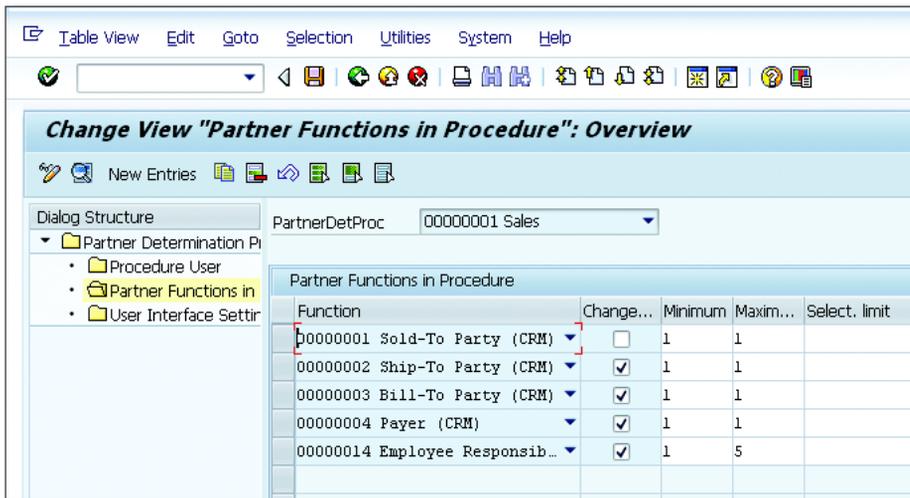


Figure 4.17 Partner Function in the Transaction

In this example, access sequence 0005 can be assigned to the SHIP-TO PARTY, BILL-TO PARTY, and PAYER partner functions. EMPLOYEE RESPONSIBLE is assigned with 0008 access sequence, which determines the employee responsible based on the business partner assigned to the user.

After you've added the partner function to the partner determination procedure, select the SHIP-TO PARTY partner function, and go to the details to review and assign the access sequence (see [Figure 4.18](#)).

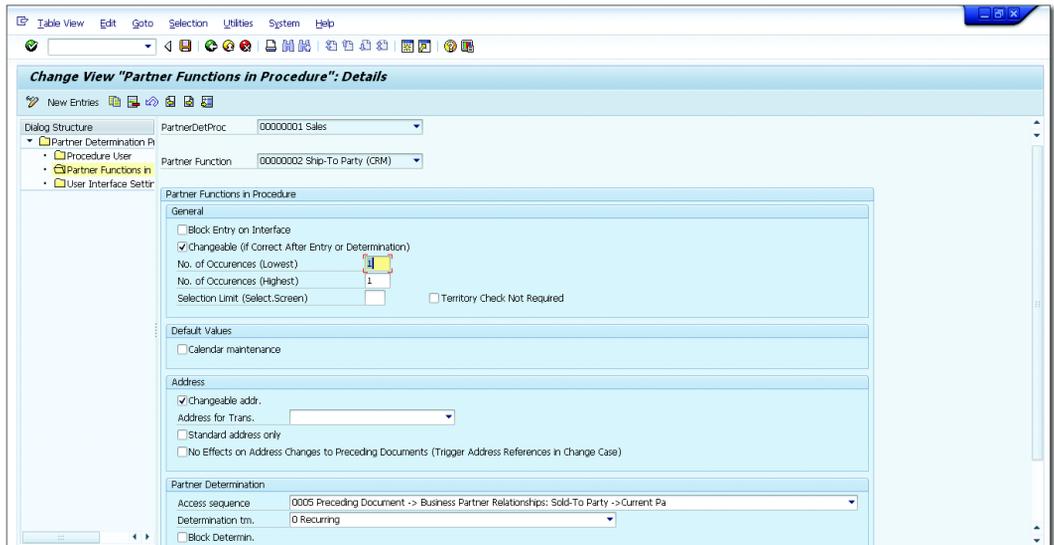


Figure 4.18 Assigning the Access Sequence to the Partner Function

As shown in [Figure 4.18](#) and listed partially here, there are a number of settings that can be made to configure and assign the access sequence for the partner determination procedure:

- ▶ **BLOCK ENTRY ON INTERFACE**
This checkbox enables you to restrict the entry of partners in the business transaction manually. If you want to determine the partner determination automatically, then activate this checkbox.
- ▶ **CHANGEABLE (IF CORRECT AFTER ENTRY OR DETERMINATION)**
If you want the partner to be changed any time after the business transaction is saved, then activate the changeable functionality on the partner function.
- ▶ **NO. OF OCCURRENCES LOWEST/HIGHEST**
If you want at least one partner to be added to the partner function, then enter "1" in the NO. OF OCCURRENCES (LOWEST) field. This will make the partner function mandatory in the business transaction. For the highest number of occurrences, you can enter either "1" or any number based on the number of times

you need to enter the same partner function in the business transaction. For example, if you have multiple groups responsible on the complaints transaction, then add that number to the NO. OF OCCURRENCES (HIGHEST) field.

► CALENDAR MAINTENANCE

If the partner function is required to have the activities marked in its calendar, then activate the CALENDAR MAINTENANCE checkbox on the partner determination configuration for the partner function. For example, the EMPLOYEE RESPONSIBLE function determined on the activity transaction should have this activity marked on his calendar; activating this option will show you the activities on the employee calendar.

► CHANGEABLE ADDR.

If you want to change the address on a business transaction for a particular partner function, then activate this checkbox.

► BLOCK DETERMIN.

This functionality blocks the automatic partner determination on the business transaction. If this is active, then you need to add the business partner manually in the business transaction. The access sequence won't determine the partners automatically.

The last step in configuring the partner determination procedure is the assignment of the configured partner determination procedure to the transaction type and item category. If you have different partners to be determined at the item from the header level, then you can configure the partner determination procedure separately for the item categories. However, if the partners are the same at the header and item level, then you don't need to configure the access sequence separately at the item level. The partners will copy from the header to the item level for the business transaction automatically.

To assign a partner determination procedure to a transaction type, follow the path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES.

After the partner determination procedure is created, the next step in the configuration is to assign the partner determination procedure to the transaction type, as shown in [Figure 4.19](#).

When the sales transaction is created, the partners (i.e., ship-to, bill-to, and payer) are determined based on the configuration.

The screenshot shows the 'Change View "Definition of transaction types": Details' dialog box. The 'Partner Determin. Proc.' field is highlighted with a red box and contains the value '00000001'. The 'Status Profile' field contains 'CRMORDER'. The 'Partner Function ORG' field is a dropdown menu showing '0001 Sold-To Party'. Other fields include 'Text Det. Procedure' (ORDER001), 'Sales Order', 'Org. Data Prof.' (000000000005), 'Date Profile' (000000000004), and 'Action Profile' (ORDER_MESSAGES).

Figure 4.19 Assigning the Partner Determination Procedure to the Transaction Type

4.2.2 Master Data and Organization Data

Many industries and multiple business scenarios implement partner processing using business partner master data and organization data. Business partner master data is a crucial source of information for partner processing, and relationships are the most important aspect of this information.

Relationships exist in two forms: *general relationships* and *sales area-specific relationships*. A general relationship doesn't include any sales area data, whereas a sales area-specific relationship includes data on one or more sales areas.

Organizational units, employees, and users from your company's organization model can act as partners in transactions. Organization data is a crucial source of information for partner determination. To use organization data in partner determination, the system uses the determination rules defined in Organizational Management. Therefore, when you specify organization data as the source in access sequences in Customizing for partner processing, you must enter a determination rule.

All business transactions have a parties-involved assignment block that consists of all partner functions involved in the transaction of an organization to the customer. You can overwrite the address of the business partner, for example. In some cases, a business may require overwriting the ship-to address. This won't change the master data of the ship-to, but the downstream transaction, for example, delivery documents, will get the address from the order shipped-to party that was changed by the customer service representative.

Partner Redetermination

The partner redetermination functionality is only available for a certain business object type, which is listed in table `COMS_PARTNER_DET`. Prerequisites for partner redetermination should be in place. Activate BAdI `ES_CRM_PARTNER_REDETERMIN`, and set user parameter `CRM_REDETERMINATION` with the X parameter value. `COM_PARTNER_BAdI` can be implemented to meet your specific requirements.

To download the partner functions from SAP ERP (SAP ECC) to SAP CRM, you need to map the SAP ERP and SAP CRM partner functions in `DISTRIBUTION OF PARTNER` from SAP ERP to SAP CRM. You can do this by following the menu path, `SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • PARTNER PROCESSING • DATA TRANSFER • DISTRIBUTION OF PARTNER FUNCTIONS FROM SAP ECC INTO CRM`.

We've gone through the concepts of partner processing and how it's determined in the business transaction with one of the business scenarios mentioned. We've looked at key partner processing concepts and functions using business partner master data and setting up relationships with and without a sales area. We also discussed using organization data where the users or employees are determined based on the organization model. Next, we'll delve into the product determination process of business transactions.

4.3 Product Determination

Product determination helps an organization determine the products on a sales transaction. In many cases, customers have their own product numbers that they can send via electronic data interchange (EDI), or they can ask customer service to enter the numbers when ordering via phone. In either of these cases, a system should be in place to determine the SAP product codes and place an order without consuming any time to perform the search manually.

This can be accomplished via either alternative product IDs or product substitution during sales order processing. You can enter various keys and descriptions for products, and then the system determines the required product. The system can also automatically replace one product with another. After you configure the alternative product ID or product substitution procedure, you assign the same to the sales transaction type.

The sections that follow look at both the alternative product ID and product substitution concepts.

4.3.1 Alternative Product Identification

The *alternative produce ID* helps to identify SAP products when creating sales business transactions. This can be in the form of a customer product ID, product ID of the vendor, alternative ID (own attribute), and GTIN.

You can enter the following product identifiers as alternative product IDs:

- ▶ Product ID from SAP CRM system
- ▶ Product order number (PON)
- ▶ Global Trade Item Number (GTIN)
- ▶ Partner product number
- ▶ Other alternative product IDs of your choice

Alternative IDs allow you to use an identification that conforms to industry standards. You decide per transaction type in Customizing whether product IDs can be entered in the document and, if so, which ones are valid. If the system finds multiple possible products, you can select the one you want.

To better understand how alternative product IDs work, let's look at an example. Let's say you want to identify or search for a product when creating a sales order via an alternative product ID. First, the new set type and attribute on the product master needs to be created for this functionality. You can then perform the search using the values in the attribute on the product master data and add the product on the order.

You can also search the products manually search or automatically based on the product determination checks activated for partner product search, search via GTIN, product description ID search, alternative ID search, and so on. The following steps show how to search a product via the alternative product ID:

1. You first need to create a new attribute. For our example, we'll create the attribute ZALTATTR using Transaction COMM_ATTRSET (see [Figure 4.20](#)).

Attribute: Change ZALTATTR

Attribute ZALTATTR ◇ 0

Short Text Alternative Id

Definition Value Range

Characteristics

Attribute Type CHAR Character Str... Select Value Table

Attribute Length 30 Value Table Multiple Values Poss.

Lowercase

Descriptions

Language	Attribute Descr.
EN English	Alternative Id

Figure 4.20 Alternative ID Attribute

2. Create the set type ZALTATTR01 by selecting MATERIAL from the PRODUCT TYPE SELECTION list (see [Figure 4.21](#)). If you want set type ZALTATTR0 to be an independent sales area, then select 00 ORGANIZATION-INDEPENDENT from the ORG. DEPENDENCY dropdown list, as shown in [Figure 4.21](#).

Set Type: Create ZALTATTR01

Set Type ZALTATTR01 ◇ 0

Description Product Alt Id

Definition Assigned Attributes

Product Type Selection

Product Type Service Financing Warranty

Material

Characteristics

Org. Dependency 00 Organization-Independent

Multiple Use Template Enabled Object Family CDB Table

Descriptions

Language	Set Type Description
EN English	Product Alt Id

Figure 4.21 Alternative ID Set Type

3. Assign the attribute to the set type (see [Figure 4.22](#)).

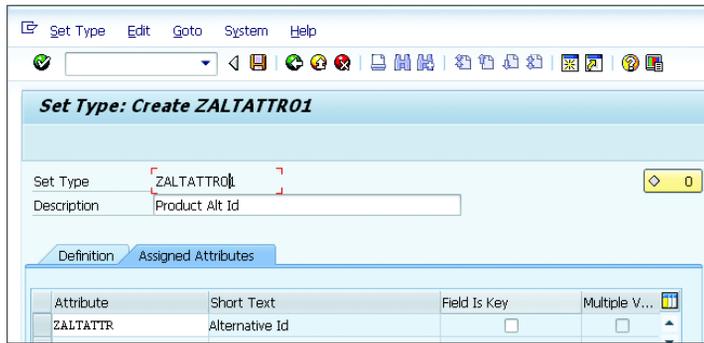


Figure 4.22 Assigning Attribute to the Set Type

If you want to create the data source for the attribute, then mark the attribute as BW RELEVANT in the assigned attribute screen under the SET TYPE.

- To create new ID types, access IMG • CROSS-APPLICATION COMPONENTS • SAP PRODUCT • ALTERNATIVE PRODUCT IDs • DEFINE ID TYPES. Assign the field and the table of the set type to the ID types. The ID type is used in the product maintenance; that is, it generates the class with the search methods and a function group with the function module (FM) and screens as shown in [Figure 4.23](#). If you want to implement any additional methods, you can use the same class and add the functionality.

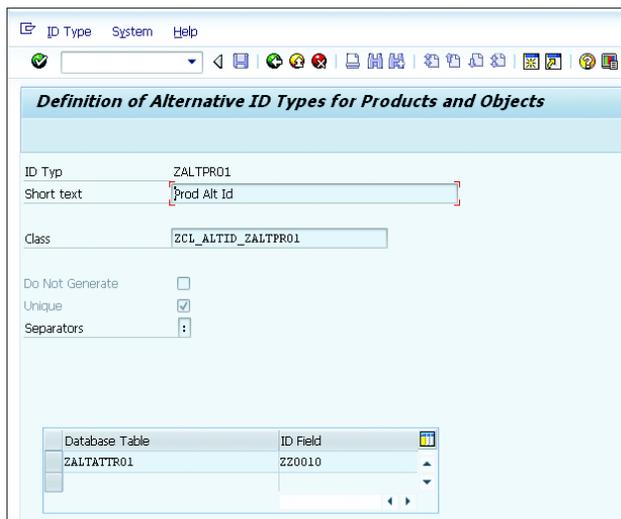


Figure 4.23 Alternative ID Type

- Maintain profiles for alternative IDs by specifying the name and description of the profile, as well as whether the search for products using alternative IDs should be stopped after the first alternative ID type in the profile is found (STOP SEARCH AFTER FIRST HIT). This is shown in the STOP column in [Figure 4.24](#).



Figure 4.24 Alternative ID Profile

- In the detailed view (order of ID types), you can specify which ID types are used in what order when searching with an ID profile. These can be ID types delivered by SAP or customer-defined ID types. Access CROSS-APPLICATION COMPONENTS • SAP PRODUCT • ALTERNATIVE PRODUCT IDS • DEFINE PROFILES. Within this configuration, you can list the product search sequence in an order based on your business needs. [Figure 4.25](#) shows the configuration where the ID type sequence is maintained, which provides the functionality to search the product with different options (i.e., product search via GTIN, CUSTOMER_ID, PRODUCT_ID, and custom search ZALTPR01).

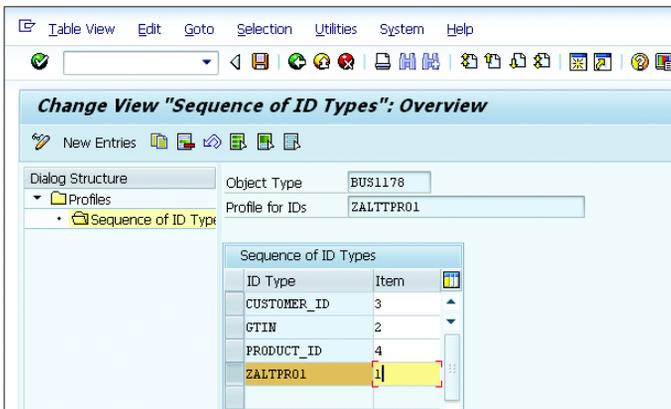


Figure 4.25 Sequence of ID Types

7. Assign an alternative ID to the transaction type. When an alternative ID profile has been assigned to the relevant transaction type, alternative IDs can be used to search for products in the sales order. In Customizing for transaction types, choose CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES (see [Figure 4.26](#)).

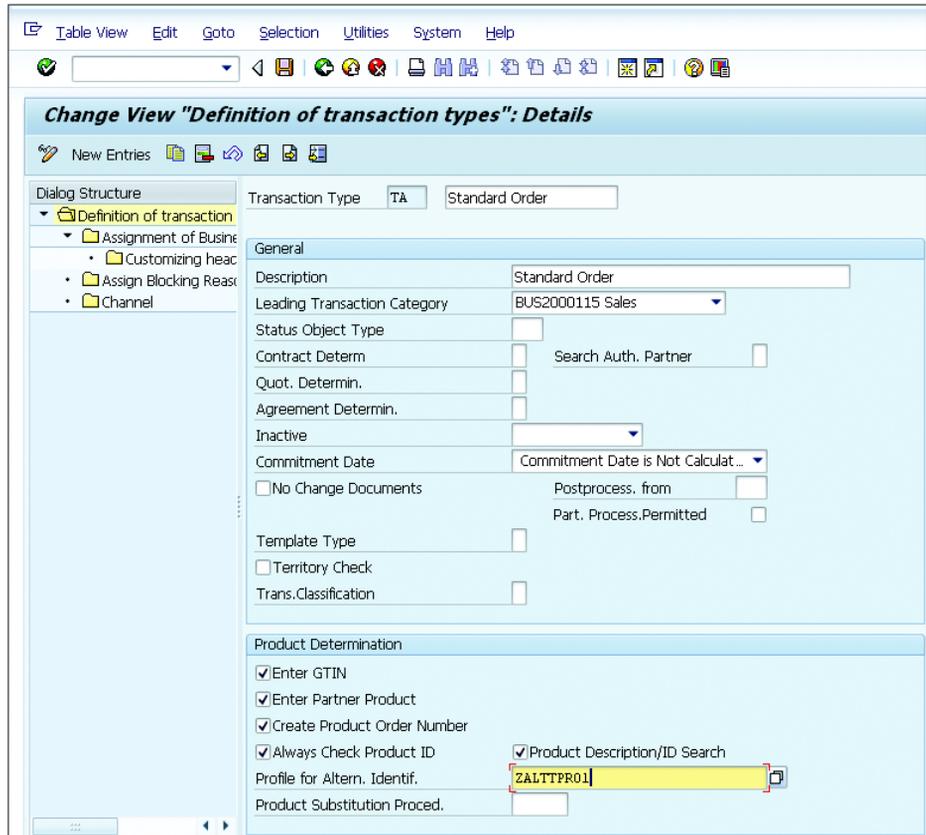


Figure 4.26 Assigning an Alternative ID Profile to the Transaction Type

8. Under the PRODUCT DETERMINATION section in [Figure 4.26](#), you'll find the following options:
- ▶ **ENTER GTIN:** If you activate this checkbox on the transaction type, then the transaction is activated to find the product based on the GTIN of the product.

- ▶ **ENTER PARTNER PRODUCT:** If you activate this checkbox, then the partner product number can be entered in the transaction type, and the system will find the product based on the partner product.
- ▶ **CREATE PRODUCT ORDER NUMBER:** If you want to enter product order numbers for a business transaction with the current transaction type, select this checkbox. The product entered is then interpreted as a product order number (PON). If the PON can't be analyzed correctly, the product that is entered is automatically interpreted as the product ID.
- ▶ **PRODUCT DESCRIPTION/ID SEARCH:** This activates the search of the product ID when the description is entered in the PRODUCT ID field. The product determination triggers when the search by product description is successful.
- ▶ **PROFILE FOR ALTERN. IDENTIF.:** Selecting this checkbox helps determine how product determination performs on the business transaction. If the alternative ID profile is set here, you can search the product via alternative ID.
- ▶ **PRODUCT SUBSTITUTION PROCED.:** Selecting this checkbox helps to determine the product that needs to be substituted in the event of the main item being discontinued or for any other reason.

If you've enabled the product determination by GTIN and by product description, the system uses your entry in the PRODUCT ID field to first search for products by GTIN. If the system finds a match, the system doesn't search by product description. However, if the system doesn't find a match, the system continues to search for product descriptions that match your entry.

Field Overrides

Entering a profile for alternative product IDs overrides the following entries in the Customizing fields for product determination:

- ▶ ENTER GTIN
- ▶ ENTER PARTNER PRODUCT
- ▶ CREATE PRODUCT ORDER NUMBER
- ▶ ALWAYS CHECK PRODUCT ID

9. Assign the alternative ID set type to the existing product category or create a new product category. [Figure 4.27](#) shows the newly created category MAT_ALTI created via Transaction COMM_HIERARCHY. The ALTERNATIVE ID TYPE is assigned to the category, as shown in [Figure 4.28](#).

The screenshot shows the 'Category Data' form for Category ID 'MAT_ALTI'. The 'Alternative ID Type' field is highlighted with a red box and contains the value 'ZALTPRO1 Prod ...'. Other fields include 'Product Type' (01 Material), 'Object Family', 'Person Responsible', and various maintenance checkboxes like 'Can Maintain Documents' and 'Can Maint. Conditions'.

Figure 4.27 Alternative ID Type Assigned to the Category MAT_ALTI

The screenshot shows the 'Assigned Set Types' table in the SAP Category Data form. The table lists various set types assigned to the category, with 'ZALTATTR01' highlighted in yellow. The table has columns for Set Type, Description, Inherited, Position, View ID, View Description, and Termination.

Set Type	Description	Inherited	Position	View ID	View Description	Termination
COMM_PR_MAT	Basic Data for ...	<input checked="" type="checkbox"/>	10	MATERI...	Material	
COMM_PR_UNIT	Units of Measure	<input checked="" type="checkbox"/>	20	MATERI...	Material	
COMM_PR_GTIN	Global Trade It...	<input checked="" type="checkbox"/>	30	MATERI...	Material	
COMM_PR_LGTEXT1	Basic Texts	<input checked="" type="checkbox"/>	40	MATERI...	Material	
ZALTATTR01	Product Alt Id	<input type="checkbox"/>	10	BASIC	General	
COMM_PR_SHTTEXT	Descriptions	<input checked="" type="checkbox"/>	30	BASIC	General	
CRMM_PR_TAX	Product Taxes	<input checked="" type="checkbox"/>	50	BASIC	General	

Figure 4.28 Assigning the Alternative ID Set Type to the Category

10. Create a UI configuration for the alternative ID type by accessing Transaction CRMM_UIU_PROD_ALTID (Create UI Configuration for ID Type). Enter the ID TYPE created, and select CREATE CONFIGURATION under the ACTION section (see [Figure 4.29](#)). Execute the transaction to create the alternative ID set type on the product WebUI component.

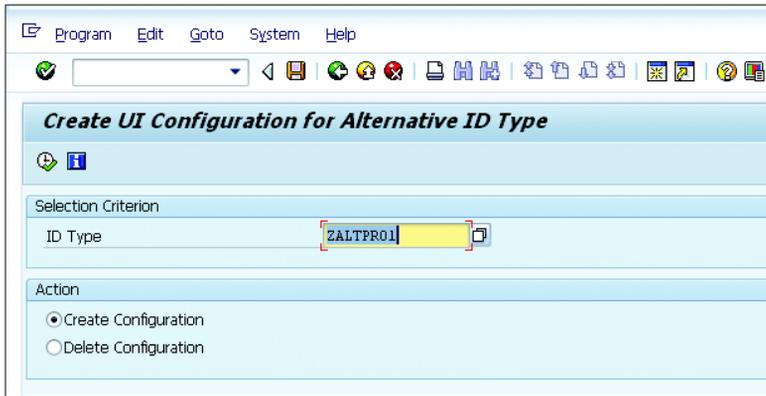


Figure 4.29 WebUI Configuration for the ID Type

11. Verify Transaction COMMPR01 to check the new set type added to the product category, as shown in [Figure 4.30](#).

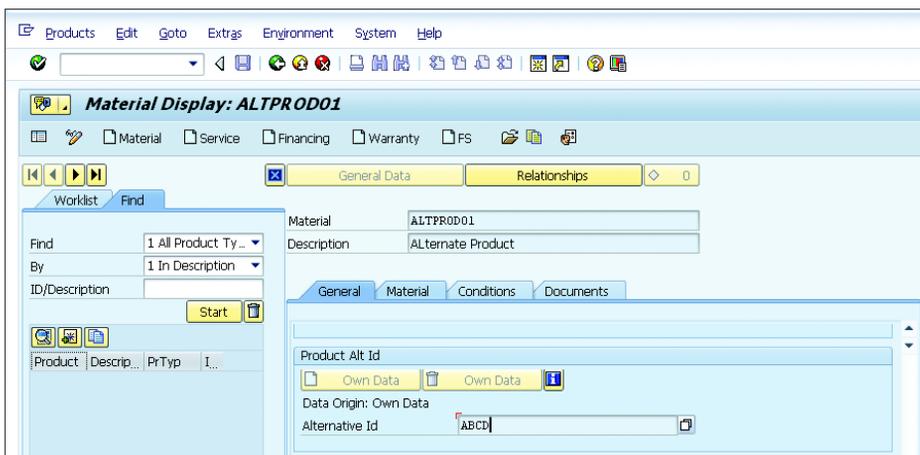


Figure 4.30 Product Master with the Product Alternative ID Set Type

The WebUI is now activated for the alternative ID ([Figure 4.31](#)).

After the preceding configuration is completed, you can then perform the search using the values in the attribute on the product master data, add the product on the order manually, or search the product automatically based on the product determination checks activated for partner product search, search via GTIN, product description ID search, alternative ID search, and so on.

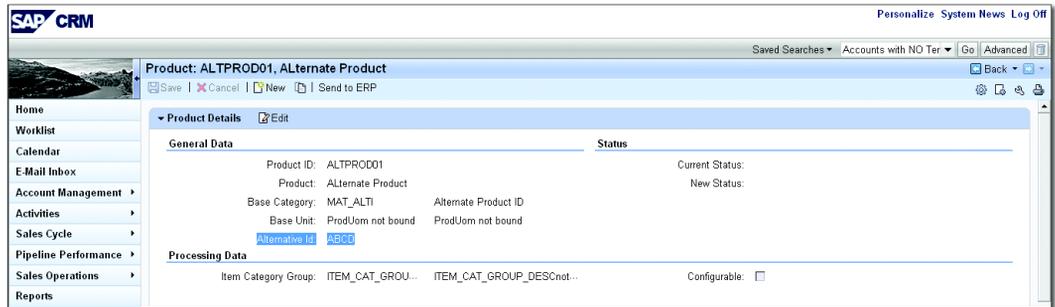


Figure 4.31 Product Master WebUI Showing the Alternative ID

4.3.2 Product Substitution

The SAP CRM system can automatically replace one product with another within an order entry. If there are any seasonal demands for a product, where your organization requires the product to be substituted, then using this functionality will help overcome any product substitution obstacles.

The functionality is available in IC, SAP E-Commerce, and Channel Management. Product substitution is driven from the reason code as the system finds several possible products; you can then select the one that is most suitable.

Product Availability

Product substitution isn't carried out based on product availability. This means that if a product isn't available, it won't be substituted with one that is available. If you want this to happen, use the rule-based availability check in SAP APO.

For our business scenario, let's say you want to substitute the product for a limited period of time because of the seasonal factor and want to replace the product ordered. The master data for product substitution resides in SAP ERP as a part of the SAP ERP material determination record and downloaded as the condition records into SAP CRM. When the order is created in SAP CRM, the product is substituted based on the reason code.

To substitute the product, follow these steps:

1. Initiate the download of the substitution reason from SAP ERP to SAP CRM via the Customizing condition object DNL_CUST_PDD. This can be done with the initial download via Transaction R3AS.

2. Download DNL_CUST_CNDALL to bring all condition tables from SAP ERP to SAP CRM, including the material determination tables from SAP ERP. In this example, let's consider Z003 as one of the access sequences that is present in SAP ERP and loaded to SAP CRM. [Figure 4.32](#) shows that the SAP CRM access sequence is downloaded from SAP ERP.

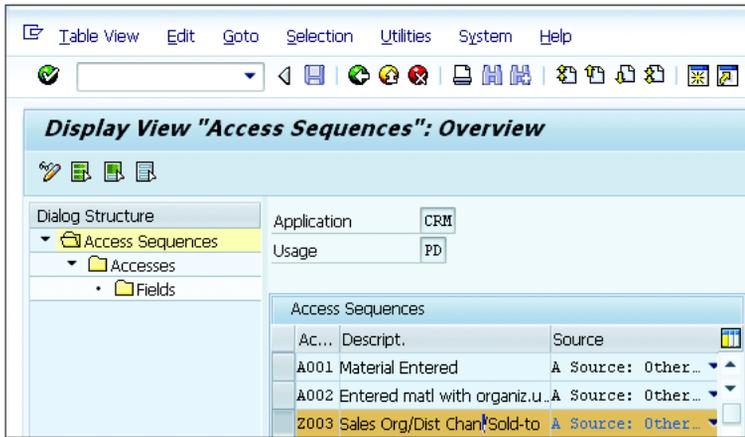


Figure 4.32 SAP CRM Access Sequence Downloaded from SAP ERP

3. Table CUS903 is assigned to the access sequence Z003, which is downloaded from SAP ERP to SAP CRM, as shown in [Figure 4.33](#).

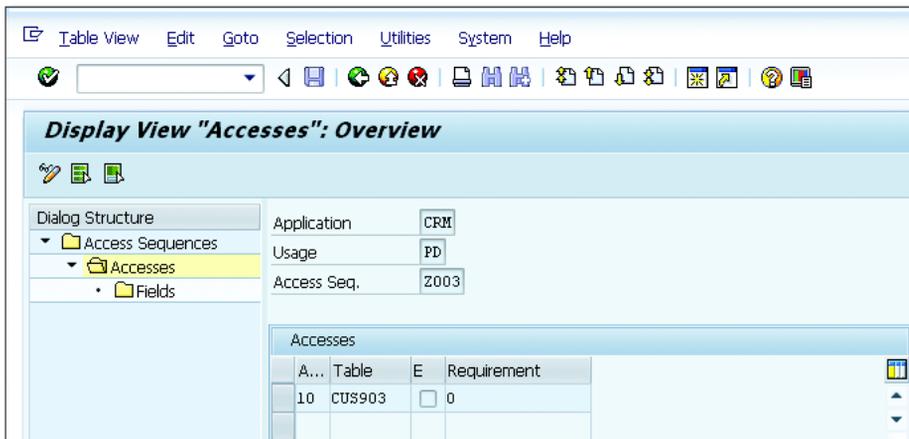


Figure 4.33 Table Assigned to the Access Sequence

4. Condition types are downloaded from SAP ERP, as shown in [Figure 4.34](#). The condition type key in this case is Z003, which is the same as the access sequence.

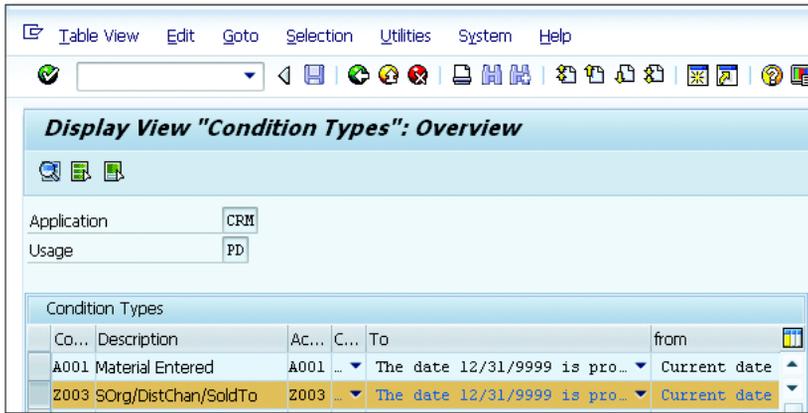


Figure 4.34 Condition Type Downloaded from SAP ERP to SAP CRM

5. The determination procedure comes with the Customizing object. SAP ERP represents the A SOURCE: OTHER SYSTEM option represents SAP ERP, as shown in [Figure 4.35](#). [Figure 4.36](#) shows the elements that must then be configured for the determination procedure.

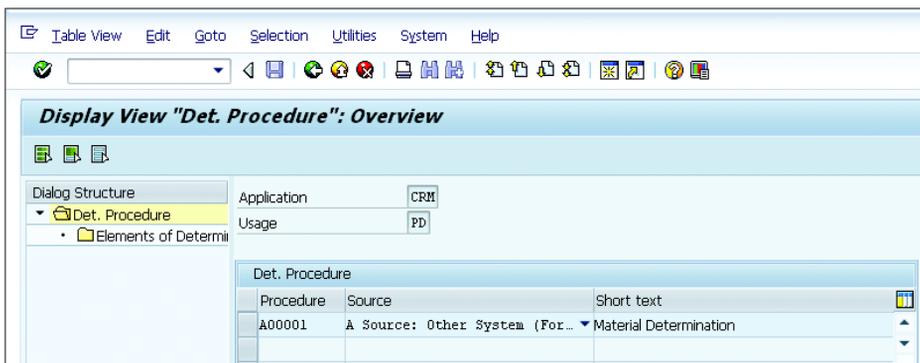


Figure 4.35 Material Determination Procedure

6. Assign the product determination procedure to the transaction type (see [Figure 4.37](#)) by following the customizing path, CUSTOMER RELATIONSHIP MANAGEMENT •

TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. The transaction will now determine the alternative products based on the rules configured.

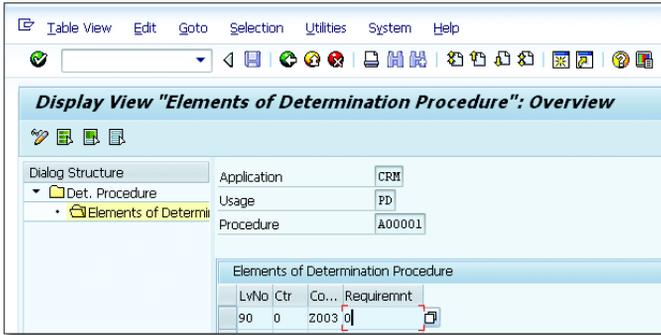


Figure 4.36 Condition Type within the Determination Procedure

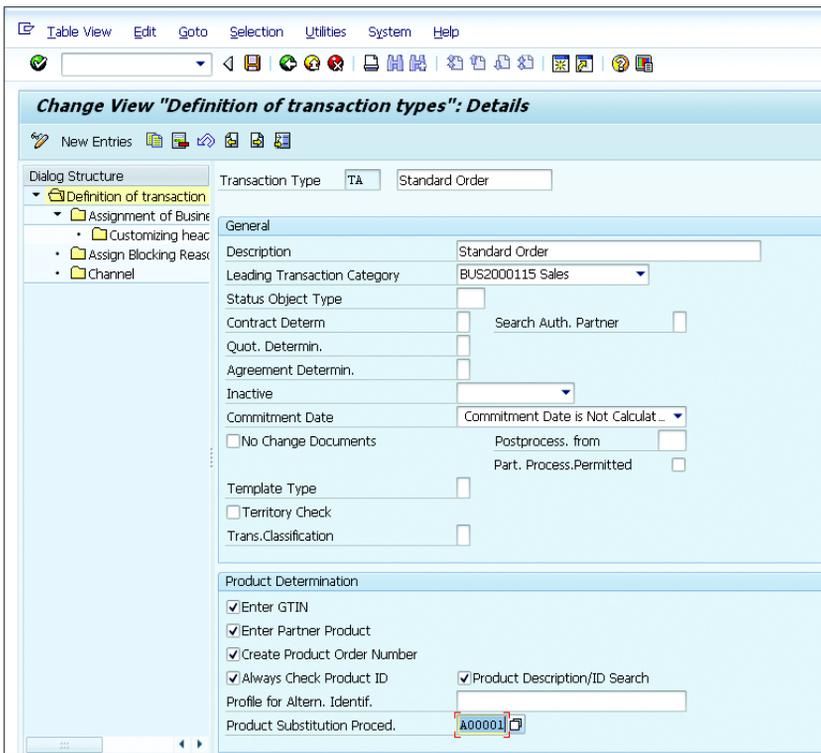


Figure 4.37 Assigning the Product Substitution Procedure to the Transaction Type

7. Create the condition table DNL_COND_A903, as shown in [Figure 4.38](#), using Transaction R3AC5.

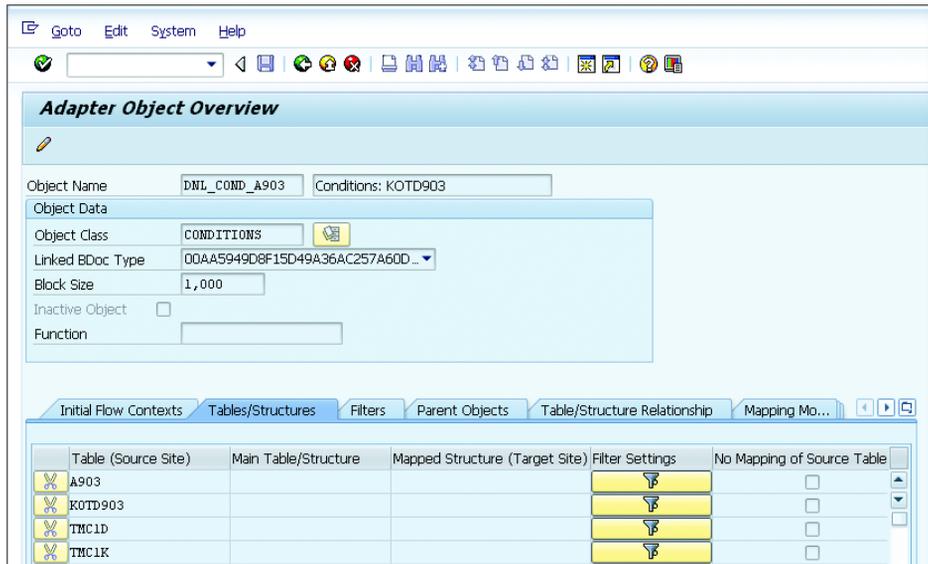


Figure 4.38 Tables Listed in the Condition Object DNL_COND_A903

8. Run the condition table object to populate the table values from SAP ERP to SAP CRM. This will bring all condition records for table DNL_COND_A903 from SAP ERP to SAP CRM (see [Figure 4.39](#)).

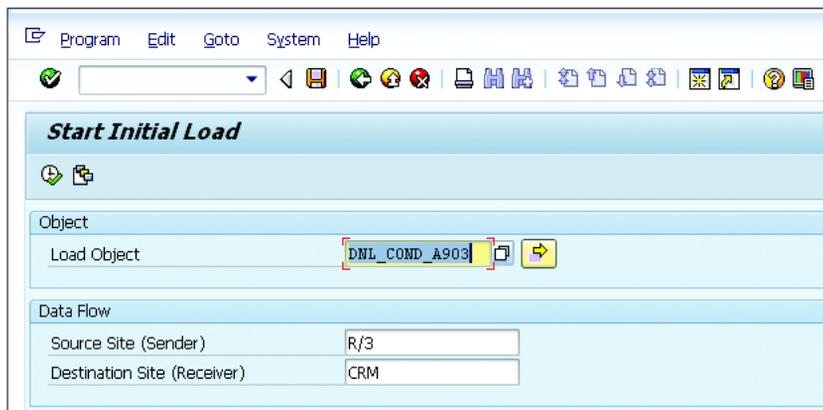


Figure 4.39 Initial Load for the Condition Records from SAP ERP to SAP CRM

9. Create the maintenance group or add the condition type and condition table to the USAGE PD, as shown in [Figure 4.40](#). This will activate the condition maintenance screen in SAP CRM via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • CONDITIONS AND CONDITION TECHNIQUE • CONDITION TECHNIQUE: BASICS • CREATE MAINTENANCE GROUP.



Figure 4.40 Create Condition Maintenance to View the Condition Record in SAP CRM

10. Verify the condition record load from SAP ERP (material determination) to SAP CRM (product substitution), and access Transaction /SAPCND/GCM (Maintain Conditions) (see [Figure 4.41](#)).

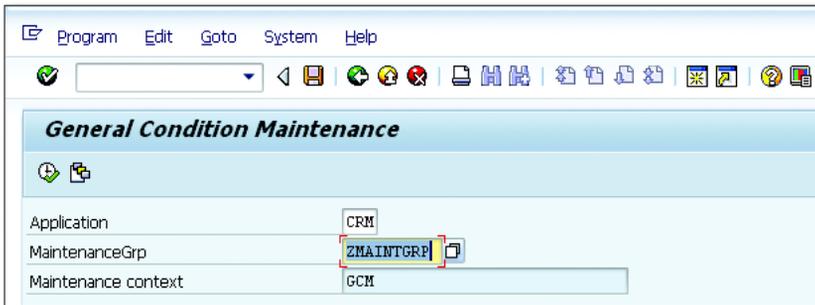


Figure 4.41 General Condition Maintenance Screen

11. Search for the CONDITION TYPE Z003 and the condition records assigned to it (see [Figure 4.42](#)). As soon as you click the EXECUTE icon, you'll see the list of condition records loaded from SAP ERP to SAP CRM.

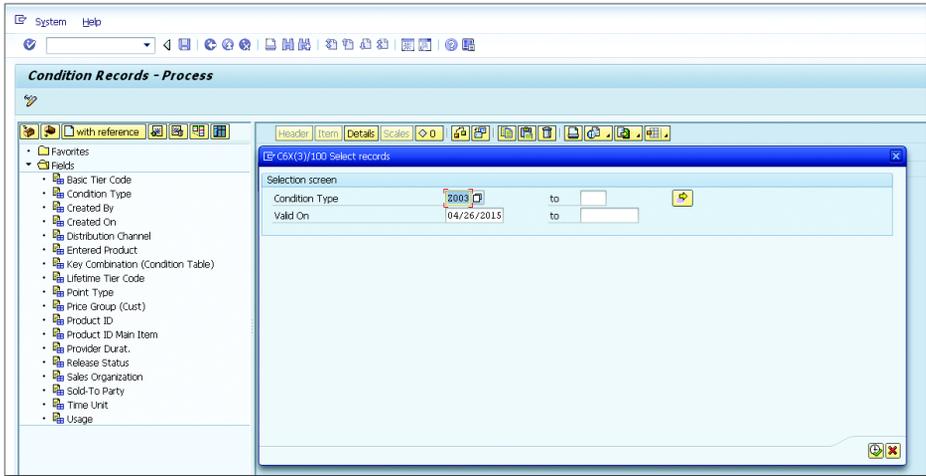


Figure 4.42 Condition Type Search

12. Create the order, and enter all relevant partner data and the product, as shown in Figure 4.43.

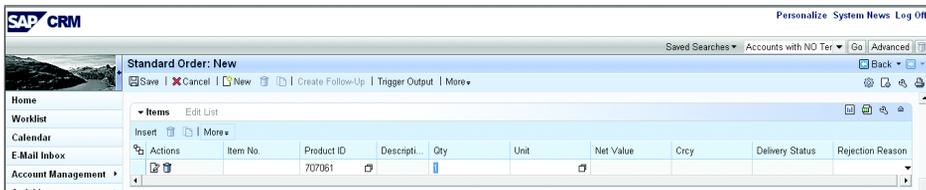


Figure 4.43 SAP CRM Sales Order Screen with the Product Entered

Figure 4.44 shows the product substituted automatically when entered in the sales order because of the product substitution procedure assigned to the sales transaction.



Figure 4.44 SAP CRM Sales Order Screen with the Product Substituted

Display Substitute Product

Be sure to activate the DISPLAY SUBST. PRODUCT in the configuration for MAINTAIN PRODUCT SUBSTITUTION REASONS if you want to substitute the product as stated in this business scenario.

The product determination functionality plays an important role based on the requirements in different business scenarios.

4.4 Campaign Determination

Campaign determination helps an organization apply campaigns in the form of discounts during a specified period in a sales order or quotations. The success of a campaign is determined based on the campaigns applied to the orders at the line item. You can determine one campaign or multiple campaigns to the sales order line item. The campaign determined is in the form of the campaign-specific price and is determined based on the condition technique.

Campaigns can't be browsed from within the sales order in the WebUI. Automatic campaign determinations are available in SAP CRM Enterprise, SAP Mobile Sales, SAP CRM E-Commerce, and IC.

Campaigns

Campaign functionality is covered in [Chapter 5](#); this topic is specific to applying campaign discounts on a sales order.

As an example, let's go through the steps required to set up campaigns with specific discounts and apply those discounts to sales orders. In this case, the campaign condition records are created in SAP ERP and then downloaded to SAP CRM.

Follow these steps:

1. Maintain the condition tables in SAP ERP. To access this function, go to SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CAMPAIGN DETERMINATION • MAINTAIN CONDITION TABLES. [Figure 4.45](#) shows the condition TABLE 900 created with the fields CUSTOMER, DISTRIBUTION CHANNEL, MATERIAL, and SALES ORGANIZATION. Just like

the pricing procedure determination, campaign determination needs to be set up in SAP ERP and downloaded to SAP CRM.

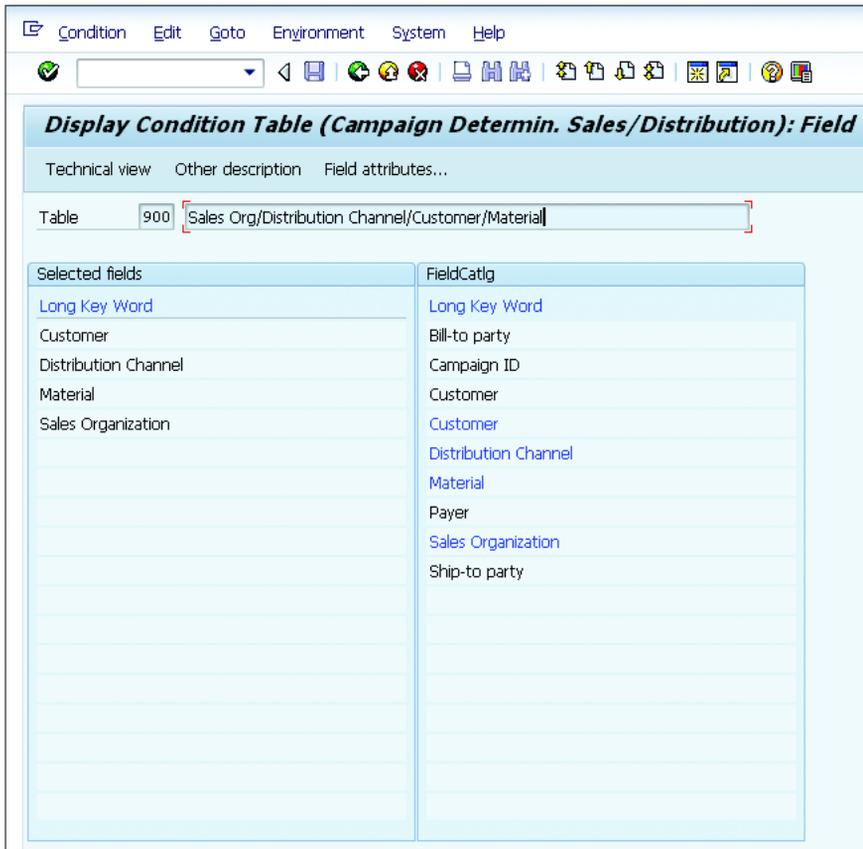


Figure 4.45 Maintain Condition Tables in SAP ERP

- To maintain the access sequence for the condition table required to set up the discount in the campaigns, go to SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CAMPAIGN DETERMINATION • MAINTAIN ACCESS SEQUENCE. [Figure 4.46](#), [Figure 4.47](#), and [Figure 4.48](#) show the access sequence maintenance for the campaign determination similar to the pricing procedure access sequence maintenance. This is to determine the correct condition record when the business transaction is created.

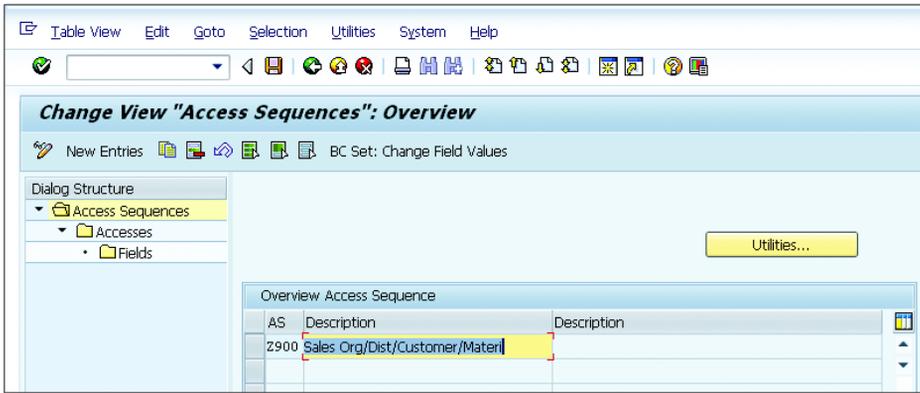


Figure 4.46 Access Sequence

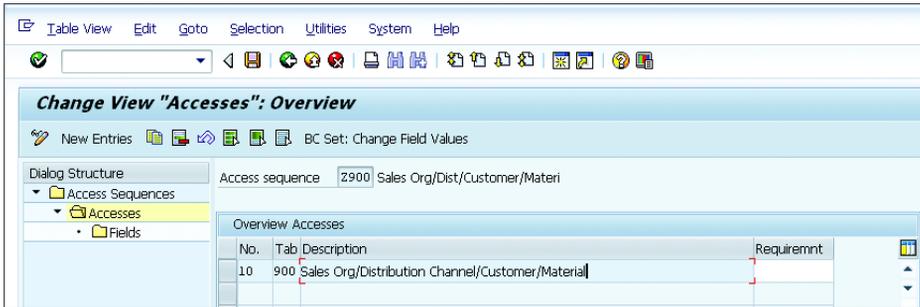


Figure 4.47 Assigning the Condition Table to the Access Sequence

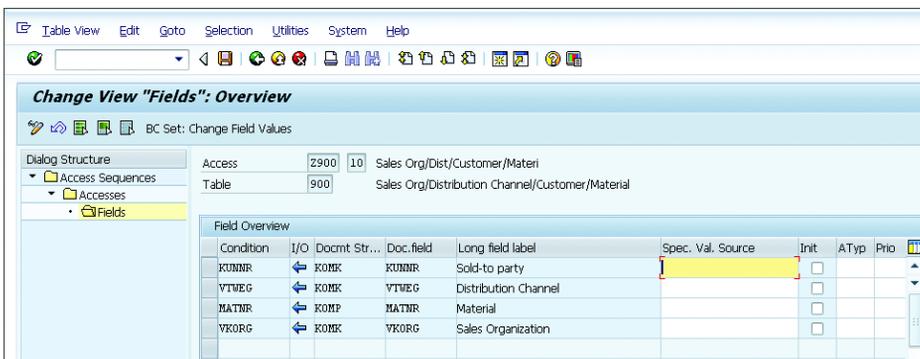


Figure 4.48 Fields within the Condition Tables

- Maintain the condition types by going to SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CAMPAIGN DETERMINATION • MAINTAIN CONDITION TYPES. Create the condition type, and assign the access sequence to the condition type, as shown in [Figure 4.49](#).

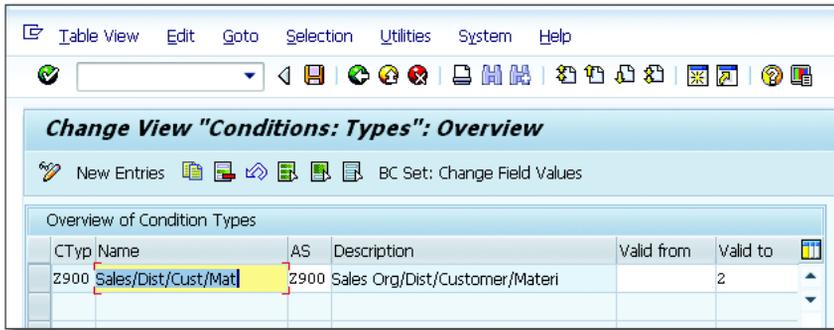


Figure 4.49 Creating the Condition Type in SAP ERP

- Maintain the determination procedure via the menu path, SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CAMPAIGN DETERMINATION • MAINTAIN DETERMINATION PROCEDURE. Create the campaign determination procedure, and assign the condition type to the procedure, as shown in [Figure 4.50](#).

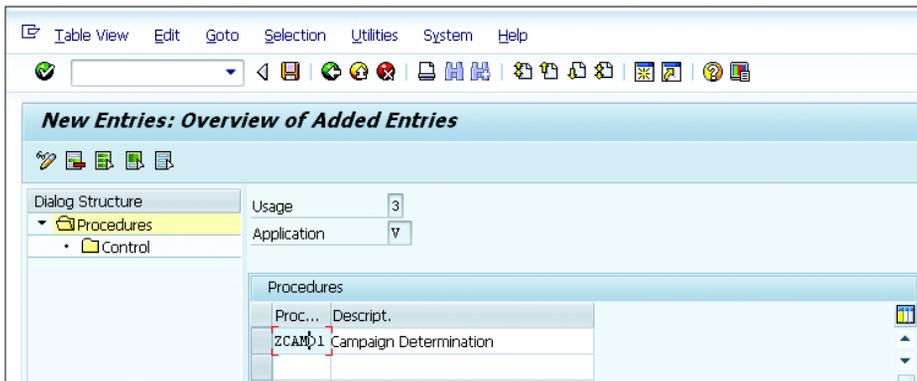


Figure 4.50 Maintaining the Campaign Determination Procedure

- Assign the discount condition type to the pricing procedure used in the sales order so that the discount determination takes place in the sales order (see [Figure 4.51](#)).

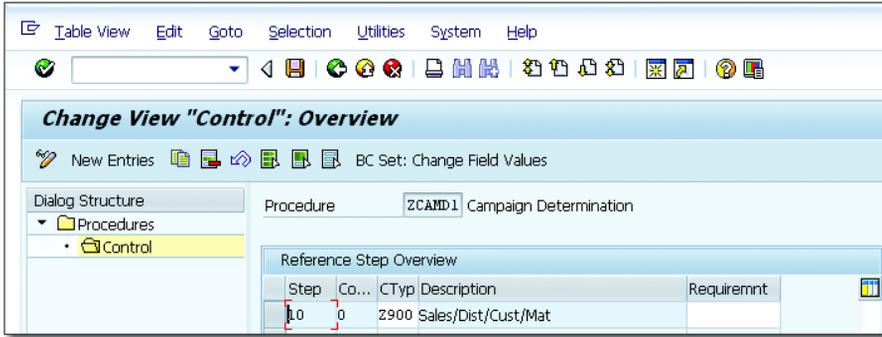


Figure 4.51 Assigning the Condition Type to the Campaign Determination Procedure

- Then, run Customizing load DNL_CUST_CNDALL in the SAP CRM system to download the configurations from SAP ERP to SAP CRM. Activate the campaign determination based on the sales area, document pricing procedure, and customer pricing procedure via the menu path, SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CAMPAIGN DETERMINATION • ACTIVATE CAMPAIGN DETERMINATION. [Figure 4.52](#) shows the campaign determination activation screen.



Figure 4.52 Campaign Determination Activation Screen

- Navigate via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • CONDITIONS AND CONDITION TECHNIQUE • CONDITION TECHNIQUE: BASICS • CREATE MAINTENANCE GROUP. Within this step, the campaign

condition type is added so that when creating the campaign within SAP CRM system, you should be able to add the condition type and add the discount to the campaign (see [Figure 4.53](#)).

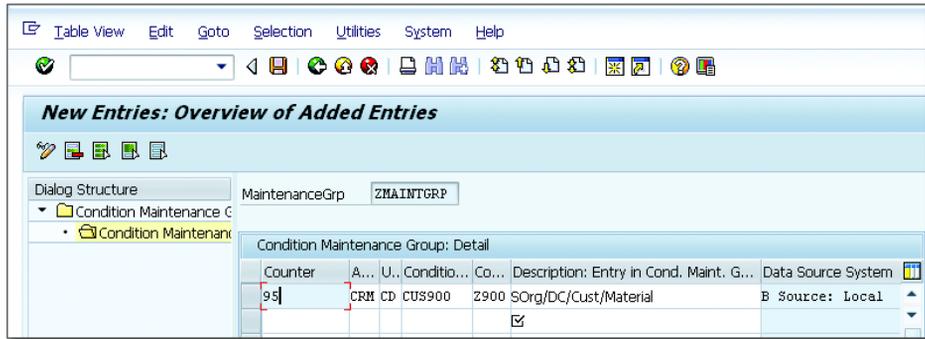


Figure 4-53 Condition Maintenance Group for the Campaign Condition Configuration

8. Create the campaign from the **MARKETINGPRO** business role and assign the products that you want the campaign to apply to. Add the discount condition type **Z900** to the campaign for a specific product. Make sure to release the campaign before the campaign can be determined in the sales order.
9. Create the order and add the same product as the one for which the campaign is created. As soon as the product is added, the campaign gets determined with the **Z900** discount condition type. The details can be seen in the **PRICE DETAILS** tab of the sales order. The order is then replicated to **SAP ERP**.

Electronic Data Interchange Order Processing

If the order is processed using EDI, then **BAdI CRM_CAMPAIN_BADI** method **SELECT_CAMPAIN** is called, which can be used to assign a campaign to the order item.

Campaign determination helps companies grow in the market by attracting customers with special discounts and promotions. This topic covers an example of how campaigns can be determined on a sales order by walking through the configuration steps involved. After the campaigns are created, they are applied on the sales order and provide discounts to the customer.

4.5 Text, Date, and Status Management

Business transactions within SAP CRM provide functionality for text management, date management, and status management. Text management helps to determine the customer- or material-specific text on the business transaction. Date management helps to determine key dates in the business transaction, such as the date of the service level agreement (SLA), the customer confirmation date, and so on. Status management drives key statuses on the business transaction, such as sales order delivered or invoiced. Let's discuss the details on each of these topics.

4.5.1 Text Management

Text management helps to identify key notes of a business transaction and logs them within the same transaction. Text can be internal or external. *Internal text* is directed toward the employees of the organization only and can't be viewed or sent to the customer; *external text* is sent to the customer.

You can maintain different texts for different business transactions. The text determination procedure can be assigned at the transaction level and the item category level.

Text and notes are created for several other business objects:

- ▶ Business partners
- ▶ Products
- ▶ Product catalogs
- ▶ Billing documents (header and item)

A *text object* is used to define the connection between a business object (e.g., a transaction) and associated texts. *Text types* are unique codes that are assigned to the text objects and displayed on business transactions for things such as internal notes, header notes, descriptions, and so on.

To get a better idea of how to configure text management, let's consider an example of an organization that wants to populate the customer text in a sales order. This can be achieved without any development via the following configuration steps:

1. Define the text objects and text types by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • TEXT MANAGEMENT • DEFINE TEXT OBJECTS AND TEXT TYPES. Define the text ID for the text object, which can be CRM_ORDERH or CRM_ORDERI. In the SAPSCRIPT SETTINGS screen shown in [Figure 4.54](#), select the TEXT OBJECTS AND IDS radio button.

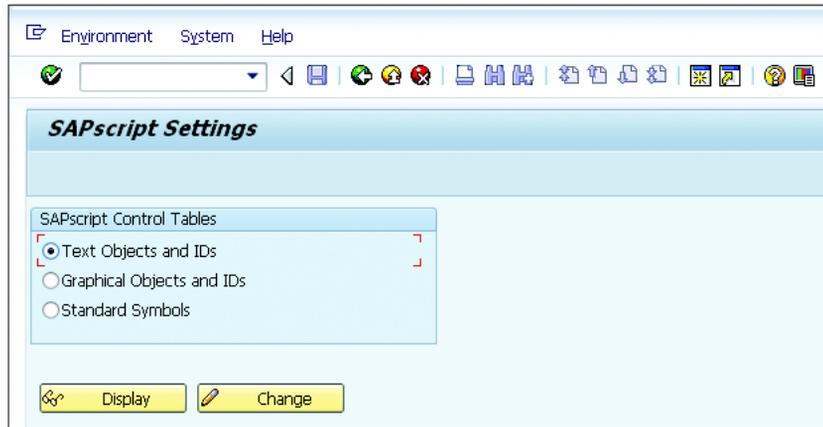


Figure 4.54 Text Objects and Text Types

2. On the DISPLAY TEXT OBJECTS screen, select the text object CRM_ORDERH. For the item, the object is CRM_ORDERI (see [Figure 4.55](#)).

Object	Description	Format	Save Mode	Interface	Line Width	Style	Form
CRM_ORDERH	Transaction Header		Update	TX	72	SYSTEM	SYSTEM
CRM_ORDERI	Operation data		Update	TX	72	SYSTEM	SYSTEM

Figure 4.55 Text IDs

3. Create the TEXT ID based on the text ID required for your business scenario by clicking on the CREATE button. A dialog box will appear where you can enter the ID information (see [Figure 4.56](#)).

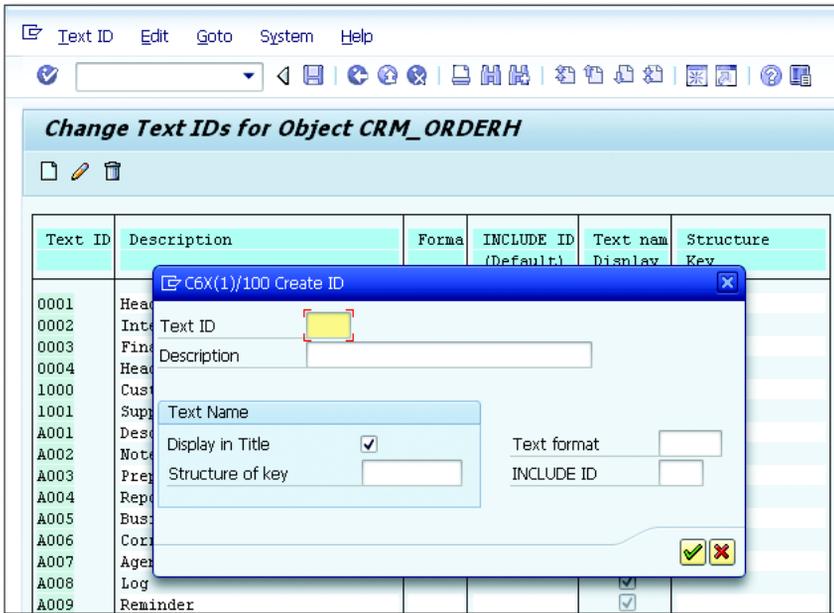


Figure 4.56 Create ID Popup

4. Choose from the list of TEXT IDs for text object CRM_ORDERM, as shown in Figure 4.57.

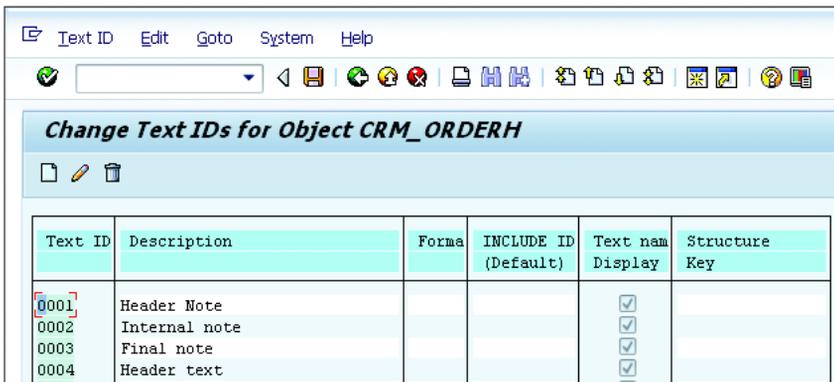


Figure 4.57 Text IDs for the Text Object CRM_ORDERM

5. Now create the text determination procedure by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • TEXT MANAGEMENT • DEFINE TEXT DETERMINATION PROCEDURE.
6. Select the text object CRM_ORDERH, as shown in [Figure 4.58](#).

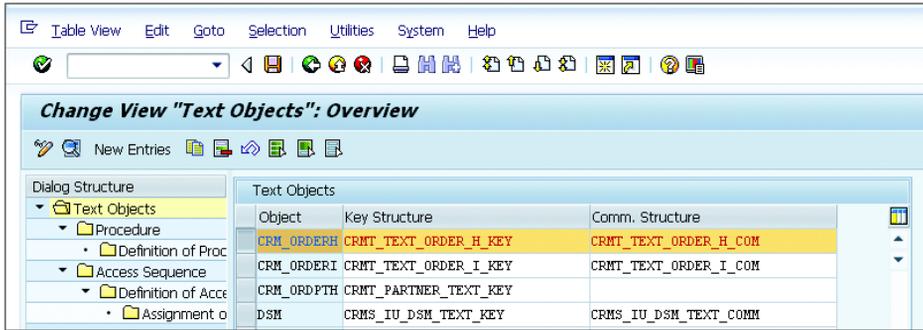


Figure 4.58 Text Object within the Text Determination Procedure

7. Assign the text determination procedure to the text object (see [Figure 4.59](#)).

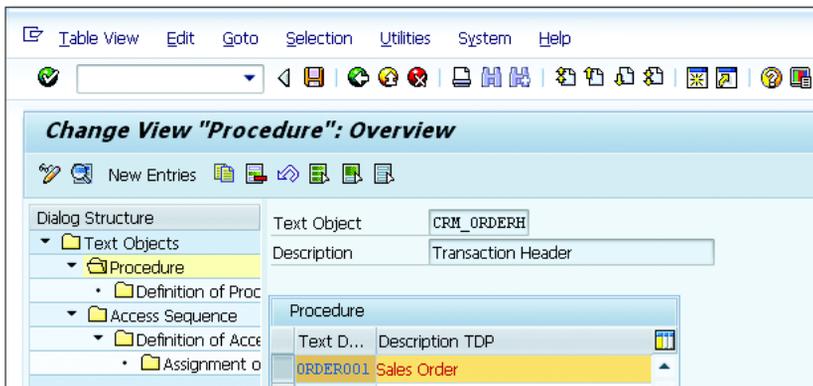


Figure 4.59 Text Determination Assignment to the Text Object CRM_ORDERH

8. Assign the text IDs to the text determination procedure, as shown in [Figure 4.60](#).

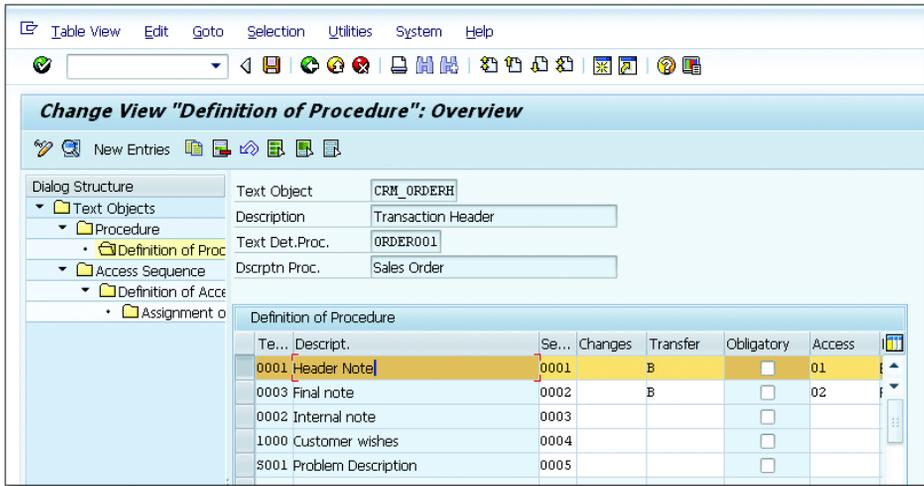


Figure 4.60 Assigning the Text IDs to the Text Determination Procedure

9. Under the DEFINITION OF PROCEDURE section in [Figure 4.61](#), complete the following fields:

- ▶ **CHANGES:** This field signifies whether you want to change or display specific text IDs. You have different options via the dropdown list: PASTE, DISPLAY, LOG, DISPLAY LOG, and EDIT.
- ▶ **TRANSFER TYPE:** This field helps to configure the text IDs based on certain business requirements; for example, if you want the text to be copied from the reference document so that text can't be changed, then you should select the COPY option in the TRANSFER TYPE field. Likewise, NOT YET DEFINED is set when there isn't any access sequence assigned to the text ID. ONLY READ DYNAMICALLY is set when a reference text is determined via the text determination procedure. Neither the text nor the reference is saved when reading the text dynamically.
- ▶ **OBLIGATORY TEXT:** This is used when you want to make the text ID mandatory in the transaction.
- ▶ **ACCESS SEQUENCE:** The access sequence is assigned to the text ID and determines the logic sequence to determine the text content in the business transaction.

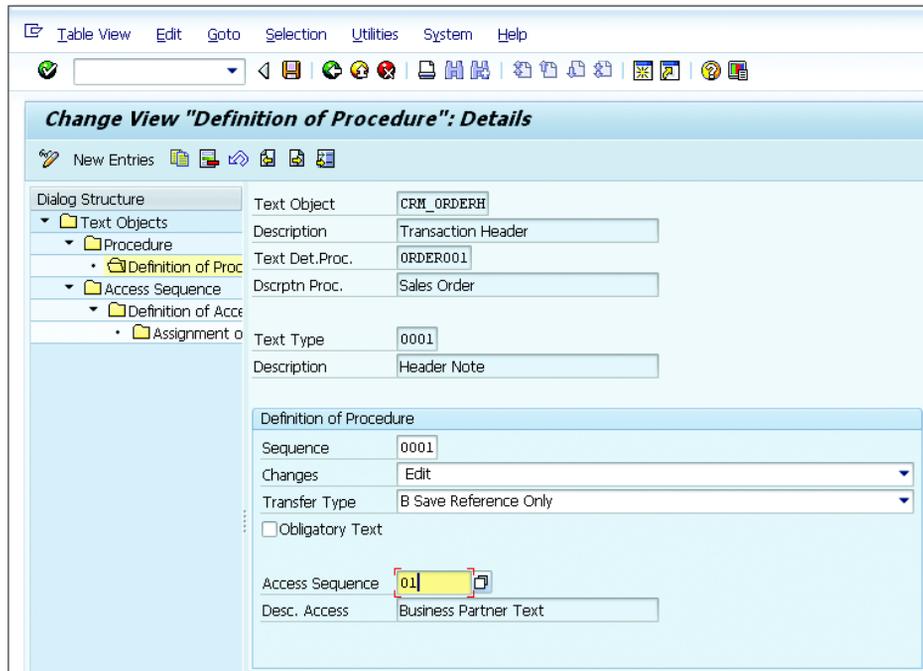


Figure 4.61 Text Procedure Details

10. At this level (see [Figure 4.61](#)), you can assign a name to the access sequence. You define the sequence and type of access under DEFINITION OF ACCESS SEQUENCE AND FIELD ASSIGNMENT.
11. Create the access sequence, and assign the reference object from where you want to determine the text on the business transaction. Like any other functionality in SAP CRM, to determine the correct record, SAP uses the access sequence. In this case, the concept is similar to other functionality within SAP CRM. [Figure 4.62](#), [Figure 4.63](#), and [Figure 4.64](#) show the definition and the details around the text access sequence.

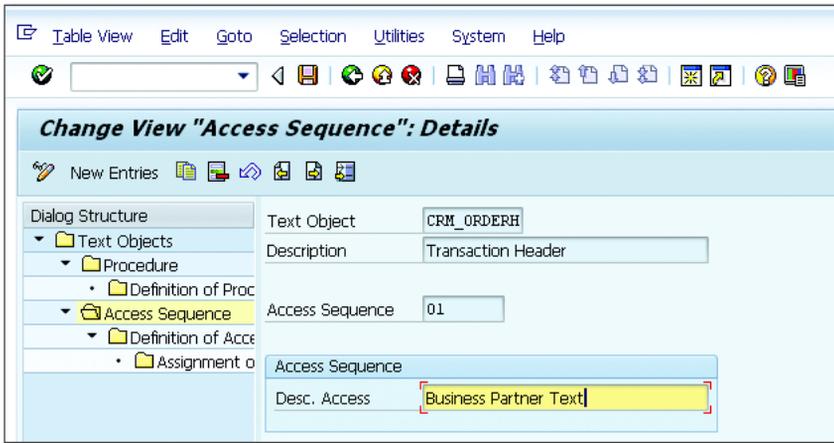


Figure 4.62 Access Sequence Assigned to the Text Objects

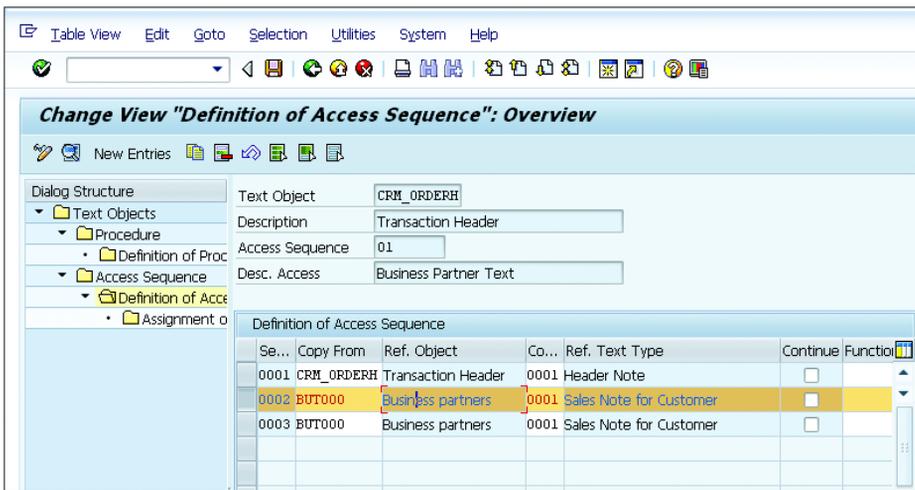


Figure 4.63 Text Access Sequence with Multiple Sequences

As shown in [Figure 4.64](#), the source of the text is determined from which business object the text will be populated on the sales order. The reference text type from the business partner is specified, from which the text will be copied.

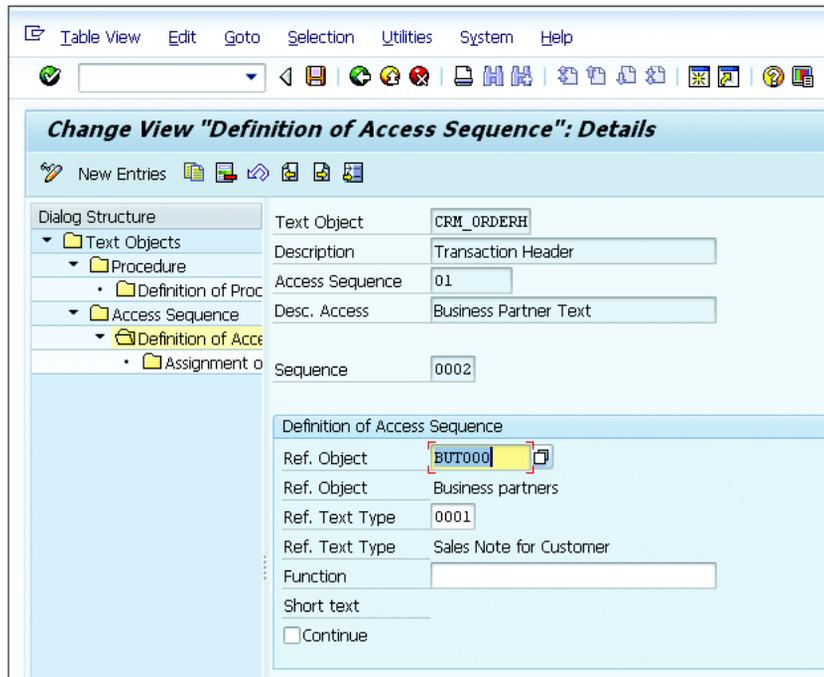


Figure 4.64 Access Sequence Details

- If you want to continue the text determination search within the access sequence and want to populate multiple texts, then click the CONTINUE check-box, and the system will display multiple texts. This function is particularly important if you require texts in several languages. This will continue the text determination even if the text is found.

Function Module COM_TEXT_DETERMINE_TEXT

The FM COM_TEXT_DETERMINE_TEXT is used to determine the text on the business object, which can be assigned to the access sequence. If there is any specific business scenario that can't be met by standard configuration, the FM COM_TEXT_DETERMINE_TEXT may help overcome some of your business needs.

- Assign the fields in the access sequence, as shown in Figure 4.65. The configuration shows the text being copied from the SOLD_TO_PARTY on the sales order.

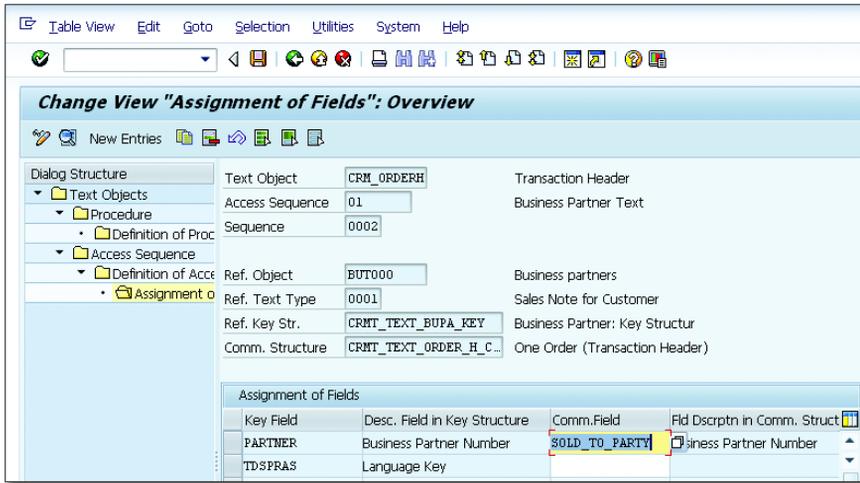


Figure 4.65 Access Sequence Field Assignments

You can define how the system finds the source text that is assigned in the access sequence. Because the internal program field names can deviate from one another, the fields in the communication structure must be assigned exactly to the fields in the key structure of the source text.

14. Assign the text determination procedure to the transaction type in Customizing via CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. Under the PROFILES section, assign the text determination procedure created to the transaction type. This activates the text determination functionality to the business transaction, as shown in Figure 4.66.

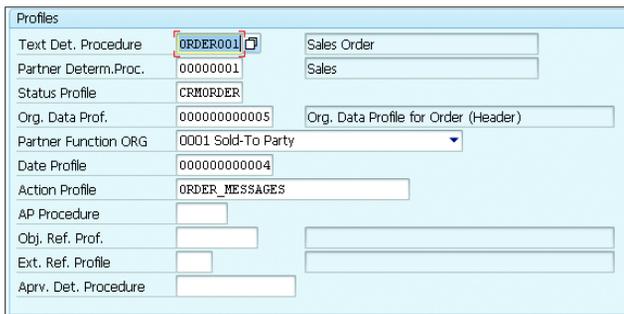


Figure 4.66 Text Determination Procedure Assigned to the Transaction Type

15. Update the LONG TEXTS box in the customer master data as shown in [Figure 4.67](#).



Figure 4.67 Customer Master Populated with the Long Text

When the order is created, the customer text is automatically picked up from the customer master data based on the configuration (see [Figure 4.68](#)).

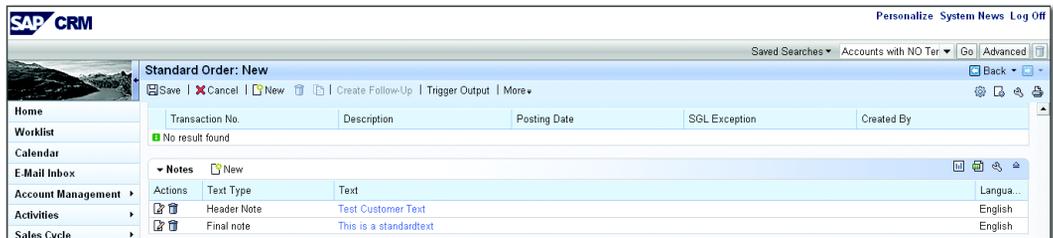


Figure 4.68 Sales Order Populated with the Text from the Customer Master

4.5.2 Date Management

Date management enables you to process as many dates as you want in a document. Dates represent an important functionality within any sales transaction and can drive many business scenarios. A typical example of date management is sending a confirmation to a customer based on confirmed delivery dates. It can also be used in contracts, for example, cancellation dates, run times, activities (total duration of an activity), and quotations (valid to date). You can also use date management in any other transaction types.

Dates can be defined or determined based on your requirement using date types, duration types, and date rules:

► Date types

These are unique identifiers that help businesses identify different dates, such as contract start, contract end, and so on.

► **Duration types**

This is a time frame between two points in time that consists of a number value and a time unit.

► **Date rules**

Date rules are used for calculating times. The calculation can depend on other times, durations, and reference objects. *Reference objects* are used to calculate dates and to control the time zone and factory calendar for date types and duration types. The reference object for a date or duration is always defined independently of the date profile, so they can have different reference objects, depending on the date profile. Different date types can have different reference objects within a date profile.

The configuration example we'll use next includes standard date types, durations, and date rules. Based on your specific business scenario, you can create a new date rule and determine a specific date type. Follow these steps to configure the date profile:

1. To create the date profile as shown in [Figure 4.69](#), navigate to the menu path, SPRO • CRM • BASIC FUNCTIONS • DATE MANAGEMENT • DEFINE DATE PROFILE.

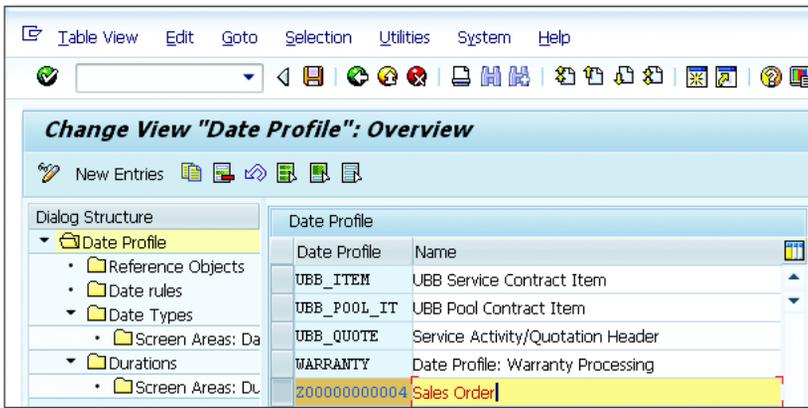


Figure 4.69 Date Profile

2. Navigate to the REFERENCE OBJECTS folder, and click the NEW ENTRIES button to add the reference objects SHIP-TO PARTY and SYSTEM to the date profile, as shown in [Figure 4.70](#).

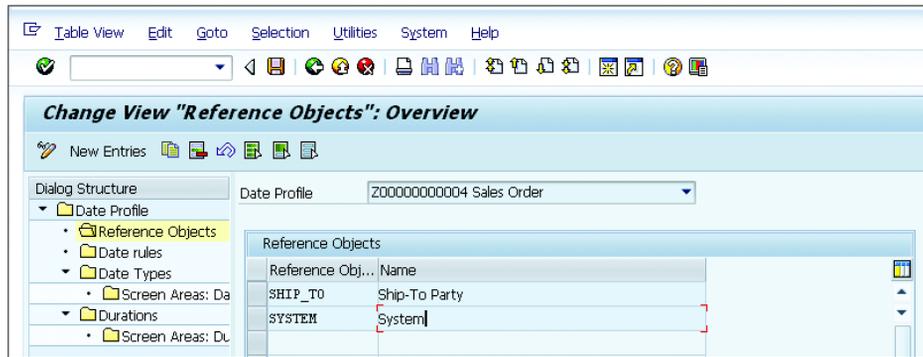


Figure 4.70 Date Profile Reference Objects

- Assign the date rule to the date profile based on your business scenario by navigating to the DATE RULES folder. As shown in [Figure 4.71](#), the 000000000003 – ACTUAL DATE (ACTIVITIES) date rule is assigned to the date profile. This rule calls the standard FM CRM_DATES_ORDERACTUAL_TR.

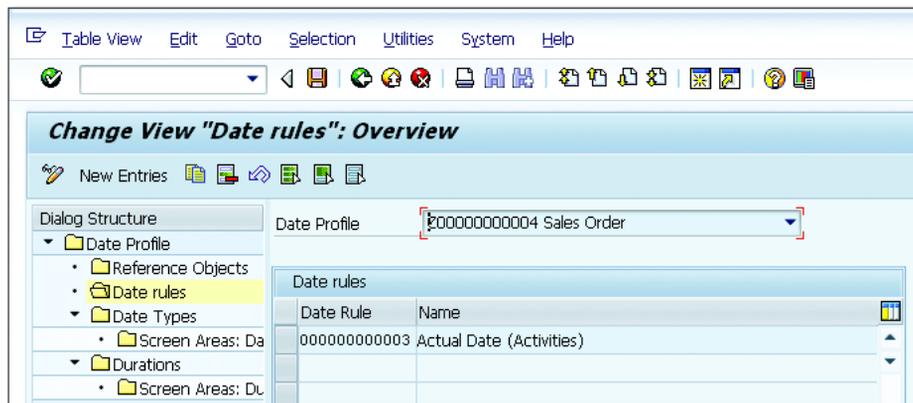


Figure 4.71 Date Profile Date Rule

- Assign date types to the date profile by double-clicking on the DATE TYPES folder to view the details, and assign the date rule if required (see [Figure 4.72](#)).

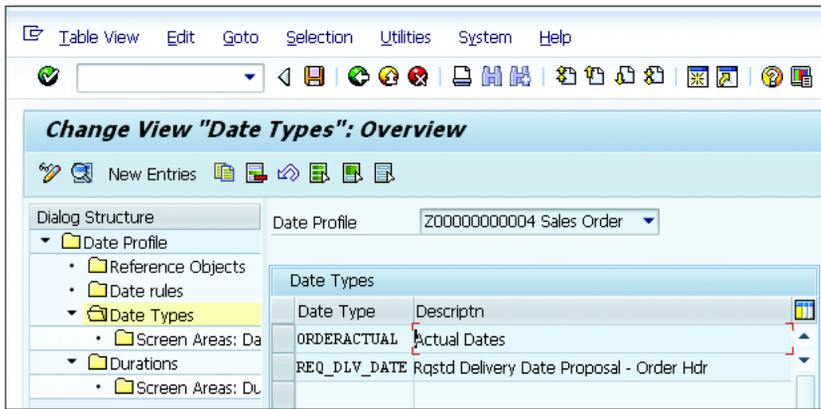


Figure 4.72 Date Types within the Date Profile

- On the CHANGE VIEW "DATE TYPES": DETAILS screen, you can also configure the date display format with the WEEKDAY, DATE, TIME ZONE, and TIME checkboxes (see [Figure 4.73](#)).
- Also in this screen, in the DEFAULT VALUES FOR MANUAL ENTRY section, you can select the DEFAULT option so that the same time is populated on the business transaction. You can also assign a reference object as a system time zone or ship-to time zone date type in the REFERENCE OBJ. field in this same section. Finally, you can determine the requested delivery date based on the ship-to party, by selecting SHIP-TO PARTY in the REFERENCE OBJ. field.

[Figure 4.73](#) shows the SYSTEM as the REFERENCE OBJ. with the CURRENT TIME option selected.

- Define the duration for the date profile, as shown in [Figure 4.74](#). In most of the IC scenarios, the activities or tasks that are created are always assigned with a duration that helps customer service representatives finish their task based on the duration maintained. This acts as an SLA for employees.

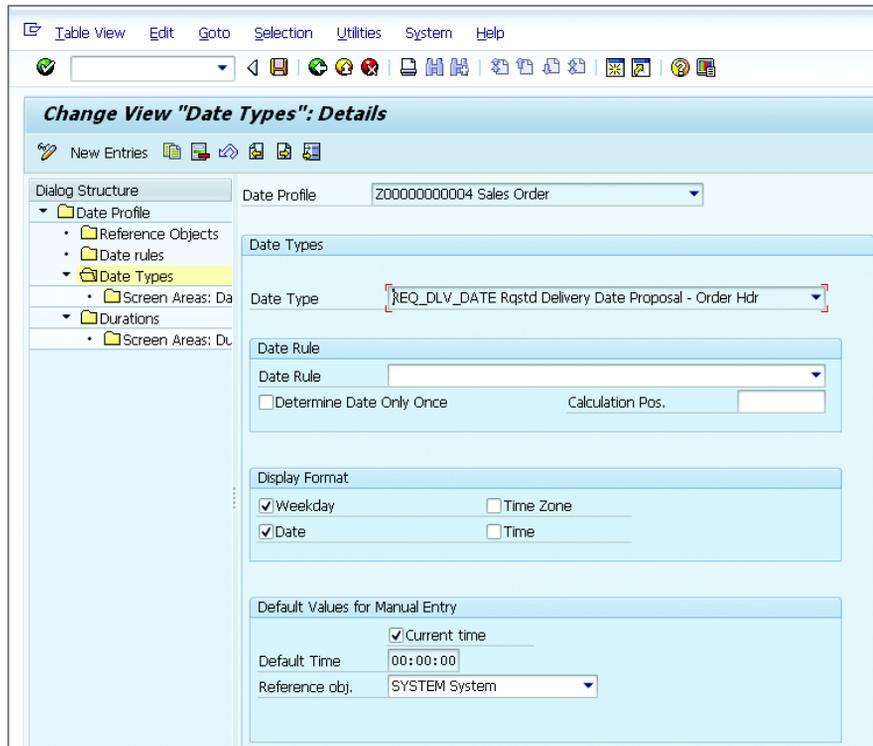


Figure 4.73 Date Type Details Where the Date Rule Can Be Assigned

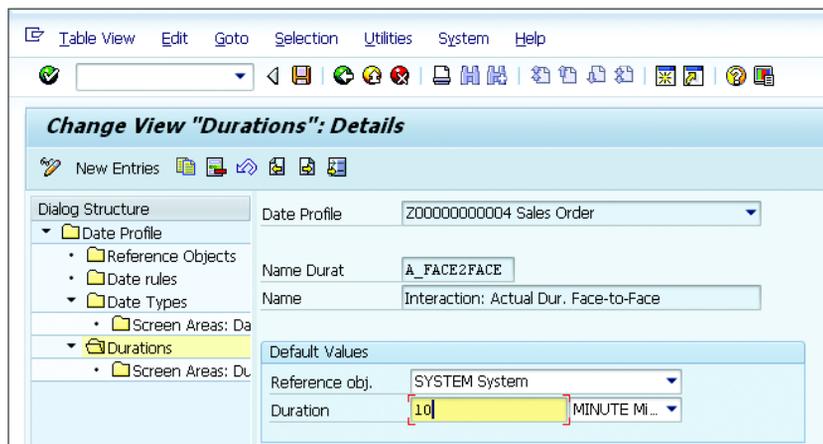
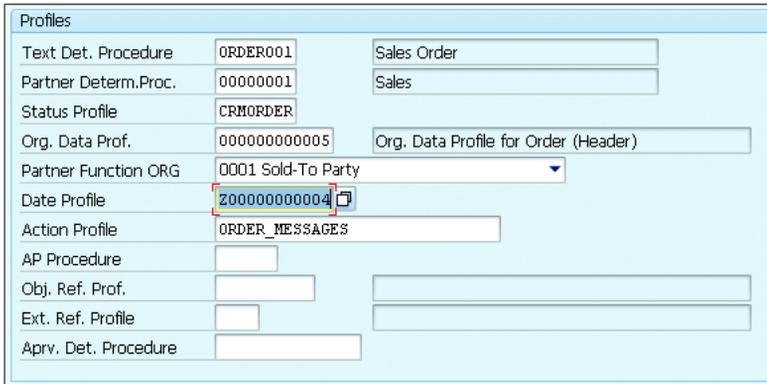


Figure 4.74 Durations within the Date Profile

8. Now that the date project has been created, assign it to a transaction type. In Customizing for transaction types, choose CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. Within this step, you assign the date profile created in the previous steps to the business transaction type. This step activates the date management functionality in the business transaction (see [Figure 4.75](#)).



Profiles		
Text Det. Procedure	ORDER001	Sales Order
Partner Determ.Proc.	00000001	Sales
Status Profile	CRMORDER	
Org. Data Prof.	000000000005	Org. Data Profile for Order (Header)
Partner Function ORG	0001 Sold-To Party	
Date Profile	200000000004	
Action Profile	ORDER_MESSAGES	
AP Procedure		
Obj. Ref. Prof.		
Ext. Ref. Profile		
Aprv. Det. Procedure		

Figure 4.75 Date Profile Assignment to the Transaction Type

4.5.3 Status Management

Status management is an important function in any SAP business transaction and is used in all the business transactions that are part of marketing, sales, and services. There are two types of statuses within SAP CRM:

► System status

System statuses are determined by the system. When a sales order is created and delivered, the system status is changed to COMPLETELY DELIVERED automatically. You can map the user status to the system status within the configuration based on your business requirements.

► User status

User statuses are defined by the organization based on their business requirements. This status is used for internal purposes to understand at which stage the transaction has been processed.

For the purposes of our discussion, let's look at an example to better understand the configuration steps involved with status management: Company XYZ wants

to implement an automatic process that approves issues without any escalation for complaints documents that amount to an invoice of \$300 or less.

In our scenario, a customer calls in to complain about a project. The customer wants to receive a credit for the product bought from Company XYZ. The customer service representative creates the complaints document within the SAP CRM system with reference to the customer invoice, which copies the product and price from the invoice. The dollar amount on the complaint is \$200. The user statuses on the complaints are OPEN and IN PROCESS – MANAGER APPROVAL AND APPROVED. As soon as the customer service representative saves the complaints document, the user status changes from OPEN to APPROVED instead of IN PROCESS – MANAGER APPROVAL. The customer receives the credit of \$200. The user status is mapped to the system status in the configuration where the APPROVED status is mapped to the COMPLETE system status. This also closes the document.

Follow these steps to configure status management:

1. Define the status profile for the user status by navigating to CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • STATUS MANAGEMENT • DEFINE STATUS PROFILE FOR USER STATUS. Create a status profile for your own transaction, which we refer to as the user status (see [Figure 4.76](#)). In the status profile, you can perform the following activities:
 - ▶ Define user statuses and document their function. A status profile can contain one or more user statuses.
 - ▶ Determine the sequence in which the user statuses are run. This sequence is determined by the status number. If you don't assign a status number to a user status, this status can always be set.
 - ▶ Assign at least one object type to the status profile.

Status Number

Only one user status with a status number can be active at any one time. When you assign a status number to a user number, you must also assign a highest and lowest status number. These numbers restrict the status number range from which the user status can be selected.

[Figure 4.77](#) shows the user status mapped to the system status (OPEN, INPR, and FINI).

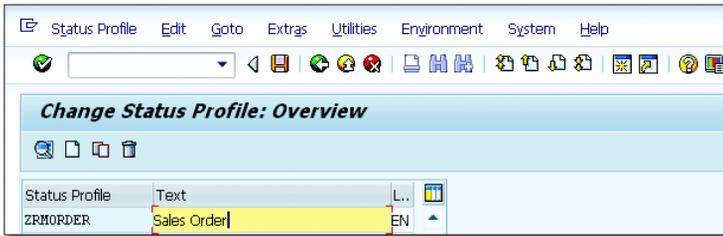


Figure 4.76 Status Profile

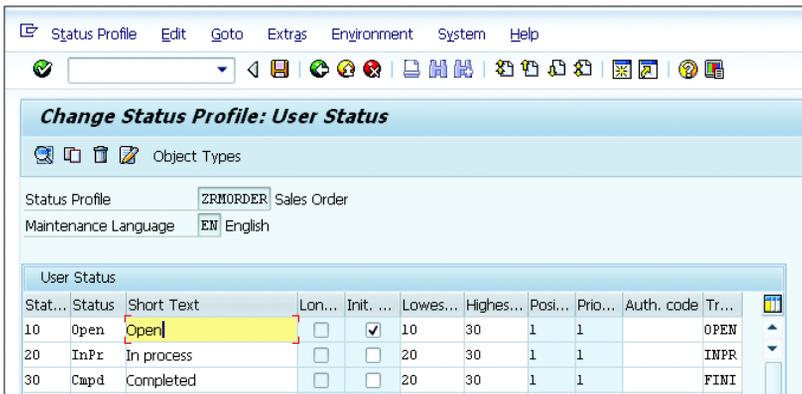


Figure 4.77 Statuses within the Status Profile

2. Click on the OBJECT TYPES button to activate the allowed object type for the user status profile, as shown in Figure 4.78 and Figure 4.79.

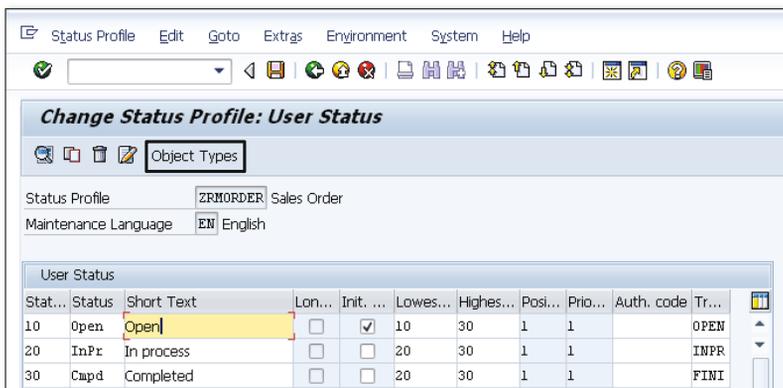


Figure 4.78 Object Types Button

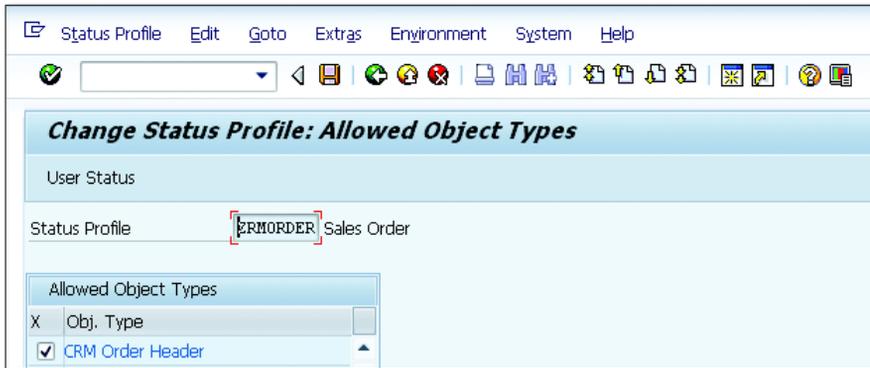


Figure 4.79 Allowed Object Type for the Status Profile

- To influence certain actions on the transaction based on the user status, you can access the TRANSACTION CONTROL menu option based on a certain user status (see Figure 4.80). In this example, the user status COMPLETED-CMPD has an influence on the transaction to set the transaction to COMPLETE (see Figure 4.81).

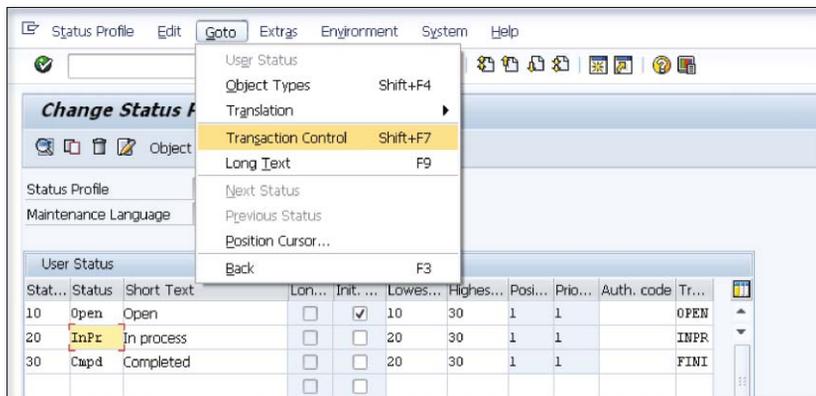


Figure 4.80 Transaction Control Option within the Status Profile

- Now that you've defined the status profile and user status, assign the status profile to the transaction type. In Customizing for transaction types, choose CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. Assign the status profile created in the previous steps to

the transaction type to activate the status management functionality within SAP CRM business transactions (see [Figure 4.82](#)).



Figure 4.81 Setting the Business Transaction to Complete

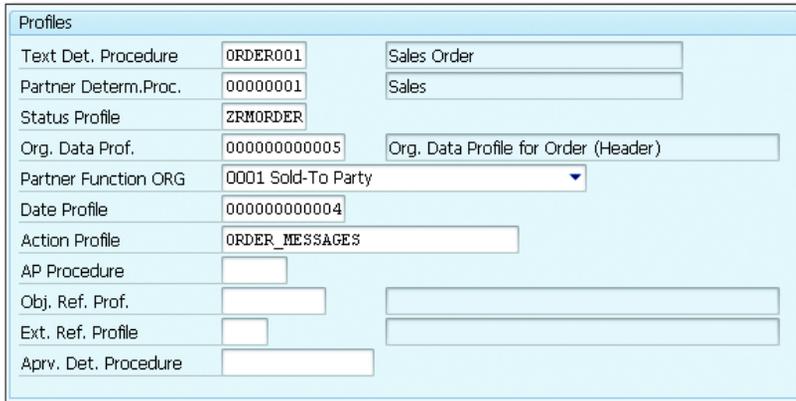


Figure 4.82 Assigning the Status Profile to the Transaction Type

Item Level Status

These configuration steps are the same for the status at the item level. You need to assign the status profile to the item category in this case.

4.6 Actions

Actions are used by companies to trigger any workflow or follow-up transaction as a part of automating their business processes. An order confirmation is a good example of an action. Order confirmations are generated when any transactions are created and triggered to send out confirmation to the customers.

Actions in SAP CRM use the *Post Processing Framework (PPF)*. Actions are used in account planning, grantor management, business transactions, marketing planning, billing, rebate processing, price lists, and managing users. Actions help to improve business processes and automate processes based on the set conditions and time lines.

In this section, we'll look at action profiles and processing, the configuration steps involved with setting up certain actions, and how the action monitor can provide further information on actions in the queue.

4.6.1 Action Profiles and Processing

An *action profile* can be assigned to a transaction type or item category. Each action profile consists of an *action definition*, with scheduled conditions assigned to these action definitions. After the conditions are fulfilled, the processing time within an action definition is determined based on whether the processing of the action is immediate, when saving, or via a selection report. For example, if the processing time option used is `PROCESSING WHEN SAVING DOCUMENT`, upon saving any transaction, the processing types are identified as smart forms, method calls, or workflows.

SAP provides around 180 actions for the application transaction processing `CRM_ORDER`. Other applications, for example, `CRM_CASE`, `BILLING`, `CRM_MKTPL`, `CRM_GPM`, and so on, also use *action processing*. Actions are used in business transactions for processing subsequent functions and outputs. *Action processing types* (method calls, workflows, and smart forms) determine which types of actions you require based on your business needs and therefore need to be configured accordingly.

Rather than executing actions automatically, there is an option to provide a popup to execute the action, which helps users while creating the transaction.

This is one of the functionalities to trigger the action from the business transaction.

To process the actions based on the dialog, the following criteria must be met:

- ▶ The action definition must use the IMMEDIATE PROCESSING option.
- ▶ The action definition must use the METHOD CALL processing type.
- ▶ The action must be manual (as opposed to using SCHEDULE AUTOMATICALLY).

Action Details

You can access action details for each application via Transaction nSPFPCADM.

4.6.2 Configuring Action Profiles and Processing

In the sections that follow, we'll discuss the various tasks involved in configuring an action profile and walk through the action processing steps.

Define Action Profiles and Actions

In this section, we'll begin the action profile configuration by defining the profile and actions by using a standard action definition example.

To begin, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • CHANGE ACTIONS AND CONDITIONS • DEFINE ACTION PROFILES AND ACTIONS. On the screen that appears, you can assign business object types to the actions. If required, you can also assign the date profile, as shown in [Figure 4.83](#).

In [Figure 4.83](#), you'll also see the USED COMMON PROFILE option. The common profile is used when you have overlapping action definition functionalities for similar objects. If you want to reuse action profiles, you can set up a common profile and assign it to other profiles to reduce the configuration effort.

The action profile has a list of action definitions that can help fulfill your business requirements. On the DISPLAY VIEW "ACTION DEFINITION": OVERVIEW screen in [Figure 4.84](#), you can create follow-up tasks or send a reminder email after the activity transaction is created.

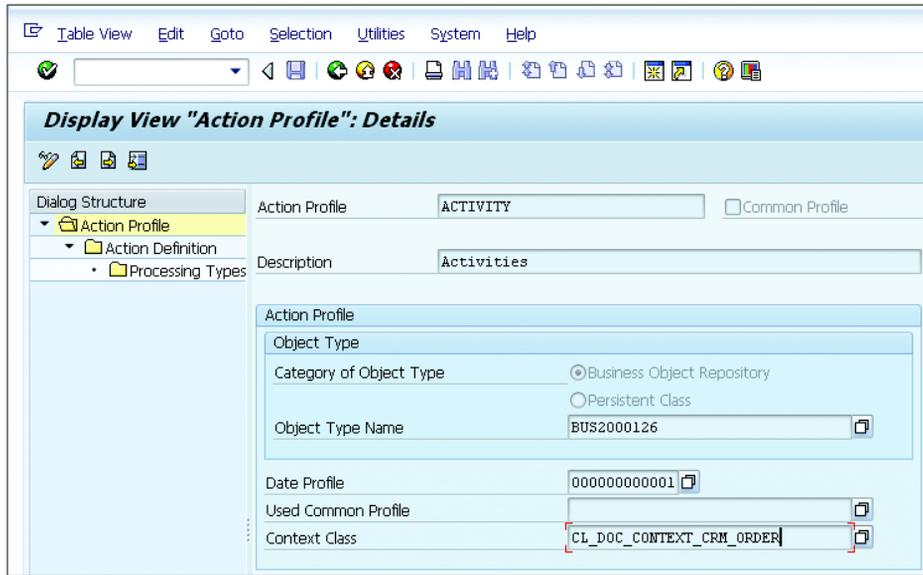


Figure 4.83 Activity Action Profile

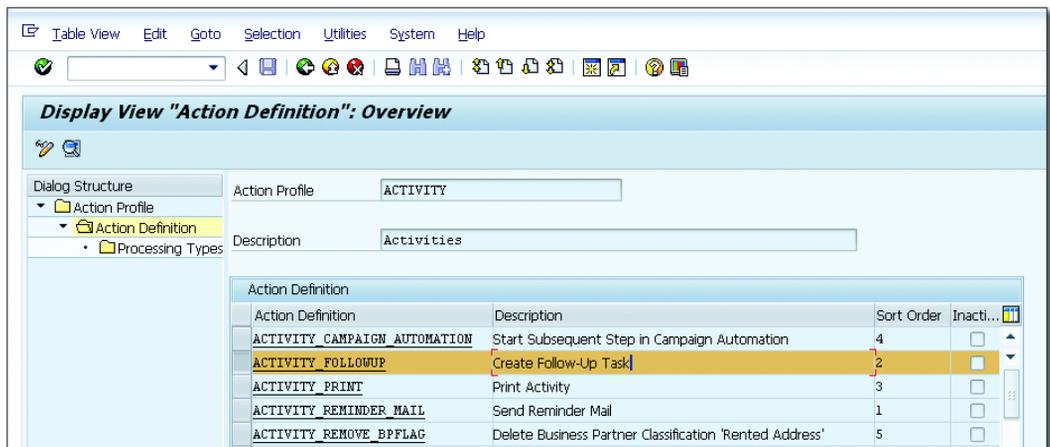


Figure 4.84 Action Definition

On the DISPLAY VIEW: "ACTION DEFINITION": DETAILS screen, there are various fields that need to be populated based on your business requirements (see [Figure 4.85](#)):

▶ **PROCESSED AT**

This option triggers an action when fulfilling a condition on saving the document or triggers an action using the selection report. There are three options in the dropdown for this field:

- ▶ **IMMEDIATE PROCESSING:** This action is started as soon as the start condition is fulfilled.
- ▶ **PROCESSING WHEN SAVING DOCUMENT:** This action is started when the transaction is saved.
- ▶ **PROCESSING USING SELECTION REPORT:** This action is started by a report after expiration and evaluation. After selecting to use the report, the system first checks whether a start condition is available. If no start condition is available, or the condition is correct, the action is started.

▶ **SCHEDULE AUTOMATICALLY**

If this checkbox is set, the actions are automatically activated for processing as soon as the schedule conditions are met. If this isn't set, the person responsible must manually activate the actions found in the application document for processing.

▶ **DELETE AFTER PROCESSING**

This checkbox controls whether actions of this action definition are automatically deleted after they've been successfully processed. If errors occur during processing, the actions are never automatically deleted.

▶ **CHANGEABLE IN DIALOG**

Select this checkbox if you want the user to be able to change the conditions and processing parameters for the action in the document.

▶ **EXECUTABLE IN DIALOG**

Select this checkbox if you want the user to be able to trigger the action manually on the ACTIONS tab.

▶ **DISPLAY IN TOOLBOX**

Select this checkbox if you want the action to be displayed as a symbol in the toolbar for the document. This allows the user to see the option to trigger the action.

▶ **PARTNER DETERMINATION FOR THE ACTION**

If the PARTNER-DEPENDENT checkbox is activated, you can define a partner function or partner function category for which the action is valid, for example, if you want to schedule or trigger an action on one specific partner function.

► DETERMINATION TECHNOLOGY

In this field, you can choose the determination via transportable conditions.

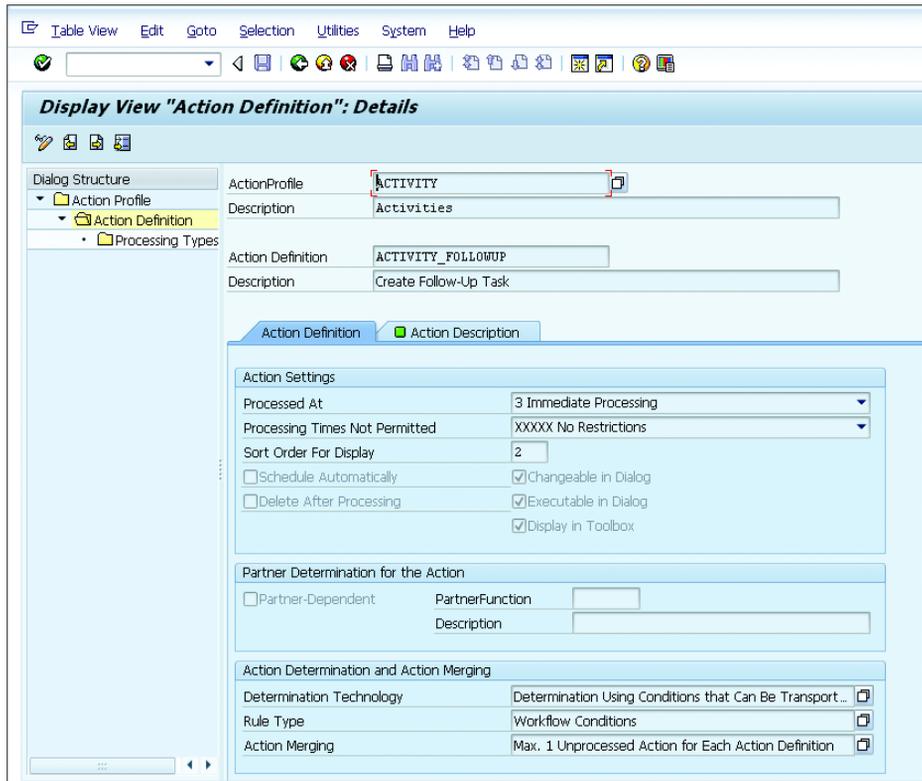


Figure 4.85 Action Definition Details

After implementing these options, complete the following, as shown in [Figure 4.86](#):

► ACTION DESCRIPTION tab

Here the action description is added, and the same can be seen on the business transaction for a specific action definition.

► ACTION MERGING tab

Under this tab, there are options for selecting the number of unprocessed actions and processed actions.

► NUMBER OF UNPROCESSED ACTIONS

The number of unprocessed actions provides the capability to select an option

for triggering unprocessed actions based on an action definition, processing type, or for partners.

► **ALLOW ANY NUMBER OF ACTIONS**

This setting allows you to trigger any number of actions to be triggered, meaning if the conditions are satisfied, the action will trigger. For example, any change on the sales order triggers the confirmation going out to the customer if all the conditions are satisfied. You can set any number of allowed actions.

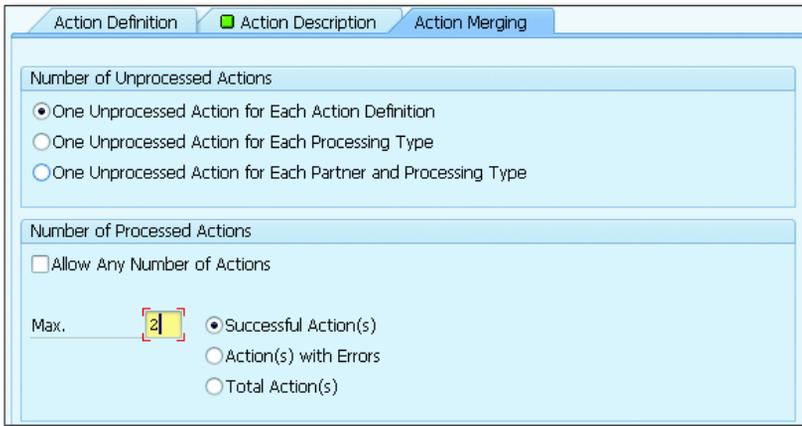


Figure 4.86 Action Merging

Access the PROCESSING TYPES folder, as shown in [Figure 4.87](#). There are three types of processing types that you can configure within the action definition based on your business scenarios:

► **SAP SMART FORM**

SAP Smart Forms are used when the confirmation needs to be sent to any customer, for example, fax, email, or print confirmations.

► **METHOD CALL**

Method calls are BAdI implementations that can be assigned to the actions to create any subsequent transaction. For example, you can create activities or tasks as follow-up transactions to a sales order. EXEC_METHODCALL_PPF is the relevant BAdI for method calls.

► **WORKFLOW**

Workflow tasks can be assigned that you've created via the *Workflow Builder* to the action definition.

BADIs for Action Processing

SAP has provided multiple BADI implementations for action processing; some of the examples are COPY_DOCUMENT (create a follow-up document), COMPLETE_DOCUMENT (set status completed within document), CREDIT_MEMO (create credit memo item), REPAIR_ITEM (create a repair item), and IO_EVENT_CREATE (create a workflow event).

Figure 4.87 shows the method call to create a follow-up task for an activity.

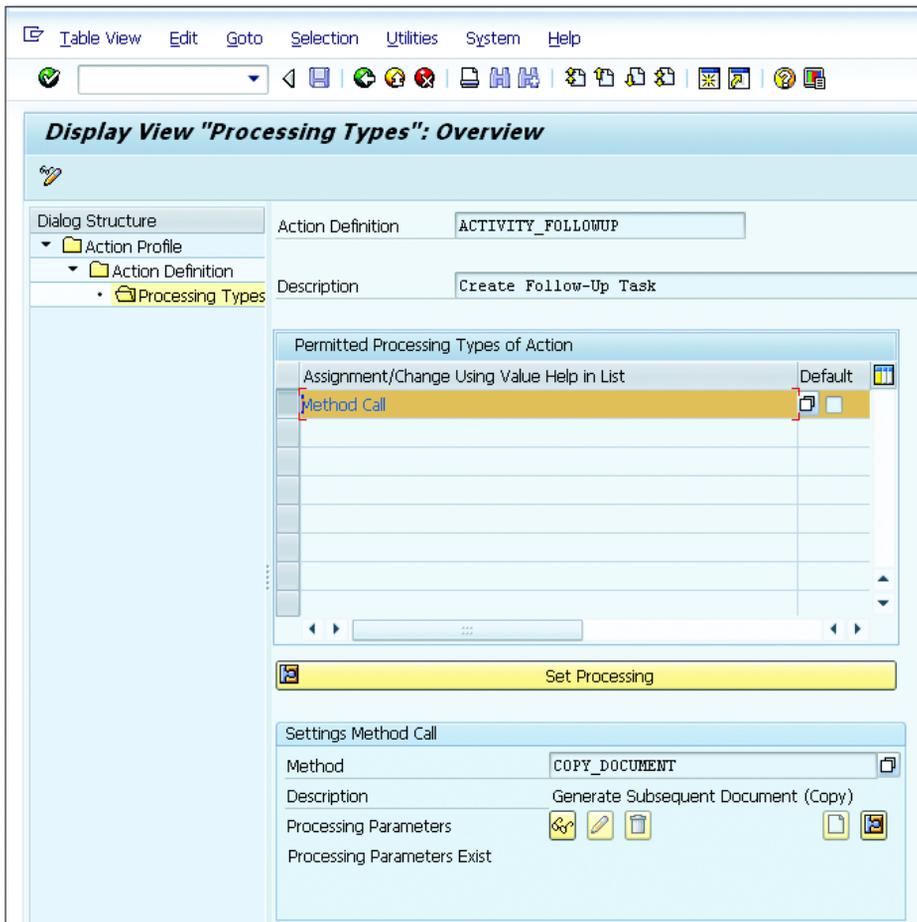


Figure 4.87 Method Call COPY_DOCUMENT

Under the **SETTINGS METHOD CALL** section in [Figure 4.87](#), you can access the **PROCESSING PARAMETERS**, where the method call process type is assigned. Click the pencil icon next to the **PROCESSING PARAMETERS** field, and a popup will appear, as shown in [Figure 4.88](#). This area allows you to define the transaction type here to create this transaction as a follow-up document. In this example, it's task type 1003. The **COPY_DOCUMENT** method call copies the information from the source transaction to the target transaction.

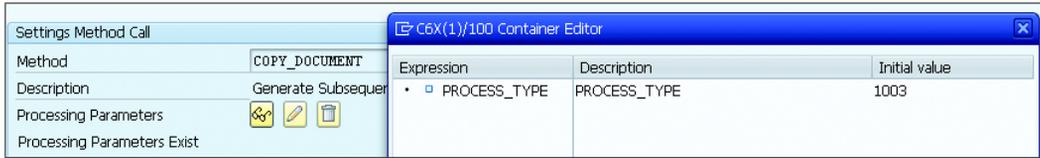


Figure 4.88 Process Type Assigned to the Action Definition

Customer Confirmations

For customer confirmations, you can use smart forms fax, mail, and print. In this case, the processing type option will be **SMART FORMS** instead of **WORKFLOW** or **METHOD**.

Define Conditions

Having defined the action profiles and actions in the previous section, you can now define the conditions for each of the action definitions based on your business scenario. There are two types of conditions:

► Schedule condition

The schedule condition decides whether an action should be scheduled for processing. An action is therefore only generated if the schedule condition is met. For example, a schedule condition can be based on the customers from 1 to 100.

► Start conditions

After the conditions are scheduled, the start condition is checked before the action is executed. The action is executed only if the start condition is met. For the scheduled actions, the start condition is checked before it's executed. Thus, the scheduled action is executed after the start condition is satisfied.

To define the action conditions, navigate via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • CHANGE ACTIONS AND CONDITIONS • DEFINE CONDITIONS.

Figure 4.89 shows the START CONDITION tab with a status and current date and time greater than the planned date. If these conditions are satisfied, then the action will be triggered.

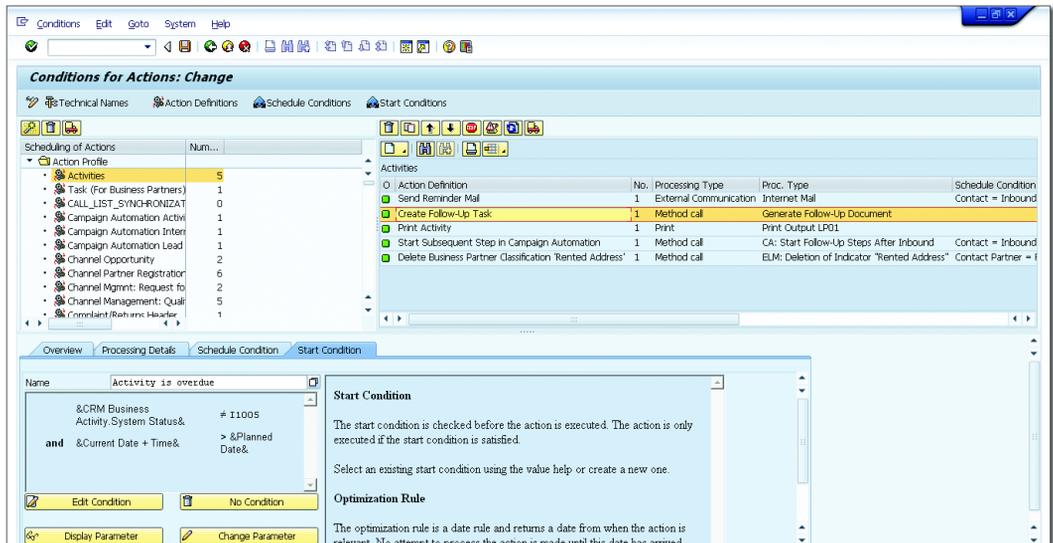


Figure 4.89 Action Conditions

Conditions Using BAdI

If the rule type on the action definition is COD – CONDITIONS USING BUSINESS ADDIN (as shown in Figure 4.90), then you can assign the BAdI to the scheduled condition. Based on your specific business scenarios, you can use schedule condition BAdI EVAL_SCHED-COND_PPF or start condition BAdI EVAL_STARTCOND_PPF.

Figure 4.90 shows the different options for condition usage whether you want to make use of a BAdI or a workflow to accommodate your specific business needs.

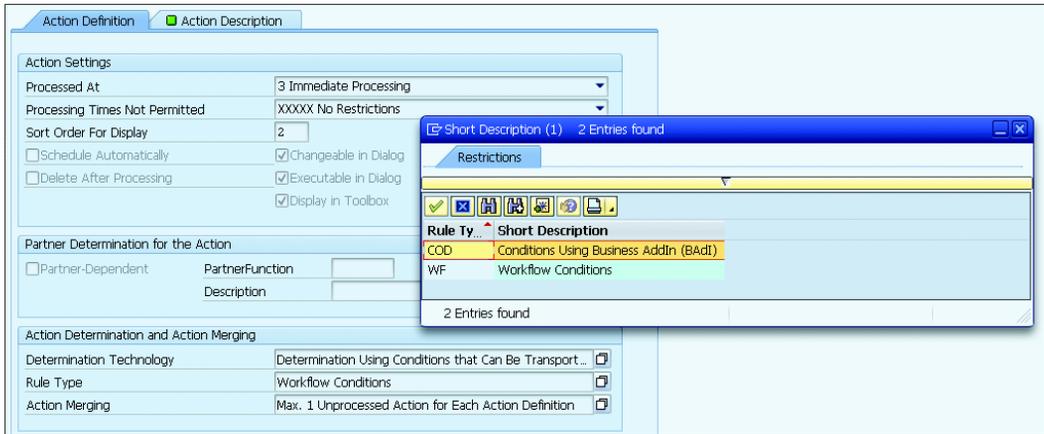


Figure 4.90 Rule Type within an Action Definition Using BAdI or Workflow Conditions

Configure Action Determination Procedure

This section discusses how to configure an action determination procedure. Navigate via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • SET UP ACTION PROFILE DETERMINATION • CREATE CONDITION TABLES.

The example in Figure 4.91 shows the SAP standard CONDITION TABLE SAP00002 with the DESCRIPTION of SALES ORG./DIS. CHAN./DIVISION/TRANS. TYPE/CUSTOMER. The new condition table can be created based on the specific business needs.

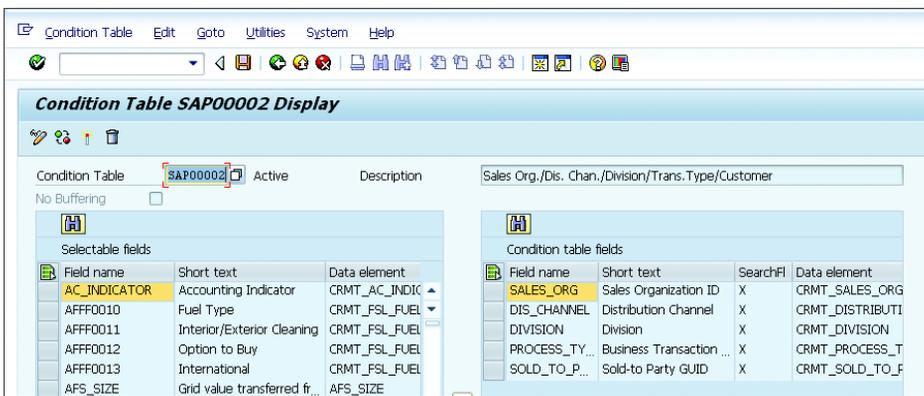


Figure 4.91 Action Condition Tables

Create Access Sequence

Next, we'll create the access sequence for the configuration. To start, navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • SET UP ACTION PROFILE DETERMINATION • CREATE ACCESS SEQUENCE.

Figure 4.92 shows the standard access sequence 0001 SALES ORDER. Here, you enter "CRM" in the APPLICATION field and "AP" in the USAGE field.

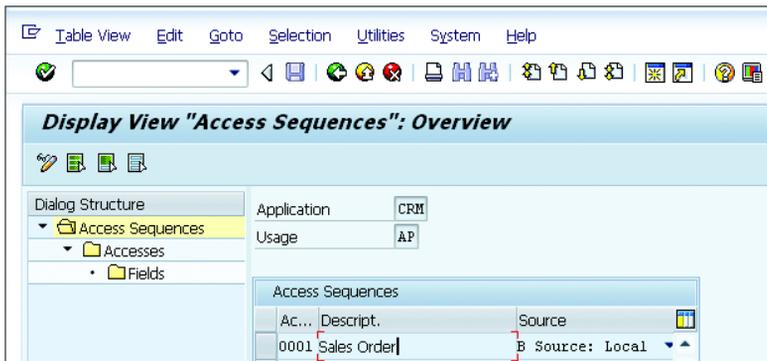


Figure 4.92 Action Access Sequence

In Figure 4.93, the ACCESS SEQ. 0001 is assigned with TABLE SAP00002.

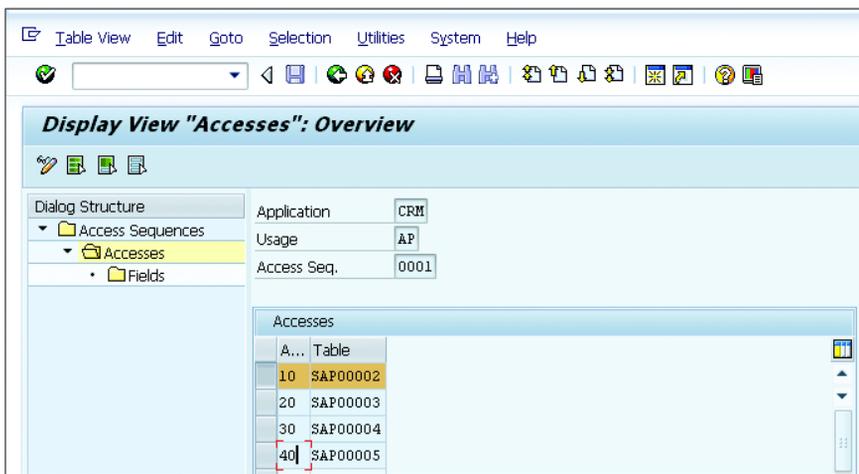


Figure 4.93 Tables Assigned to the Action Access Sequence

Create and Define Action Determination Procedure Condition Types

With the access sequence created, we can now create the action determination procedure condition types. Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • SET UP ACTION PROFILE DETERMINATION • CREATE CONDITION TYPES.

Figure 4.94 shows “OACK” in the CONDITION TYPE field, “Order Confirmation” in the DESCRIPTION field, “0001” in the ACCESS SEQ. field.

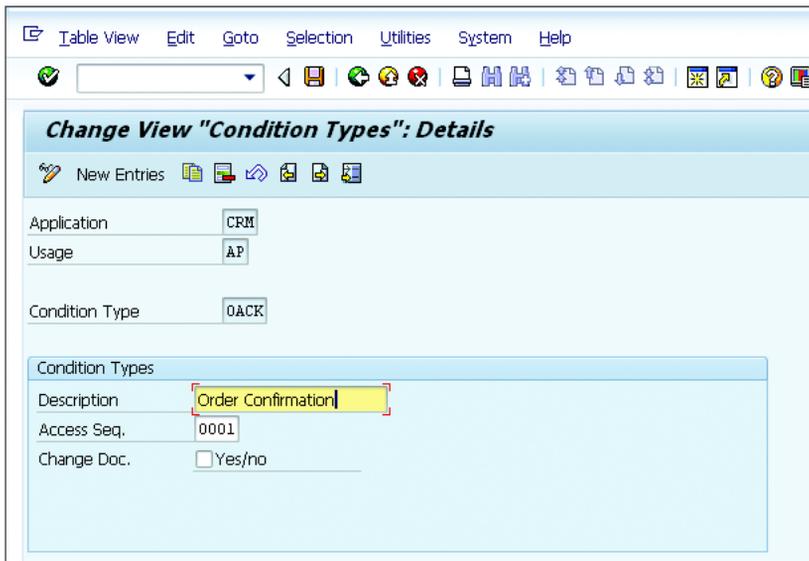


Figure 4.94 Maintaining Condition Types

After you've created the action determination procedure, you can further define it. Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • SET UP ACTION PROFILE DETERMINATION • DEFINE DETERMINATION PROCEDURE.

Here, you'll assign the condition type to the action determination procedure. Figure 4.95 shows standard action determination PROCEDURE 0CRM01 assigned with CONDITION TYPE OACK.

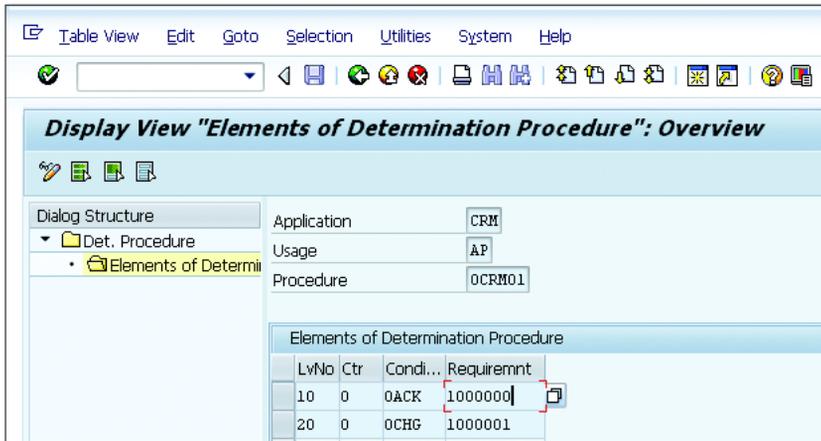


Figure 4.95 Maintaining the Action Determination Procedure and Assigning Condition Types

Assign an Action Determination Procedure to the Transaction Type

To assign the action determination procedure to the transaction type, navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • SET UP ACTION PROFILE DETERMINATION • ASSIGN DETERMINATION PROCEDURE TO TRANSACTION TYPE.

Assign the action determination procedure, as shown in Figure 4.96. After this step is completed, the action determination is activated for a business transaction.

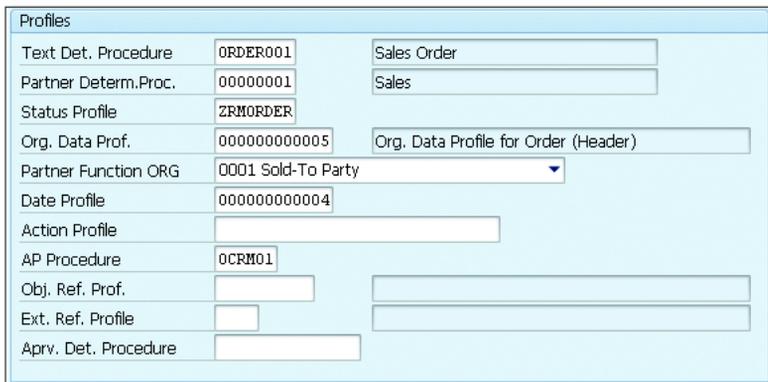


Figure 4.96 Assigning the Action Determination Procedure to the Transaction Type

Create Condition Maintenance Group

To create the condition maintenance group, navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • SET UP MASTER DATA MAINTENANCE FOR ACTION PROFILE DETERMINATION • CREATE CONDITION MAINTENANCE GROUP.

In [Figure 4.97](#), MAINTENANCEGRP CRM_AP is used for the action profile determination. Add the CONDITION TYPE "OACK" and "AP" for USAGE, as shown in the CONDITION MAINTENANCE GROUP: DETAIL section of [Figure 4.97](#).

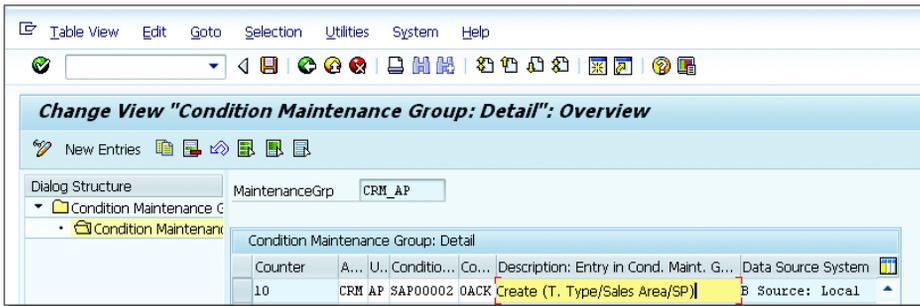


Figure 4.97 Assigning the Condition Type to the Maintenance Group CRM_AP

Create Condition Record for the Maintenance Group CRM_AP

To create the condition record for the maintenance group CRM_AP, access Transaction /SAPCND/GCM, and maintain the condition record for the condition type OACK as shown in [Figure 4.98](#). In this step, you create the condition record for the actions and assign the action profile to it. This helps determine the correct condition record and execute the action based on the action profile.

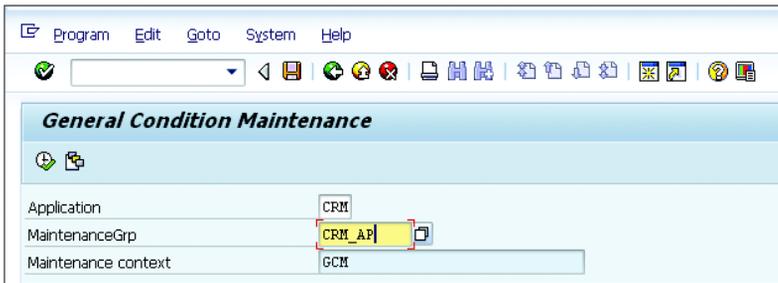


Figure 4.98 Condition Type Maintenance Group Screen

The action configuration is complete after the condition record is maintained. Now, when the order is created with the master data as mentioned in the condition record, AP procedure OCRM01 is triggered.

Because the AP procedure is called, the system looks for the condition record for the condition type OACK. It determines the condition record, and the ACTION PROFILE ACTIVITY is assigned to the condition record (see [Figure 4.99](#)).



Figure 4.99 Maintaining the Action Condition Type

BAdI CONTAINER_PPF (PPF: Complete Container before Condition Evaluation)

If you have any specific business needs that aren't fulfilled by the standard action configuration step as mentioned previously, then you can implement BAdI CONTAINER_PPF (PPF: Complete Container before Condition Evaluation). This BAdI will help evaluate the unique business conditions before triggering any actions.

4.6.3 Action Monitor

The action monitor provides you with the information on actions that are in queue or that are successfully generated. In one view, this is more like the action report that you can monitor various actions for various transactions and trigger them from the action monitor if needed.

Use Transaction SPPFP and program RSPFFPROCESS for the action monitor. If there is a requirement to trigger the action based on the time-dependent schedule condition, then you can set a background job with a proper variant for program RSPFFPROCESS and process those actions accordingly. You can display all unprocessed actions by just entering the APPLICATION, ACTION PROFILE, and CREATE TO date on the ACTION MONITOR selection screen. It will show the result of all unprocessed actions.

In this section, we looked at how actions are critical to triggering confirmations, creating follow-up transactions, and triggering any workflow.

4.7 Service Functions in Business Transactions

SAP CRM consists of service-related functionality just like any other functionalities mentioned so far in this chapter. The service functions are mostly applicable to service transactions within SAP CRM. This topic covers functionality for catalogs, codes, profiles, multilevel categorization, and the rule modeler.

4.7.1 Catalogs, Codes, and Profiles

Catalogs are used in SAP CRM business transactions to describe the reasons, cause, damages, and so on related to products when doing business with a customer. Catalogs typically apply in service scenarios where an organization wants to categorize customer complaints. One good business example is the reason for a certain status of an opportunity. An organization qualifies the lead as a hot lead and creates an opportunity for that customer. The opportunity goes through the various milestones and phases of the opportunity cycle, until the opportunity is won. For reporting purposes, it's very important to know the reason for winning an opportunity because it helps an organization recognize specific trends for winning or losing an opportunity in the market. Catalogs, codes, and profiles help to clarify this information.

To illustrate our example, let's say that an organization wants to configure the complaints transaction to input the code group and code. The *code group* in the transaction will specify the reasons for the complaints, so when a customer calls back with one of these issues, the customer service representative should be able to pick this value and categorize it based on the multicategorization level, which we'll discuss in [Section 4.7.2](#).

The following are the configuration steps for catalogs, codes, and profiles in an SAP CRM system:

1. The first step is to define the catalogs. Start by following the menu path, SPRO • CRM • BASIC FUNCTIONS • CATALOGS, CODES AND PROFILES • DEFINE CATALOGS. As shown in [Figure 4.100](#), define a CATALOG as Z8 for CUSTOMER

COMPLAINTS falling under the catalog category C OVERVIEW OF DAMAGE/ DEFECTS.



Figure 4.100 Maintaining Catalogs

- To define the code groups and codes for the catalog, go to SPRO • CRM • BASIC FUNCTIONS • CATALOGS, CODES AND PROFILES • DEFINE CODE GROUPS AND CODES FOR CATALOGS. Create a code group, as shown in [Figure 4.101](#).

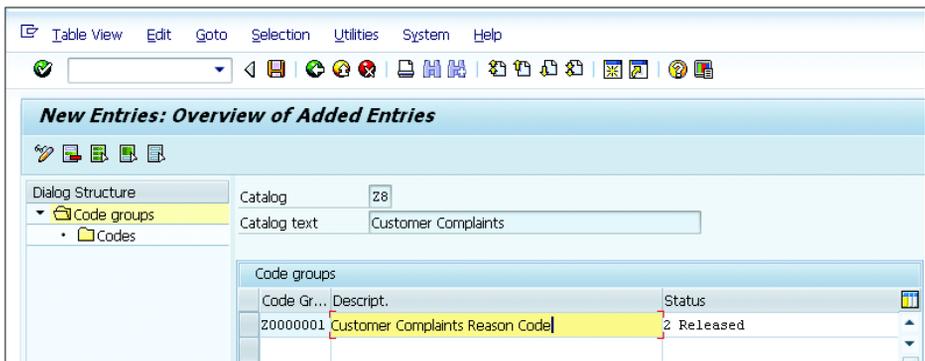


Figure 4.101 Maintaining Code Groups

- A list of the codes under the CODE GROUP Z0000001 when the CGR DESCRIPTION CUSTOMER COMPLAINTS REASON CODE is created, as shown in [Figure 4.102](#).
- To define the code group profiles, go to SPRO • CRM • BASIC FUNCTIONS • CATALOGS, CODES AND PROFILES • DEFINE CODE GROUP PROFILES. Assign the code group profile to the Z8 catalog, as shown in [Figure 4.103](#) and [Figure 4.104](#).

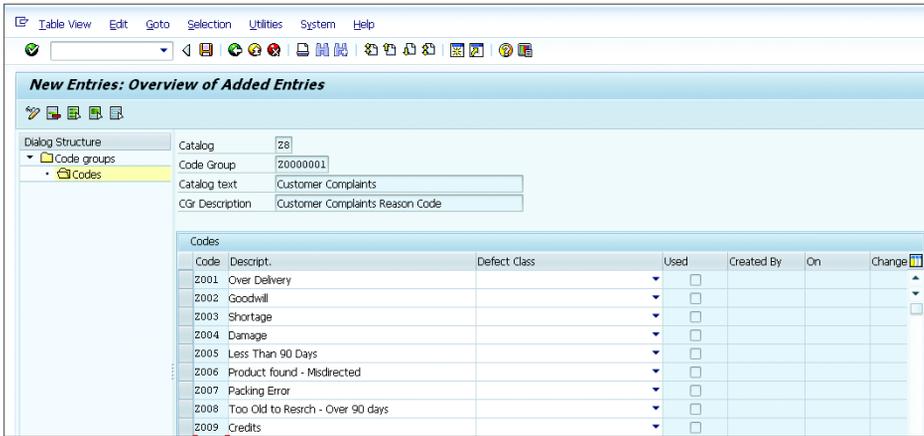


Figure 4.102 Maintaining Codes for the Code Groups

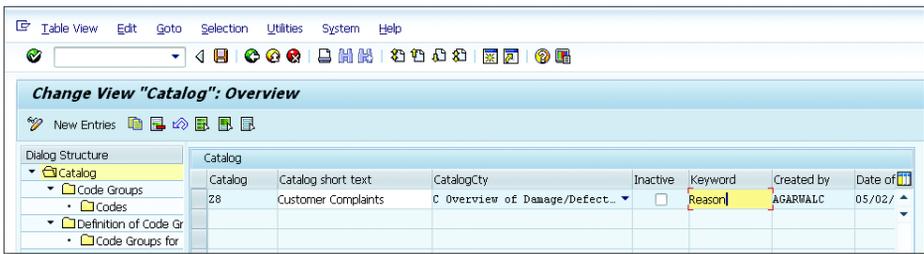


Figure 4.103 Defining Code Group Profiles

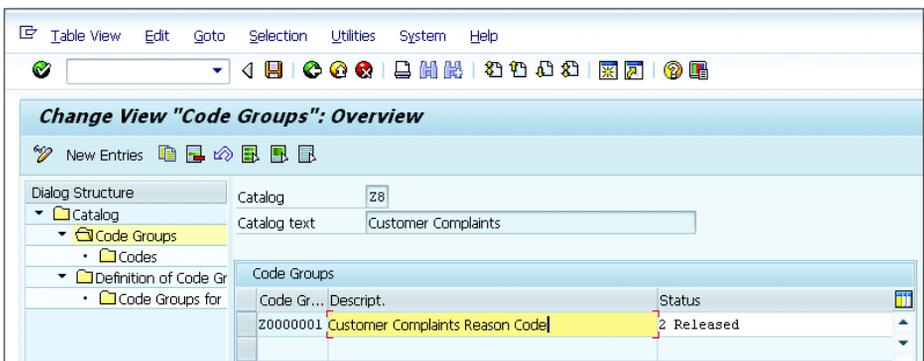


Figure 4.104 Code Group Assignment to the Catalog

5. Create the code group profile (CdGrpPrf1e) for the CATALOG Z8, as shown in [Figure 4.105](#).

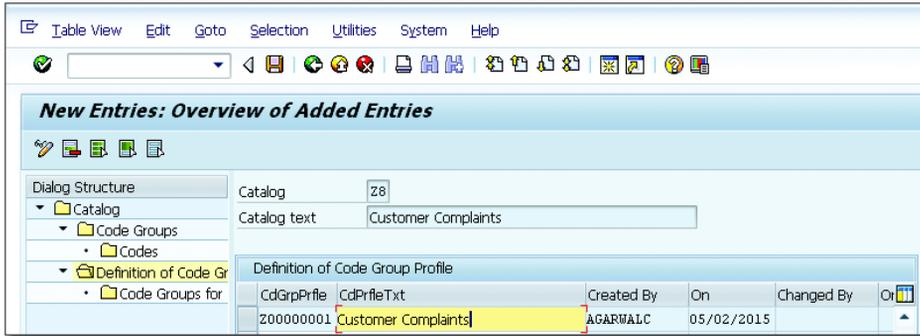


Figure 4.105 Definition of the Code Group Profile

6. Assign the code group to the CODEGRPPROFILE, as shown in [Figure 4.106](#).

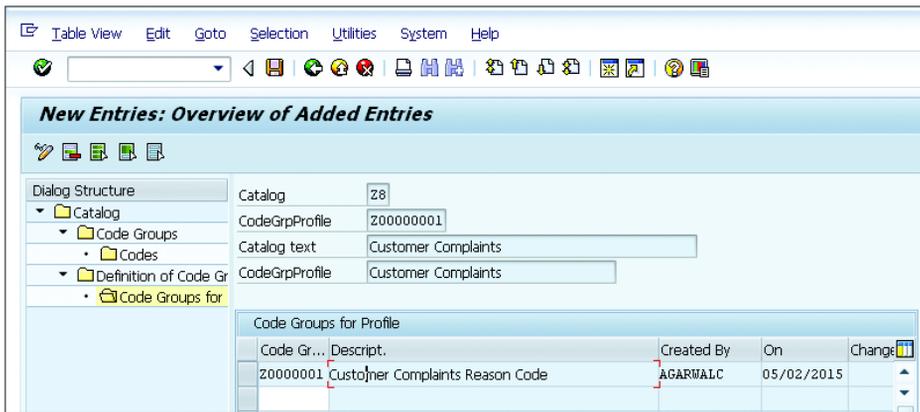


Figure 4.106 Assigning the Code Group to the Code Group Profile

7. Define the subject profiles by going to SPRO • CRM • BASIC FUNCTIONS • CATALOGS, CODES AND PROFILES • DEFINE SUBJECT PROFILES. Create the SUBJ. PROF., which will be assigned with a code group profile that was created in the previous step (see [Figure 4.107](#)).

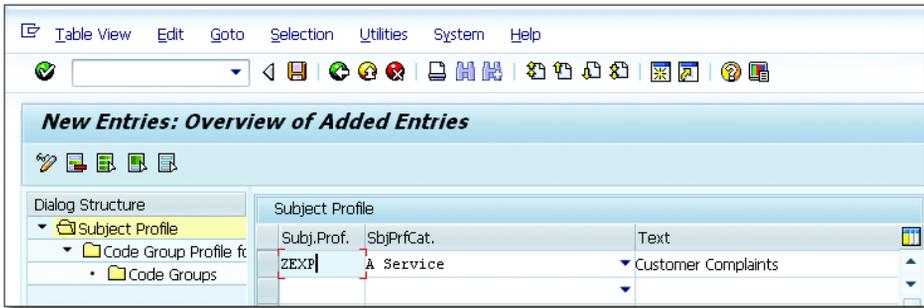


Figure 4.107 Maintaining the Subject Profile

8. The hierarchy level in the SUBJ. PROF., as shown in Figure 4.108, corresponds to the value that you select in this field, which specifies the maximum hierarchy level that a code for this catalog may have in a service process or a complaint. Figure 4.108 and Figure 4.109 show the code group profile assignment to the subject profile and code group assignment to the code group profile, respectively.



Figure 4.108 Assigning the Code Group Profile to the Subject Profile

9. To assign a status profile and a subject profile to the business transaction type, go to SPRO • CRM • BASIC FUNCTIONS • CATALOGS, CODES AND PROFILES • ASSIGN STATUS PROFILE AND SUBJECT PROFILE TO BUSINESS TRANSACTION TYPE. In this step, you assign the subject profile to the business transaction for each status that you've defined in the user status profile. In this way, the system provides

you with possible reasons in the document in the input help, depending on the status you've chosen (see [Figure 4.110](#)).

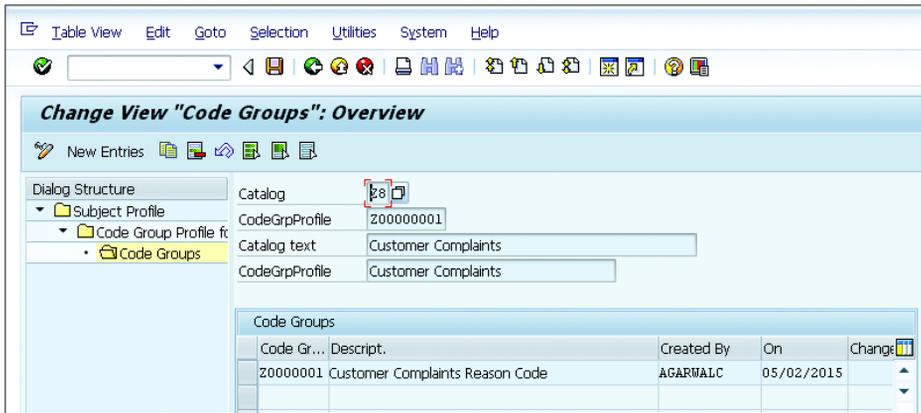


Figure 4.109 Code Group Assignment to the Code Group Profile

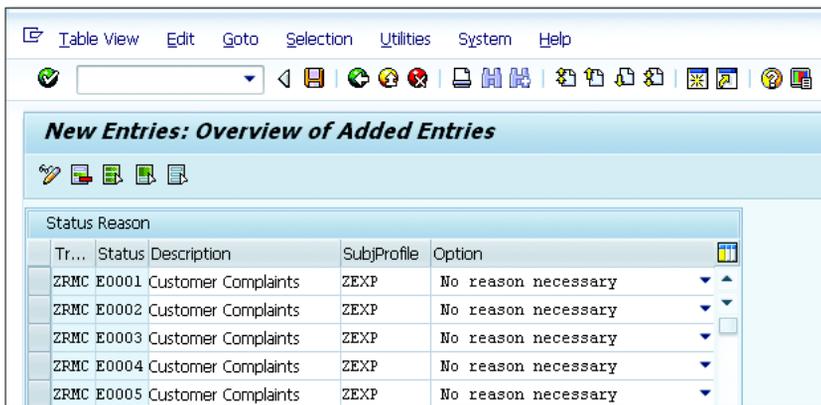


Figure 4.110 Assigning Status to the Subject Profile

10. Assign the SUBJECT PROFILE to the TRANSACTION TYPE, as shown in [Figure 4.111](#). In Customizing for transaction types, choose CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES.
11. Go to the complaints transaction to verify the configuration created in the preceding steps (see [Figure 4.112](#)).

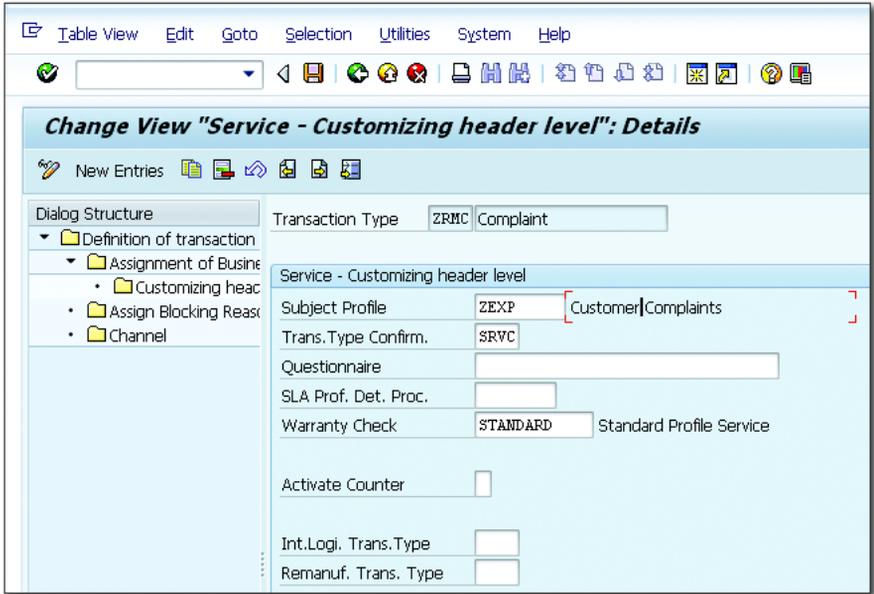


Figure 4.111 Assigning the Subject Profile to the Transaction Type

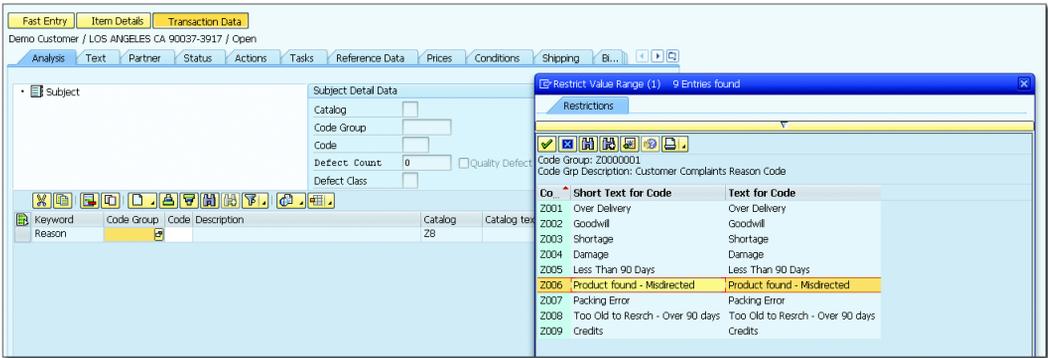


Figure 4.112 Code Groups Shown on the Complaints Transactions

The next step is to continue with the same code group and segregate it to the multi-level categorization on the WebClient UI. We'll discuss multilevel categorization in the next section.

4.7.2 Multilevel Categorization

Multilevel categorization is a tool that helps design the categorization for different business transactions. *Categorization* is the process of identifying the type of issues at multiple levels. Based on the business scenarios, you can have these types of issues on initial levels followed by the outcome in the later levels. For example, categorization levels 1 and 2 identify the type of issue as a shortage, which is then followed by credit at level 3.

The following is a list of transactions where you can implement multilevel categorizations:

- ▶ Service orders
- ▶ Service order templates
- ▶ Confirmations
- ▶ Complaints
- ▶ In-house repair orders
- ▶ Service requests (incidents)
- ▶ Problems
- ▶ Requests for change
- ▶ Knowledge articles
- ▶ Case management
- ▶ Interaction records
- ▶ Email Response Management System (ERMS)

In addition to these transactions, you can have auto completion and item determination based on categories. You can use multilevel categorization to determine business partners in partner functions by using the *Business Rule Framework (BRF+)* or the SAP CRM dispatch functionality.

To configure multilevel categorization, we'll begin by assigning transaction types to the catalog categories:

1. Navigate to SPRO • CRM • CRM CROSS-APPLICATION COMPONENTS • MULTILEVEL CATEGORIZATION • ASSIGN TRANSACTION TYPES TO CATALOG CATEGORIES. On the NEW ENTRIES: OVERVIEW OF ADDED ENTRIES screen, you'll find the following fields (see [Figure 4.113](#)):

- ▶ **FIND RELATED OBJ.:** This activates the functionality where you can search for the similar issue of the same category or the system suggests objects with the same category assignments. If you want to display the related objects, you have to choose **MORE • FIND RELATED** in the business transaction (e.g., incident) in the WebClient UI.
- ▶ **AUTO COMPLETE:** In the category modeler, you can assign service order templates to categories. If you select the relevant category in the business transaction, for example, incident, you can choose **MORE • AUTO COMPLETE** to transfer the data from the relevant service order template.
- ▶ **ITEM DETERM.:** The automatic item determination is relevant for incidents and problems.

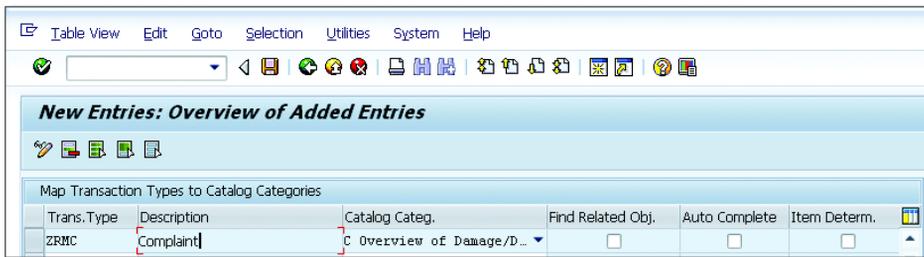


Figure 4.113 Assigning Transaction Types to Catalog Categories

2. In the category modeler, you can assign service products to categories. If you select the corresponding category in the incident or problem and save the business transaction, this linked service product is used as the item in the background. If the system can't determine the item for the corresponding business transaction via the categorization schema, **BADI CRM_SERVICEPROD_BADI (Product Assignment for Creation of Service Items)** is called.
3. To maintain the RFC destinations for the schema import, navigate to **SPRO • CRM • BASIC FUNCTIONS • CRM CROSS-APPLICATION COMPONENTS • MAINTAIN RFC DESTINATIONS FOR SCHEMA IMPORT**.
4. To move the categorization schema from one system to another system, you need to import the schema to the target system. The schema change can't be moved across the system via the standard transport mechanism. You need to maintain the RFC destination that you want to make available for selection to import the schemas in the category modeler. The RFC destination should be

maintained in the target system with the source destination from where you want to import the schema. After the schema is imported to the target system, you need to active that schema in the target system to make it effective (see [Figure 4.114](#)).

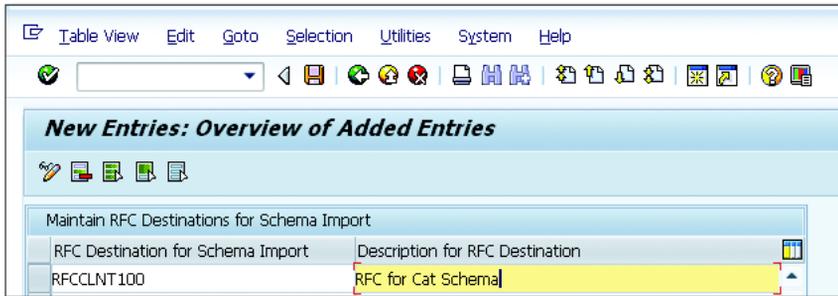


Figure 4.114 Maintaining RFC Destinations for Schema Import

5. Go to business role SERVICEPRO or role IC_MANAGER to create the new CATEGORIZATION SCHEMA as shown in [Figure 4.115](#).

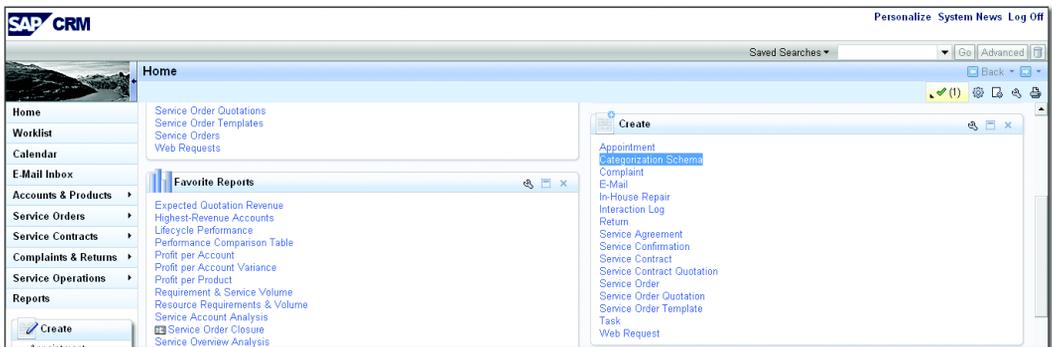


Figure 4.115 Maintaining the Categorization Schema from the Service Professional Business Role

6. The category in this example is the same as the code group and codes created in the previous topic. In this example, there are two levels under the SHORTAGE code: PACKING ERROR and CREDITS. So, let say when the complaints document is created, level 3 will be the outcome of the issue; that is, a customer called for a shortage issue and has to be credited for the shortages of the product. Information on the category schema creation is shown in [Figure 4.116](#).

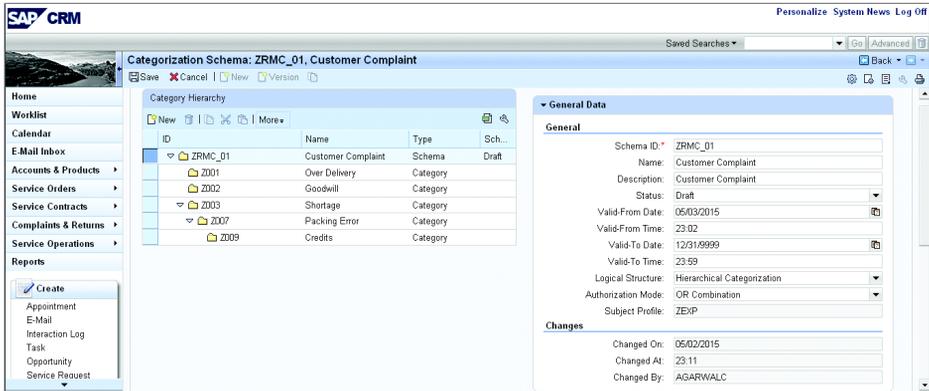


Figure 4.116 Maintaining the Code Groups and Codes in the Categorization Schema with Different Levels

7. In the APPLICATION AREAS section, while creating the categorization schema, assign the APPLICATION ID with a PARAMETER of SUBJECT PROFILE. In this case, ZEXP – CUSTOMER COMPLAINTS is configured as described previously and assigned with the same SUBJECT PROFILE, as shown in [Figure 4.117](#). Within the SCHEMAS PER APPLICATION AREA section, you can see the same categorization schema with various statuses, including DEPLOYED, RELEASED, and ACTIVE, with corresponding VALID-FROM and VALID-TO information.

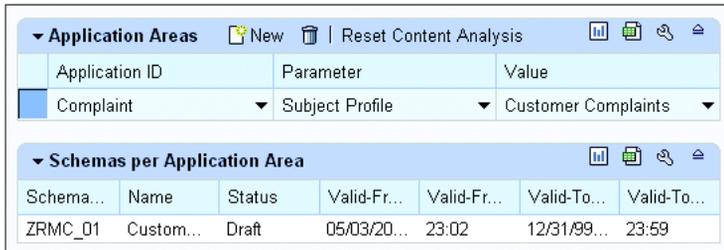


Figure 4.117 Defining the Application Area and Assigning It to the Categorization Schema

8. Activate the CATEGORIZATION SCHEMA by changing the STATUS of the schema from DRAFT to RELEASED, as shown in [Figure 4.118](#).

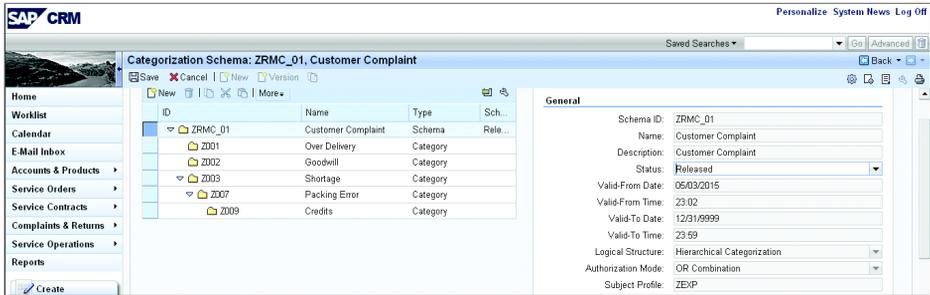


Figure 4.118 Activating the Categorization Schema

- After you've configured the categorization schema, create the complaints document for the customer. When a customer calls to request a credit for the shortage scenario, the customer service representative creates a complaint and adds the CATEGORY 1 as SHORTAGE, CATEGORY 2 as PACKING ERROR, and CATEGORY 3 as CREDIT, which is the outcome of this issue. Save the document, and trigger the follow-up action to give the credit to the customer (see Figure 4.119).

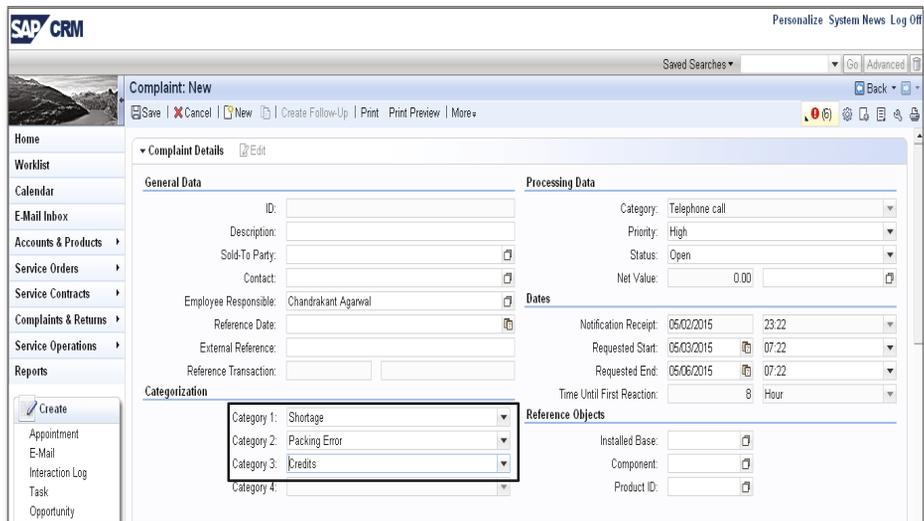


Figure 4.119 Categorization Data with Different Levels

- The categorization schema can be imported to different systems within the system landscape. The categorization schema can be imported via RFC as well.

For our purposes, go to the target system where you want to import the categorization schema, and access the SEARCH: CATEGORIZATION SCHEMAS screen via the SERVICEPRO business role. Click on IMPORT, as highlighted in [Figure 4.120](#).

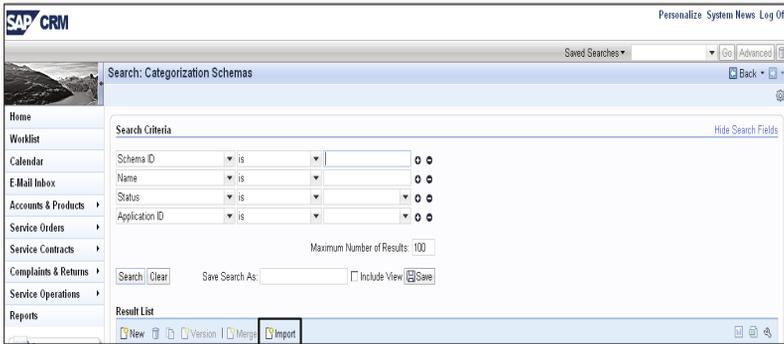


Figure 4.120 Importing the Categorization Schema to a Different System

11. Select the SOURCE search criteria, and enter the RFC destination you've configured to import the categorization schema to the target system. Click the SEARCH button, and you'll see the list of the schema from the source system. Select the schema, and click on IMPORT, as shown in [Figure 4.121](#).

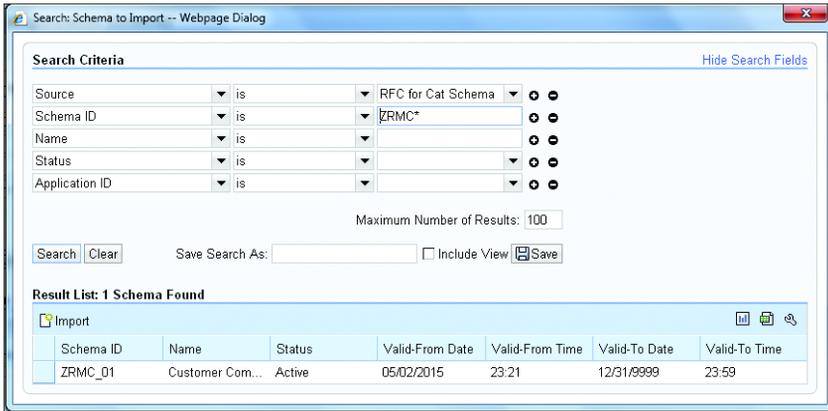


Figure 4.121 Source Selection and Categorization Schema Selection for Import

The new categorization schema is now ready for you to use in the target system. Make sure to activate the schema after import.

Import and Export Category Schema

You can import and export the category schema from Transaction CATEGOTOOL. Activate the schema after import.

4.7.3 Rule Modeler

The *Rule Modeler* tool is used for achieving certain business functions that are carried out by an organization on a frequent basis. It consists of *rule policies* that help to invoke specific actions automatically as soon as predefined conditions are met.

Most frequently, the Rule Modeler is used for the Email Routing to Agent Inbox function, Order Routing to Agent Inbox function, and triggering alerts on the IC application.

The Rule Modeler has a list of repositories or the context for which rule policies are applicable. The following is a list of contexts that are accessed through the WebClient UI:

- ▶ Account and contact management
- ▶ Approval management
- ▶ Bounce management
- ▶ Checklist determination
- ▶ Checklist step partner determination
- ▶ ERMS
- ▶ Intent-driven interaction
- ▶ Lead distribution
- ▶ Opportunity distribution
- ▶ Order routing
- ▶ Service documents
- ▶ Service order/complaint dispatch
- ▶ Service Request Management

Let's take a practical example of a Rule Modeler configuration where customer service navigates to the interaction history after receiving an alert on the SAP CRM IC screen. The IC event is a confirmed business partner in this scenario.

Follow these steps:

1. Log in to the IC_MANAGER business role. Follow the menu path, PROCESS MODELING • ALERTS (see [Figure 4.122](#)). There are SAP-delivered alerts; however, in cases where you have some specific business scenario, you can configure it accordingly.

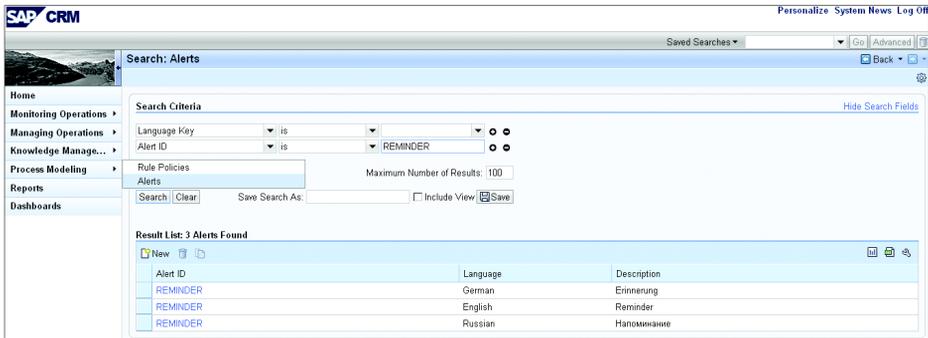


Figure 4.122 Maintaining Alerts via the IC_MANAGER Business Role

2. [Figure 4.123](#) shows the navigation object of interaction history display, which you can navigate to from the alert message. The alert message here is TIME TO WRAP UP!.

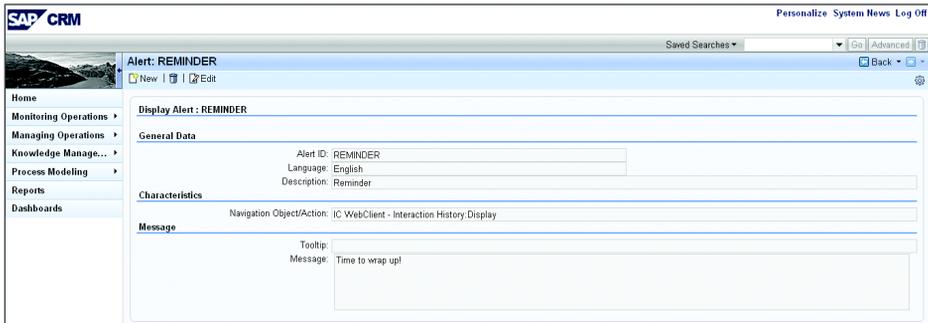


Figure 4.123 Alert Details with the Message

3. Create a rule policy Z01_Reminder to assign the reminder alert. Navigate to RULE POLICY, and click the NEW button to create your own rule. You can assign the IC WebClient UI profile to the Z01_REMINDER. In this case, IC_AGENT is the

business role assigned to the rule policy. Assign BPCONFIRMED in the IC EVENTS section to the rule policy (see [Figure 4.124](#)).

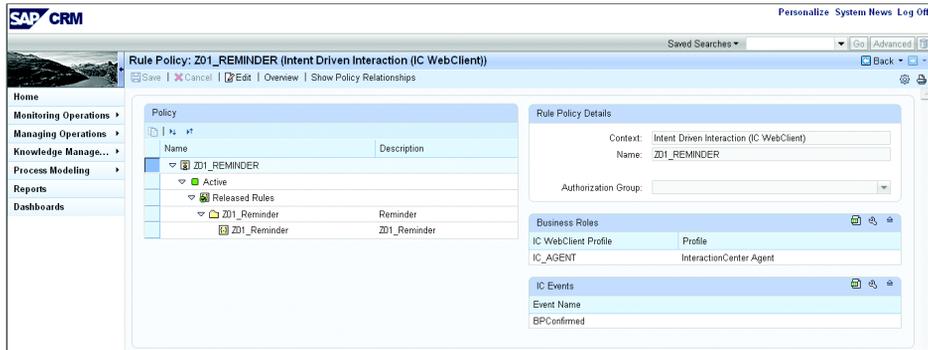


Figure 4.124 Maintaining the Rule Policy Trigger Point

4. Create the DRAFT RULES and subnode to add the RULE DETAILS (i.e., CONDITIONS and ACTIONS). In this example, the conditions are if the current event equals business partner confirmed, then an action reminder is triggered with a delay of 60 seconds. This will notify the customer service representatives to wrap a call and jump to interaction history when accessing the TIME TO WRAP UP! link on the alert screen (see [Figure 4.125](#)).

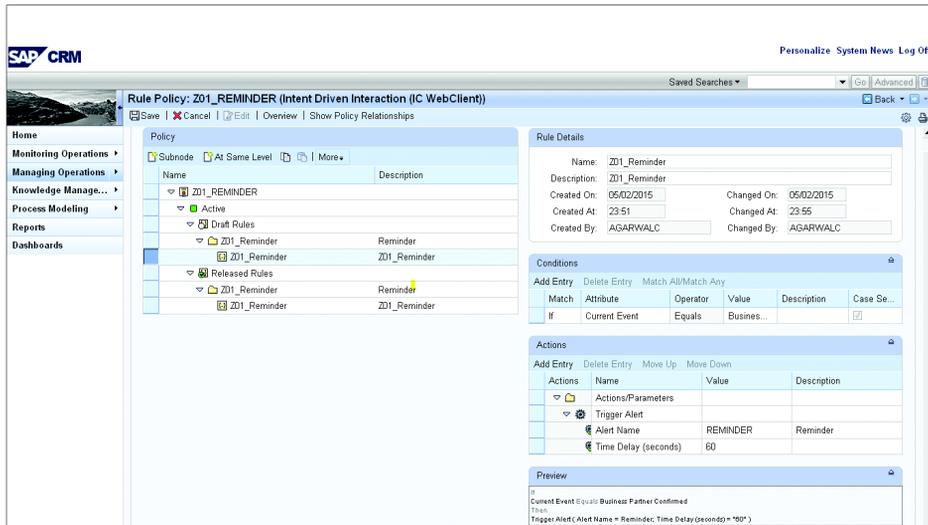


Figure 4.125 Maintaining the Rule Policy with the Alert Details

5. Click **MORE • CHECK DRAFT RULES**, and then select **RELEASE DRAFT RULES AND SAVE** (see [Figure 4.126](#)).

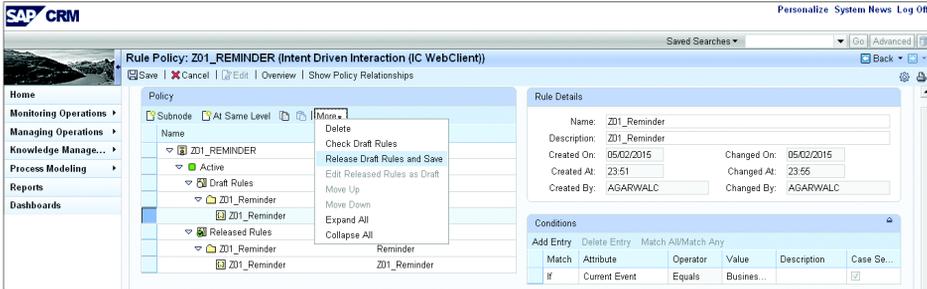


Figure 4.126 Checking the Draft Rules and Releasing It

6. Go to the **ACCOUNT IDENTIFICATION**, confirm one of the accounts on the business role **IC_AGENT**, and continue to work on that account. You'll see the alert shown to the customer service representative after 60 seconds as "Time to wrap up!" (see [Figure 4.127](#)).



Figure 4.127 Alert Area on the Account Identification

7. Click on the alert link, and it will take you to the **SEARCH: CUSTOMER INTERACTIONS** screen of the confirmed account. This will show the list of interactions for this customer (see [Figure 4.128](#)).

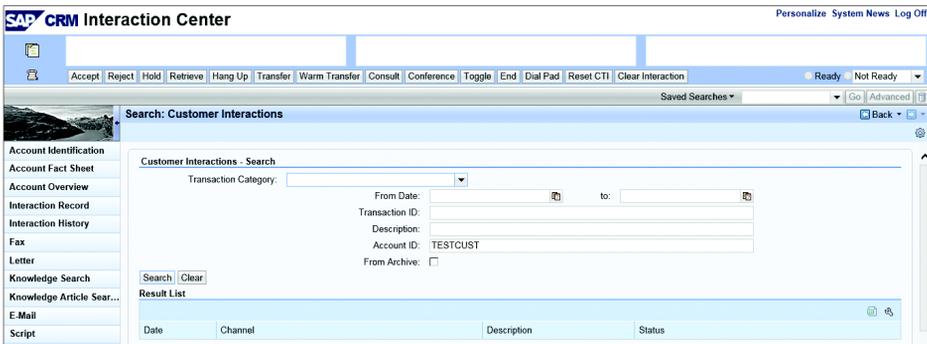


Figure 4.128 Customer Interaction Details

This section discussed the service functions for business transactions and provided a good understanding of some service functions and IC functions that will be covered in detail in the following chapters.

4.8 Special Functions in Business Transactions

In this section, we'll identify two special functions that can be performed in business transactions: PPRs and free goods.

4.8.1 Partner Product Range

Partner product ranges (PPR) identify sets of products that can be sold to a specific customer for a specific period of time. This can also be restricted at the sales organization level. In addition to this, PPR allows you to prevent certain products from being sold to certain customers. Exclusion is controlled by the `EXCLUSION` checkbox for a PPR. The `EXCLUSION` checkbox indicates that the products contained therein can't be sold to the listed business partners during the validity period.

In a real-life scenario, an organization might not want to sell certain products to customers or it might want to sell certain product lines or products to customers. This functionality helps any organization overcome these kind of requirements.

Further use of PPRs includes the following:

- ▶ **Interaction Center**

Product proposals can come from PPRs. After a business partner has been identified in IC, it's possible to display all products that are currently valid for that partner.

- ▶ **Top n products**

Top n product lists (from marketing) are created and saved as PPRs.

- ▶ **Contracts**

Products in value and quantity contracts are saved as PPRs.

- ▶ **Catalog views**

Catalog views are PPRs, such as customer-specific views for target groups or business partners in a web shop.

PPR master data is set up from a combination of business partner, products, and validity periods. When a customer orders a product that isn't maintained in the PPR master data, and some of the products are marked as an exclusion on the master record, the PPR search fails and shows the corresponding message on the order screen. This can be useful, for example, if an organization has multiple product lines and wants to sell certain products to certain customers due to seasonal demand or due to certain customers being restricted to only certain products based on business rules and policies.

In the following sections, we'll look at how to configure PPRs to satisfy business requirements.

Define General Settings for Partner/Product Range

The CHECK PPRs IN BUSINESS TRANSACTIONS AND APPLICATIONS indicator activates the check for PPRs within business transactions and when the Application Programming Interface (API) is called by other applications (see [Figure 4.129](#)).

The screenshot displays the SAP configuration window titled "Change View 'Overall Control Table for Partner/Product Ranges (PPRs)'. The window has a menu bar with options: Table View, Edit, Goto, Selection, Utilities, System, and Help. Below the menu is a toolbar with various icons. The main content area is divided into sections:

- General PPR Settings for the Business Transaction and other Applications:**
 - Check PPRs in Business Transactions and Applications
- PPR Type Assignment for Business Transaction Types and other Applications:**
 - PPR Type for Product Catalog Views: 0002 Product Catalog View
 - PPR Type for Purchase Contracts: (empty dropdown)
 - PPR Type for Sales Contracts: 0003 Sales Contracts (internal)
 - PPR Type for Service Contracts: 0004 Service Contracts
 - PPR Type for Activity Template: 0020 Proposal for Activity Template
 - PPR Type for Design Registration: ODRG CMS Design Registration: PPR Type
 - PPR Type for Marketing Planner: 0012 Marketing Project
 - PPR Type for Channel Commerce: 0009 Channel Commerce

Figure 4.129 General Settings for Partner/Product Ranges

If you set the indicator, the system checks whether the combinations of business partners and products entered in the business transactions are valid. If you don't set the indicator, no check takes place in the business transactions, and you can enter any business partner/product combination you want.

Follow the configuration path, SRPO • CRM • MASTER DATA • PRODUCT/PARTNER RANGE • DEFINE GENERAL SETTINGS FOR PARTNER/PRODUCT RANGE. Under PPR TYPE ASSIGNMENT FOR BUSINESS TRANSACTION TYPES AND OTHER APPLICATIONS, you define which PPR types are used by default in the various application areas (catalog views, purchase contracts, etc.).

Define Partner/Product Range Types

In this step, you have to define the PPR types and configure them based on your business requirement. In this example, certain products can be ordered, and others are restricted for a specific customer. Without this configuration being in place, you can't perform PPR functionality.

The PPR type defines the attributes and characteristics of a PPR and controls the applications and business transactions in which PPRs of this type can be used. PPRs can be controlled at the organization data level. PPRs can be defined at the sales organization, transaction type, and possible item references (e.g. product, product catalog view, marketing segment, and date: from/to).

In this step, enter a unique key and a description for the PPR type. You also want to define whether PPRs of this type can be edited, whether they are checked during transaction processing, and whether they can be used for product proposals. For our example, we've created the ZPPR PPR type, which we're going to assign to the transaction type. [Figure 4.130](#) shows the PPR TYPE ZPPR configuration.

The following is additional information available to configure on the CHANGE VIEW "PPR TYPES": DETAILS screen:

► PPR RANK PROFILE

You can choose the rank profile that you want to use for your PPR type. The rank profile consists of ranks that are created to sequence the list of PPRs for the same business partner and products that fall under the same validity period. The lower the ranking number, the higher the priority of a PPR.

► PROFILE FOR ALTERNATIVE PRODUCT IDS

For product references, you can choose a profile for alternative product IDs.

► GENERATE ID INTERNALLY

You define whether the IDs for PPRs of this PPR type are to be generated internally. If the IDs are to be generated internally, you must also choose a number range object (OBJECT NAME) and a number range (NUMBER RANGE No.). The PPR number ranges can be configured in the path, SAP NETWEAVER • APPLICATION SERVER • BASIC SERVICES • UNIFIED KEY MAPPING SERVICE (UKMS) • KMS CONNECTION TO SAP NETWEAVER PROCESS INTEGRATION • DEFINE NUMBER RANGE OBJECT.

Now, follow the configuration path, CRM • MASTER DATA • PRODUCT/PARTNER RANGE • BASIC SETTINGS • DEFINE PARTNER/PRODUCT RANGE TYPES to define the partner and product range types (see [Figure 4.130](#)).

The screenshot displays the 'Change View "PPR Types": Details' window in SAP CRM. On the left, a 'Dialog Structure' tree shows the navigation path: PPR Types > PPR Product Referer > Allowed PPR Type. The main area is divided into several sections:

- PPR Type:** ZPPR PPR Check on Sales Order
- Usage:**
 - Use in PPR Check
 - Use PPRs for Product Proposal
- Maintenance:**
 - PPR Editable
- Application:** CRMO CRM Business Transaction
- PPR Rank Profile:** (Empty dropdown)
- Profile for Alternative Product IDs:** (Empty dropdown)
- Number Range:**
 - Generate ID internally
 - Object Name: CRM_PRP PPR Number Range Object
 - Number Range No.: 01

Figure 4.130 PPR Types Details Screen

On the CHANGE VIEW "PPR ORGANIZATIONAL DATA REFERENCE TYPES": OVERVIEW screen, you can specify which objects (partner function, transaction type, sales organization, service organization) and PPRs of this type can be defined (see [Figure 4.131](#)). These objects are displayed as header assignment blocks on the PARTNER/PRODUCT RANGES page.

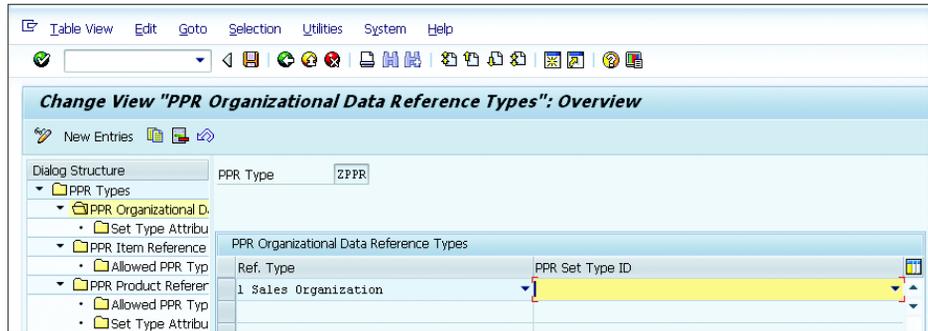


Figure 4.131 Assigning Sales Organization Reference Types to the Partner Product Range Type

On the CHANGE VIEW "PPR ITEM REFERENCE TYPES": OVERVIEW screen, you define which types of references are possible for the PPR items. The following options are available:

- ▶ REFERENCES TO BUSINESS PARTNERS, PRODUCTS, AND VALIDITY PERIODS
- ▶ REFERENCES TO OTHER PARTNER/PRODUCT RANGES

If you choose REFERENCES TO OTHER PARTNER/PRODUCT RANGES then you also have to specify the PPR types allowed under ALLOWED PPR TYPES FOR PPR ITEM REFERENCES.

On the CHANGE VIEW "PPR PRODUCT REFERENCE TYPES": OVERVIEW screen, under the PPR PRODUCT REFERENCE TYPES section, you can define which product references are possible for the chosen PPR type. These references are displayed as assignment blocks on the PARTNER/PRODUCT RANGE ITEM page. For example, you can allow references to products, product hierarchies, IBase headers, product rules, and other PPR products.

[Figure 4.132](#) shows the example ZPPR PPR type scenario.

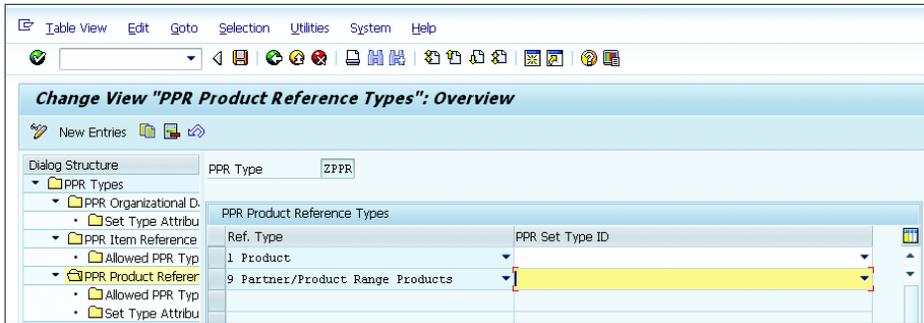


Figure 4.132 PPR Product Reference Types Screen

If you define other PPR products (i.e., all the products of a PPR can be referenced), you must specify the PPR types allowed on the CHANGE VIEW “ALLOWED PPR TYPES FOR PPR PRODUCT REFERENCES”: OVERVIEW screen (see [Figure 4.133](#)).

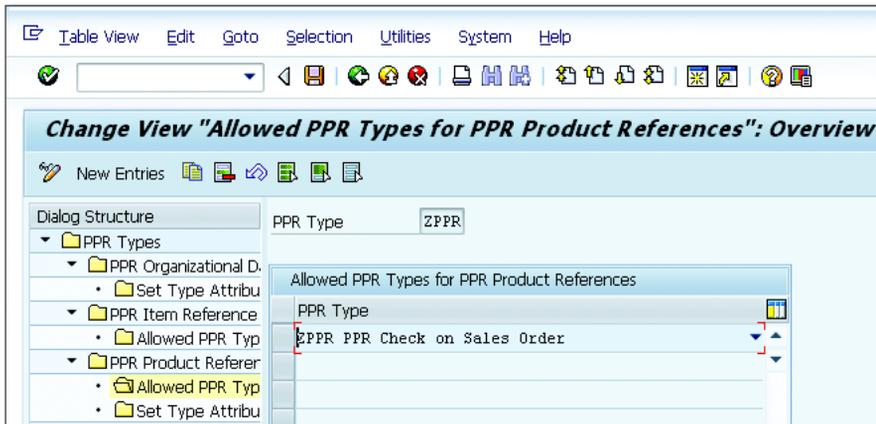


Figure 4.133 Allowed PPR Types for PPR Product References Screen

The CHANGE VIEW “PPR BUSINESS PARTNER REFERENCE TYPES”: OVERVIEW screen is similar to the PPR PRODUCT REFERENCE TYPES screen, in that you can define which business partner references are possible for the chosen PPRs (see [Figure 4.134](#)). These references are displayed as assignment blocks on the PPR item pages. For example, you can allow references to business partners, business partner rules, marketing segments, and other PPR business partners.

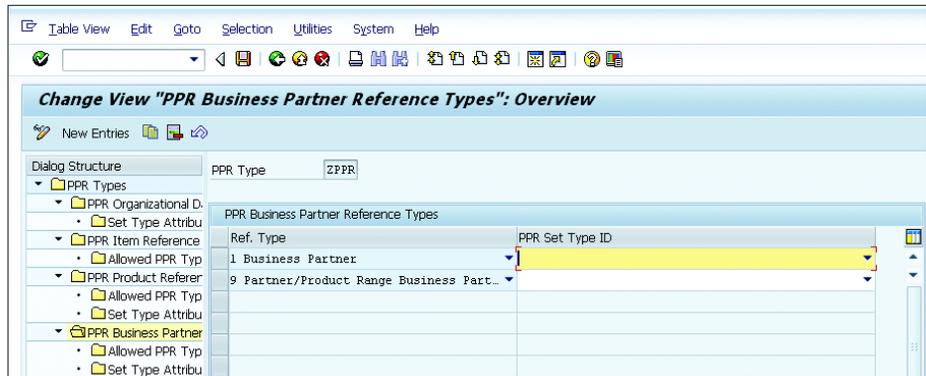


Figure 4.134 PPR Business Partner Reference Types Screen

If you define other PPR business partners (i.e., all business partners of a PPR can be referenced), then you must specify the PPR types allowed under the CHANGE VIEW "ALLOWED PPR TYPES FOR PPR BP REFERENCES": OVERVIEW screen (see [Figure 4.135](#)).

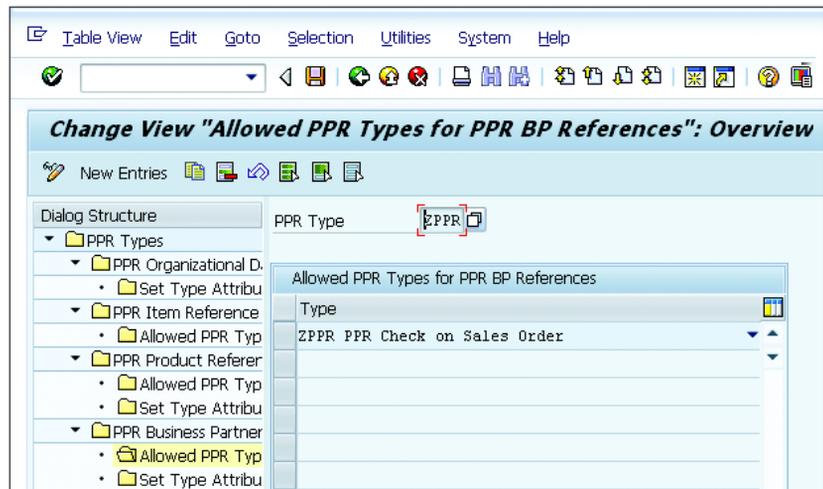


Figure 4.135 Allowed PPR Types for PPR BP References Screen

The CHANGE VIEW "PPR VALIDITY PERIOD REFERENCE TYPES": OVERVIEW screen allows you to define which types of validity period references are possible for the

chosen PPR type (see [Figure 4.136](#)). These references are displayed as assignment blocks on the PPR item pages.

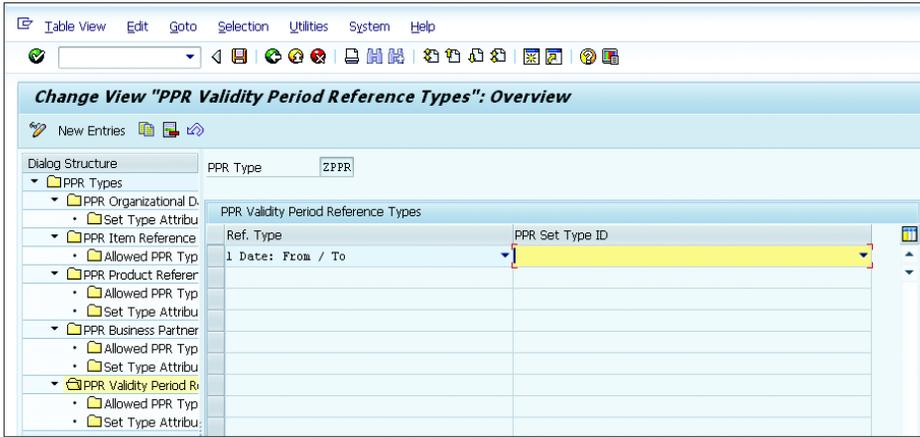


Figure 4.136 PPR Validity Period Reference Types Screen

Define Transaction Types and Applications Relevant for Check

In this section, we'll continue with our example, and assign the PPR type to the transaction type. Because our business case is to activate this functionality for the sales transaction, [Figure 4.137](#) shows the assignment of PPR type to the TRANSACTION TYPE TA. To execute the PPR scenario, follow the configuration path, SPRO • CRM • MASTER DATA • PRODUCT/PARTNER RANGE • BASIC SETTINGS • DEFINE TRANSACTION TYPES AND APPLICATIONS RELEVANT FOR CHECK.

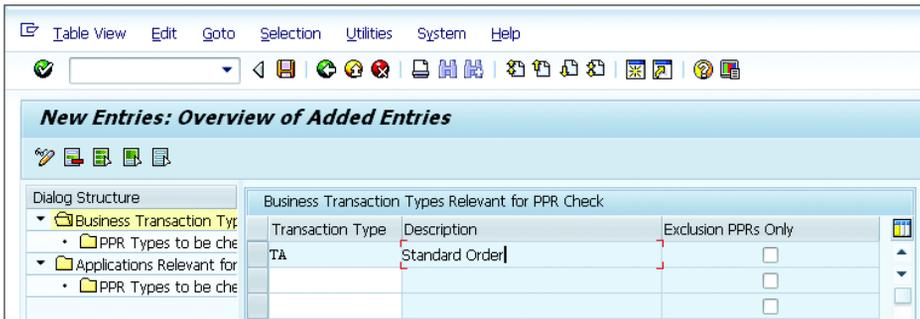


Figure 4.137 Business Transaction Types Relevant for the Partner Product Range Check

In this step, you assign the PPR type created for this configuration to the transaction type. This configuration enables the business transaction to include or exclude specific products for a specific customer (see [Figure 4.138](#)).

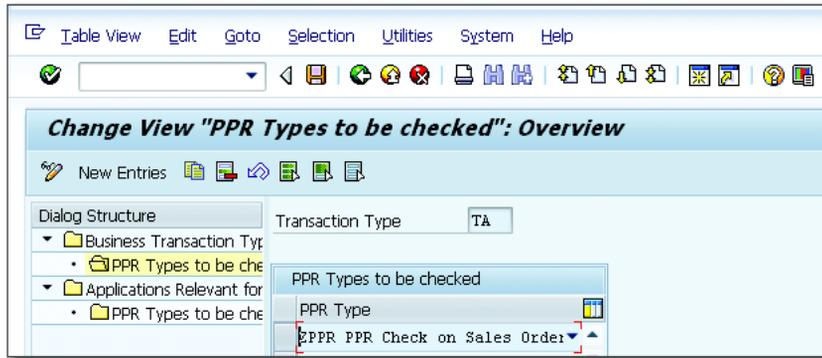


Figure 4.138 PPR Type Assigned to the Transaction Type

If you activate the exclusion PPRs ONLY indicator within DEFINE TRANSACTION TYPES AND APPLICATIONS RELEVANT FOR CHECK, the system checks solely for PPRs that explicitly exclude the relevant product for the relevant business partner, validity period and organization data. If the product isn't excluded by a PPR, it's allowed in the business transaction.

If the indicator isn't set, the system checks if there is a valid PPR for which the relevant combination of product, business partner, validity period, and organization data is allowed. Only if a valid PPR is found is that product allowed in the business transaction.

Access Partner Product Range Master Data

The next step in the process is to access the PPR master data to maintain the PPR master record using Transaction CRMM_PPR.

On the CHANGE PARTNER/PRODUCT RANGE screen, under the HEADER section, enter the organization data and activate the STATUS of the PPR master record (see [Figure 4.139](#)). Under the ITEM section, add the partner to the REFERENCE TYPE BUSINESS PARTNER, as shown in the [Figure 4.140](#).

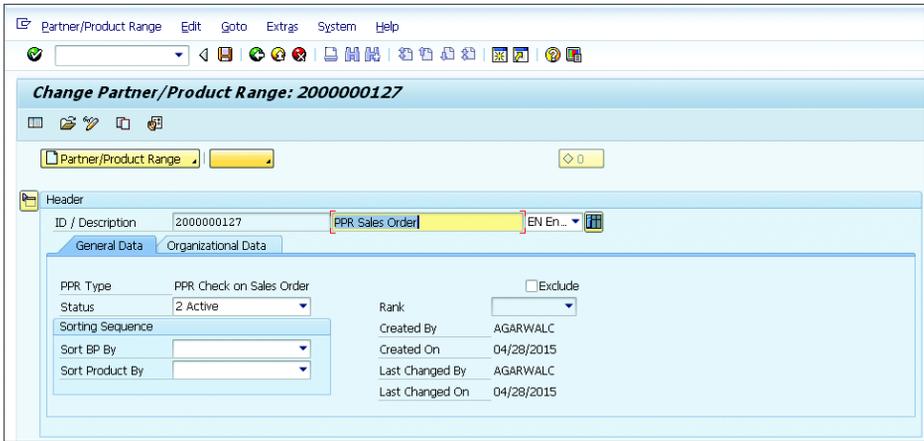


Figure 4.139 Maintaining Partner Product Range Master Data

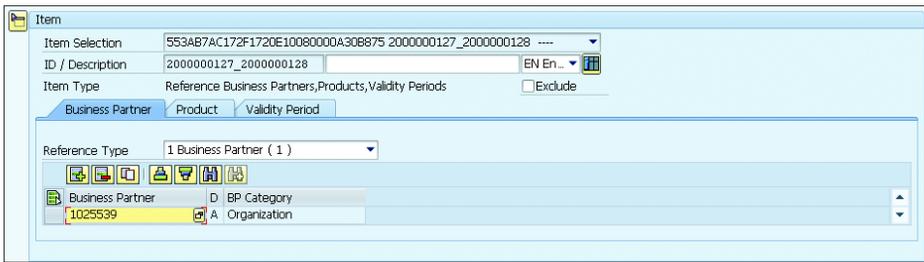


Figure 4.140 Assigning the Business Partner to the Partner Product Range Master Data

The product is now added to the PPR master data with Business Partner 100000 (see Figure 4.141).

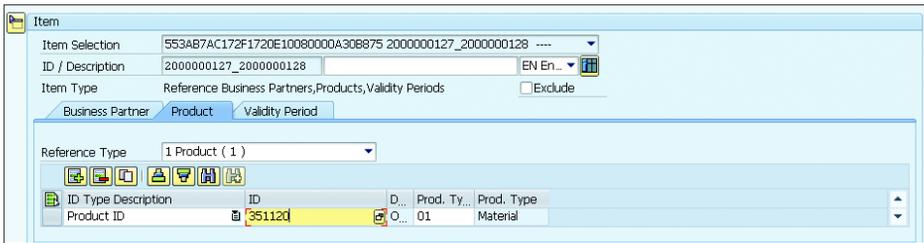


Figure 4.141 Product Assignment to the Partner Product Range Master Data

The validity period is added to the PPR master data, as shown in Figure 4.142.

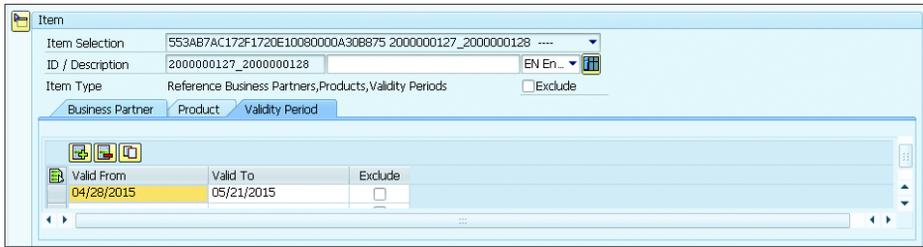


Figure 4.142 Validity Period Assignment

Create the Sales Order

Now let's create the sales order with the master data set up for the PPR type and then add the product in the sales order that isn't maintained in the PPR master record. The results are shown in [Figure 4.143](#). The product that is included in the PPR list doesn't show any error for line ITEM 10, whereas the error occurred for line ITEM 20 because the product 629670 isn't listed in the PPR type master data.

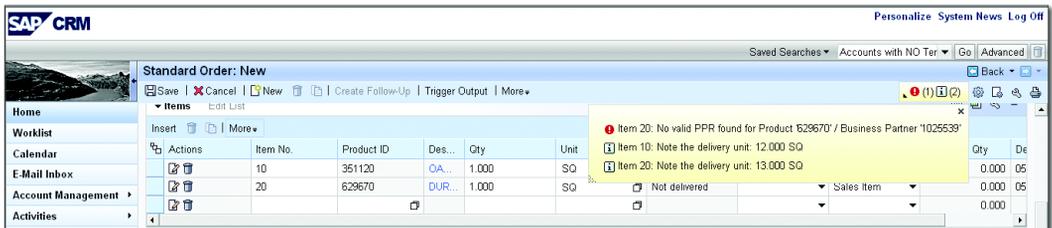


Figure 4.143 Error Message for a Product Not Included in the Partner Product Range Master Data

4.8.2 Free Goods

Free goods can be offered to customers when they order a specific quantity. Free goods can be broken down into two types:

► Inclusive free goods

In this scenario, the customer receives a discount on some products when the customer orders a specific quantity limit. For example, the quantity limit to get the free goods for the customer is 10EA. When the customer orders 10EA, he is charged with 9EA and gets 1EA free of cost.

► **Exclusive free goods**

In this scenario, the customer receives free goods in addition to the ordered product. When the customer orders 10EA, he is charged with 10EA and gets the 11th product free of charge.

For purposes of an example, let's consider a scenario where we want to give a customer 1KG of a product free of charge when the customer orders 100KG of the product.

The following steps show you how to configure a standard free goods example (you can create custom tables to suit the business needs):

1. Create a condition table. Navigate to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • FREE GOODS • SET UP FREE GOODS • CREATE CONDITION TABLES. In this example, it's standard condition table SAP010, which contains the fields SALES_ORG, DIS_CHANNEL, SOLD_TO_PARTY, and PRODUCT (see [Figure 4.144](#)).

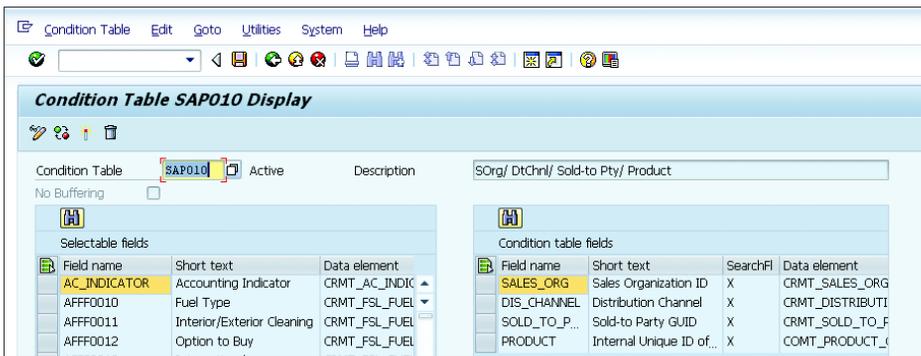


Figure 4.144 Condition Tables for Free Goods

2. To create an access sequence, navigate to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • FREE GOODS • SET UP FREE GOODS • CREATE ACCESS SEQUENCES. Similar to the pricing configuration, you have to create the access sequence for the free goods determination. [Figure 4.145](#) and [Figure 4.146](#) show the access sequence screen with the table assigned to it.

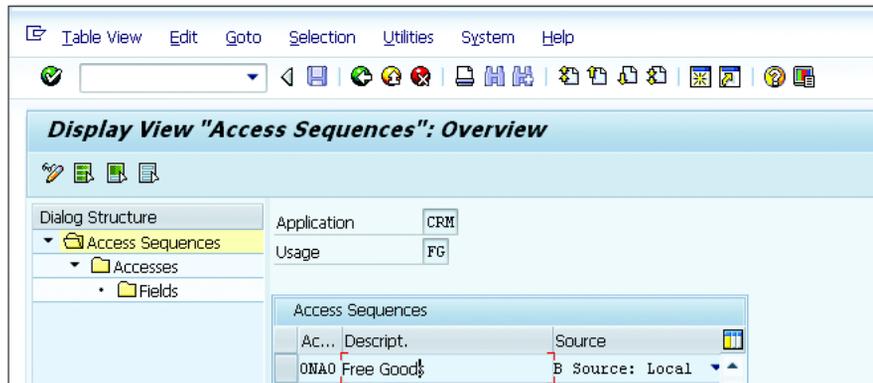


Figure 4.145 Access Sequence for Free Goods

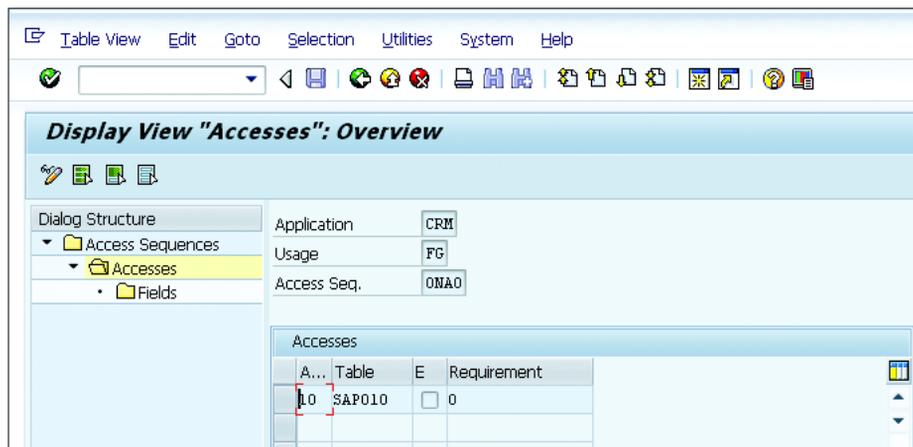


Figure 4.146 Assigning the Table to the Access Sequence

3. Create the condition type by navigating to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • FREE GOODS • SET UP FREE GOODS • CREATE CONDITION TYPES. Within this step, you create the condition type for free goods and assign the access sequence to the condition type. [Figure 4.147](#) shows the condition type configuration for the free goods determination.

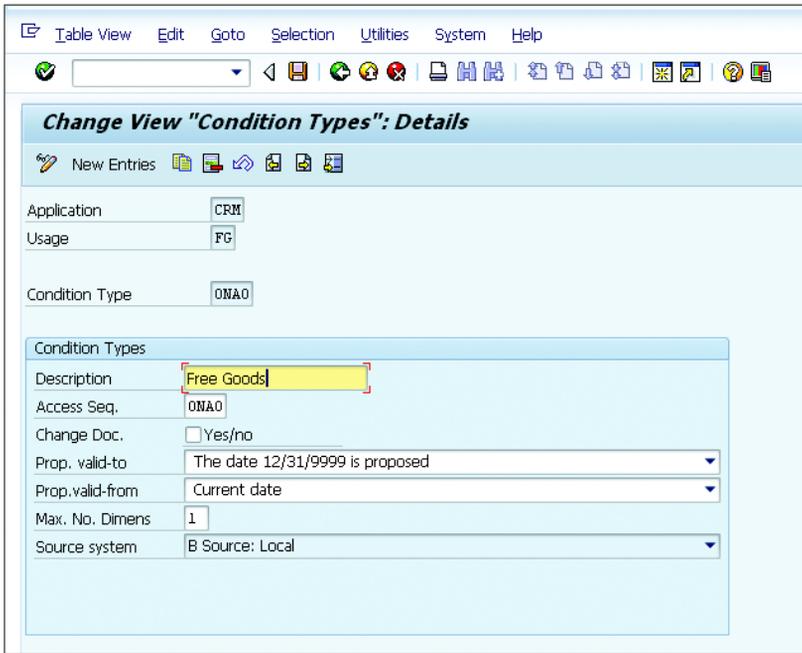


Figure 4.147 Condition Type for Free Goods

4. Create the free goods determination procedure similar to the pricing procedure. Navigate to SAP CRM under CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • FREE GOODS • SET UP FREE GOODS • CREATE FREE GOODS DETERMINATION PROCEDURE. Assign the condition type to the free goods determination procedure, as shown in Figure 4.148 and Figure 4.149.

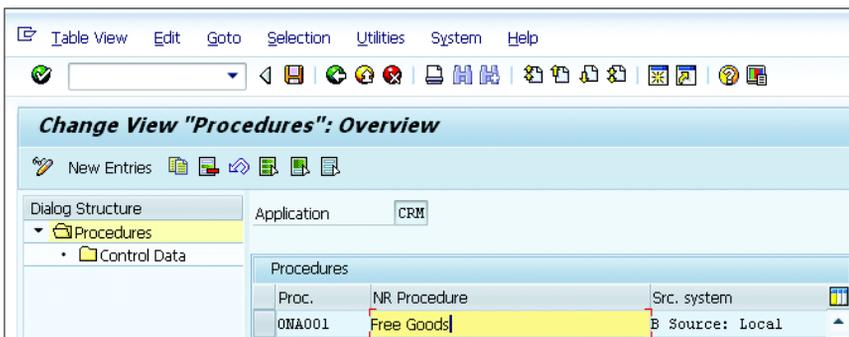


Figure 4.148 Free Goods Determination Procedure

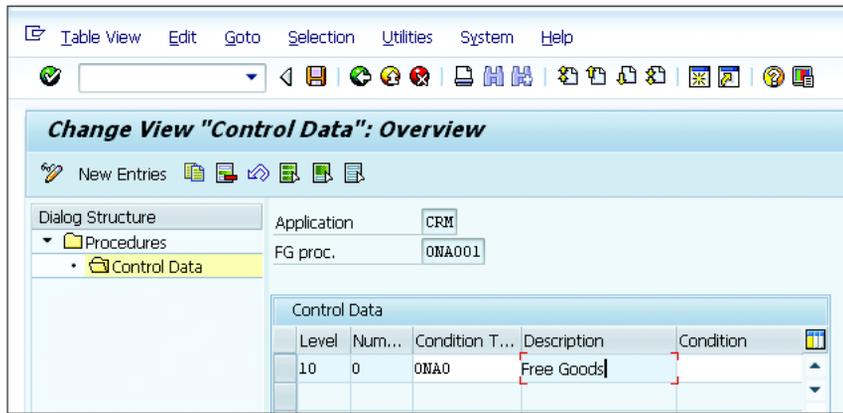


Figure 4.149 Condition Type within the Free Goods Determination Procedure

- Assign the free goods determination procedure similar to the campaign determination procedure by navigating to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • FREE GOODS • SET UP FREE GOODS • ASSIGN FREE GOODS DETERMINATION PROCEDURE. You create the new entry and add the free goods determination procedure with the combination of sales area, customer pricing procedure, and document pricing procedure (see [Figure 4.150](#)).

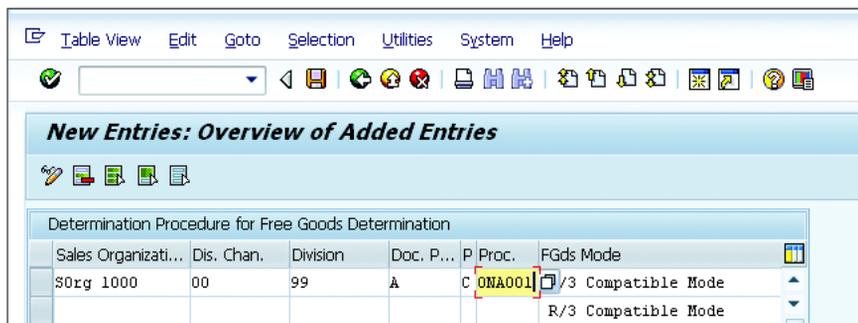


Figure 4.150 Free Goods Determination Assignment

- Add the condition type and condition table to your condition maintenance group via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • CONDITIONS AND CONDITION TECHNIQUE • CONDITION TECHNIQUE: BASICS • CREATE MAINTENANCE GROUP. Create the condition maintenance group

and assign the condition type to it. This configuration helps to create the condition record for the free goods maintenance in the SAP CRM system (see [Figure 4.151](#)).

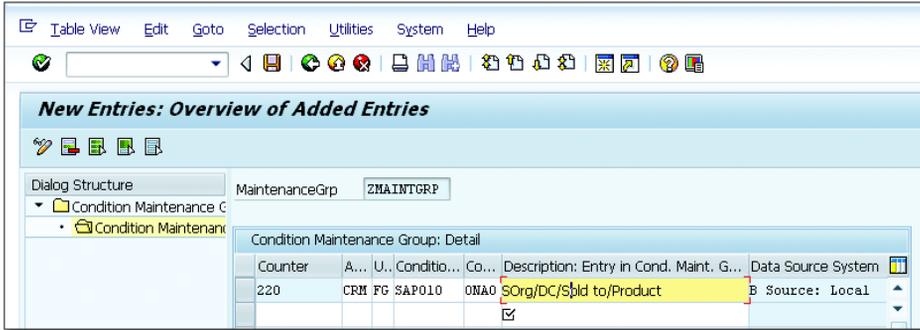


Figure 4.151 Maintaining the Maintenance Group for Free Goods Condition Type

7. Maintain the conditions for every 100KG of the product ordered so the customer gets 1KG free of charge (see [Figure 4.152](#)).

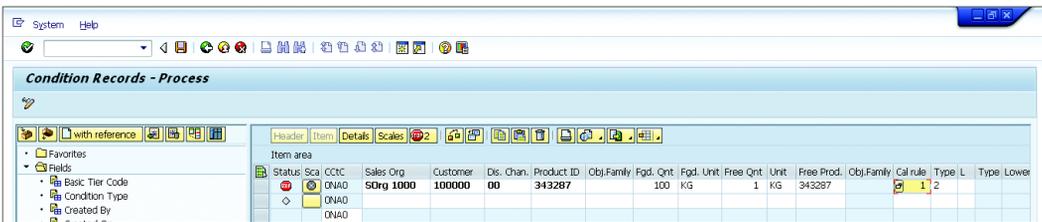


Figure 4.152 Condition Record Maintenance

8. Create the sales order for the customer maintained in the condition record. The product with 100KG or more is shown in [Figure 4.153](#). You'll see that the same item appears as the subitem with ITEM No. 10 and has 100KG with 0 as the price (see [Figure 4.153](#) and [Figure 4.154](#)).

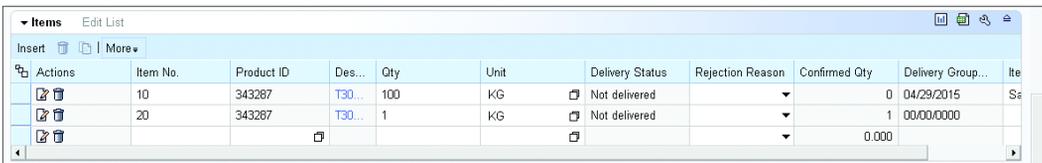


Figure 4.153 Sales Order with Free Goods Satisfying Conditions

Shipping and Billing		Item Value	
Request. Deliv. Date:	04/29/2015	Net Value per Unit:	0.00 USD
Delivery Status:	Not delivered	Net Value:	0.00 USD
Total Qty Delivered:	0	Gross Value:	0.00 USD
Total Qty Billed:	0	Tax:	0.00 USD

Figure 4.154 Subitem with Zero Price

Load Condition Records

You can load the condition record and configuration data from SAP ERP. In the preceding example, SAP CRM is considered the leading system.

This section covered the specialized PPR and free goods business transaction functions. PPR gives organizations the option to restrict customers from ordering certain items. This section also covered the free goods functionality through an in-depth example.

4.9 Summary

This chapter on business transactions in SAP CRM provides key concepts of what business transactions are, how they are defined, how they are linked to items in transactions, and the various profiles assigned to business transactions. We also covered some of the service functions, such as catalogs, codes, and profiles, as well as how the multilevel categorization and Rule Modeler can help to connect service and IC functionality. Finally, we looked at the specialized PPR and free goods functions. In the next chapter, we'll begin looking at the core functions within SAP CRM, starting with marketing.

In this chapter, we focus on the core SAP CRM functionalities beginning with a discussion of SAP CRM Marketing.

5 Marketing

Marketing helps a company create brand awareness and generate interest and demand. With SAP CRM Marketing, companies can gather information on customer buying behaviors and create market plans and campaigns to entice new customers and maintain existing customer interest. SAP CRM Marketing consists of verticals such as Marketing Resource Management (MRM), segmentation, List Management, Campaign Management, Lead Management, and Trade Promotion Management (TPM).

In this chapter, we'll look not only at these components but other SAP CRM Marketing processes as well. We'll begin by looking at both the marketing plan and Campaign Management.

5.1 Marketing Plans and Campaign Management

Marketing plans and campaigns are key elements of SAP CRM Marketing functions. These are set up as part of the hierarchical structure within a marketing project and can consist of any number of marketing plan elements or campaign elements.

A marketing plan is the topmost node in an SAP CRM marketing project. It's used to assign the planning profiles and budgets across the marketing project. Additionally, it's used to formulate strategic market planning. You can have any number of marketing plan elements assigned to a plan.

As with any SAP project implementation, you have a project plan and the tasks to be executed in each phase of the project. A marketing plan is similar in that sense, where you have list of the activities in the form of campaigns, and each of the

activities has some kind of cost associated to it. A marketing plan helps a marketing professional or marketing manager carry out activities for a specific period of time. You can assign products and target groups to the marketing plan, but a target group assignment is purely for informational purposes. The actual marketing function execution—for example, running a campaign on the target group—isn't carried out by the marketing plan.

Campaigns serve as an action being carried out to target the business partner for converting them into leads or opportunities. Campaigns are assigned to the marketing plan with the target groups and products. After campaigns are executed based on the communication medium assigned to it, the business partner assigned to the target group receives the campaign details or product promotions. In SAP CRM, these campaigns are carried out in *Campaign Management*.

Marketing plans and campaigns help the marketing department execute marketing functions in an organized and effective manner. The following steps discuss how to create a marketing plan and link it with campaigns:

1. Begin by launching the WebClient UI business role **MARKETINGPRO**, and then navigating to **MARKETING PROFESSIONAL • MARKETING • MARKETING PLAN • CREATE**.
2. Enter the **DESCRIPTION**, **TYPE**, **PRIORITY**, **DATES (PLANNED START AND PLANNED END)**, and **MARKETING ORGANIZATION** (if applicable), as shown in [Figure 5.1](#). You can add other information such as **TEXT**, **ATTACHMENT**, and **PARTIES INVOLVED**, or you can create another marketing element, if required.

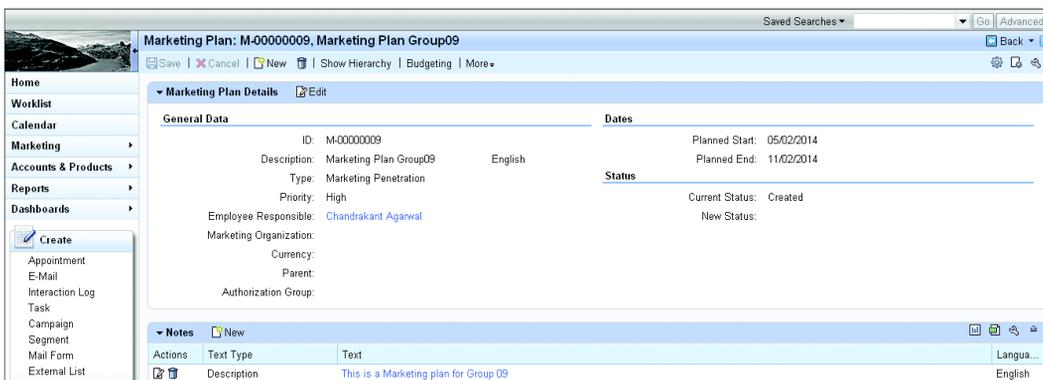


Figure 5.1 Marketing Plan

Configuration

You need to make sure that the configurations based on your business needs are already in place within SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • BASIC DATA • DEFINE TYPES/OBJECTIVES/TACTICS.

Figure 5.2 shows a campaign transaction within the SAP CRM system and gives an overview of the campaign transaction.



Figure 5.2 Campaign Transaction

3. Similarly, create a campaign as shown in Figure 5.3, and link it to the marketing plan M-00000009.

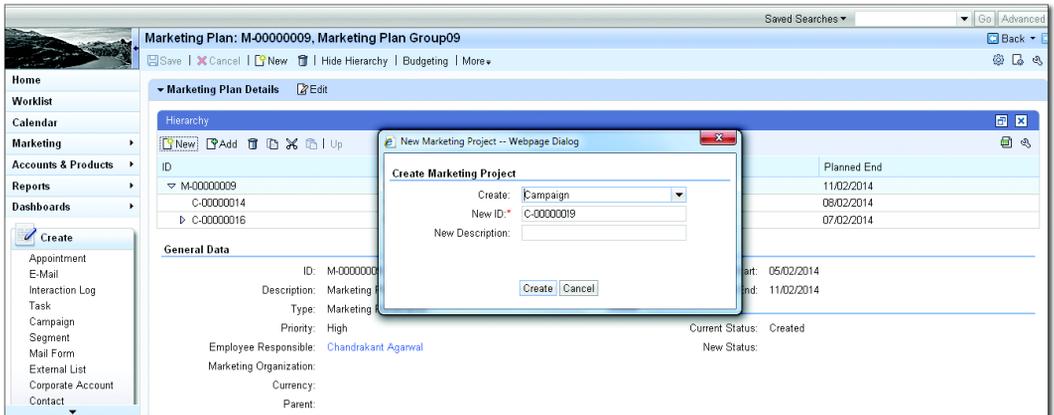


Figure 5.3 Linking a Marketing Plan to a Campaign

- For linking the marketing plan to the campaign, go to the marketing plan M-00000009 just created (see [Figure 5.4](#)). Click on SHOW HIERARCHY, and then click on the NEW button. You'll receive a popup to link the campaign to the marketing plan. Select the campaign and the campaign number. The PARENT field is where the marketing plan number will be shown.

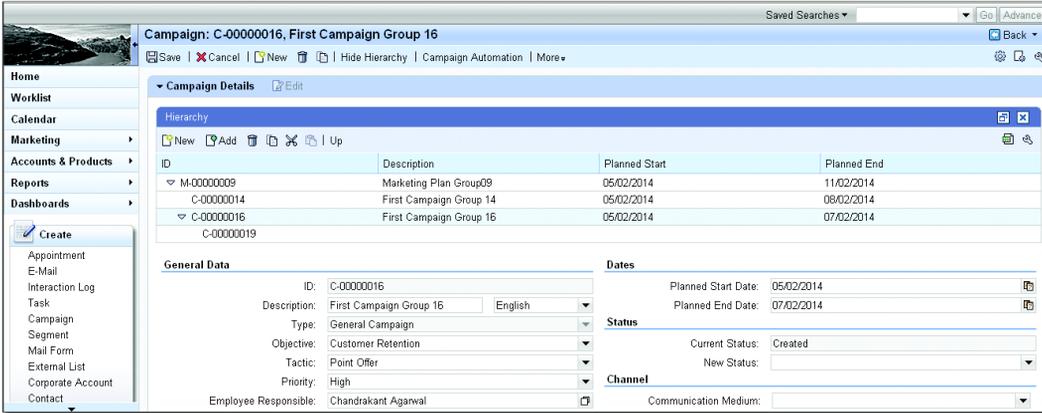


Figure 5.4 Campaign Linked to the Marketing Plan

- You can add other details into the campaign; for example ATTACHMENT, PARTIES INVOLVED, TARGET GROUP, and PRODUCTS, or you can create another campaign element if required (see [Figure 5.5](#)). [Figure 5.6](#) shows a campaign element being linked to the campaign.

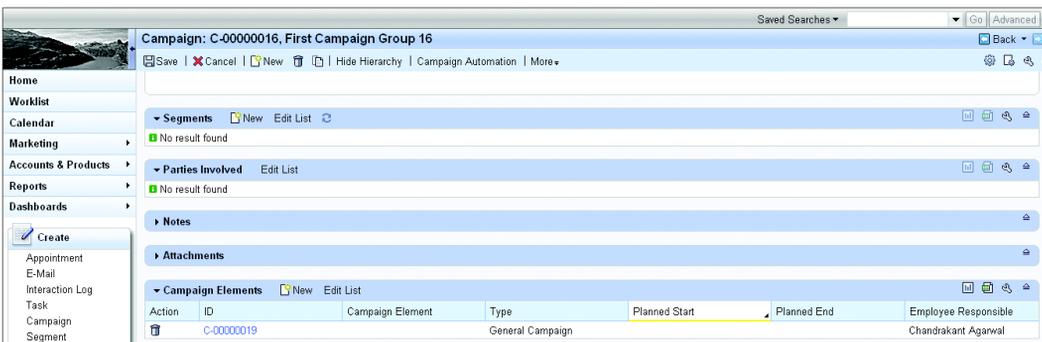


Figure 5.5 Creating a Campaign Element within a Campaign

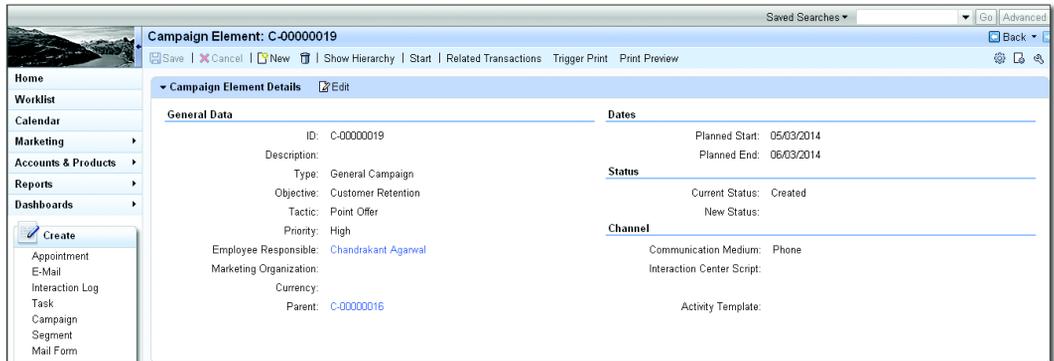


Figure 5.6 Campaign Element

- Next, assign the planning profile either to the marketing plan or campaigns. [Figure 5.7](#) shows the example of the planning profile being assigned to the marketing plan. The planning profile makes a call to SAP Business Planning and Simulation (BPS is part of SAP NetWeaver 2004/SAP Business Warehouse 3.51 and higher).
- After you assign the planning profile group and planning profile, in this case for PLANNING and the PLANNING PROFILE MARKETING TOP-DOWN PLANNING, you can enter the amount that is available for the entire marketing project that belongs to this hierarchy node (see [Figure 5.7](#)).
- You can carry out budgeting within the marketing plan via the BUDGETING link. After you click this, you'll see the complete list of marketing projects under this marketing plan. You can view the information on the budget assigned to each of the hierarchy nodes and the amount remaining on each of the marketing projects.

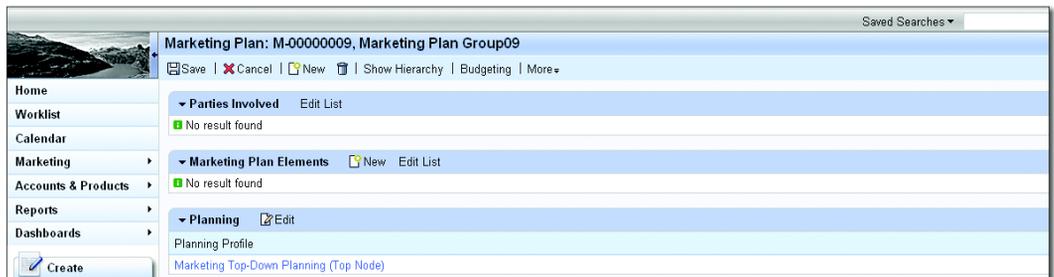


Figure 5.7 Assigning Planning Profile to the Marketing Plan

9. The *marketing calendar* shows a list of completed marketing projects available in the system. You can add multiple selection criteria to segregate your marketing project. [Figure 5.8](#) shows all of the marketing projects and the duration of each project. Marketing projects can be an agreement, campaign, deal, initiative, loyalty program, marketing plan, market development fund (MDF) program, reward rule, and trade promotion.

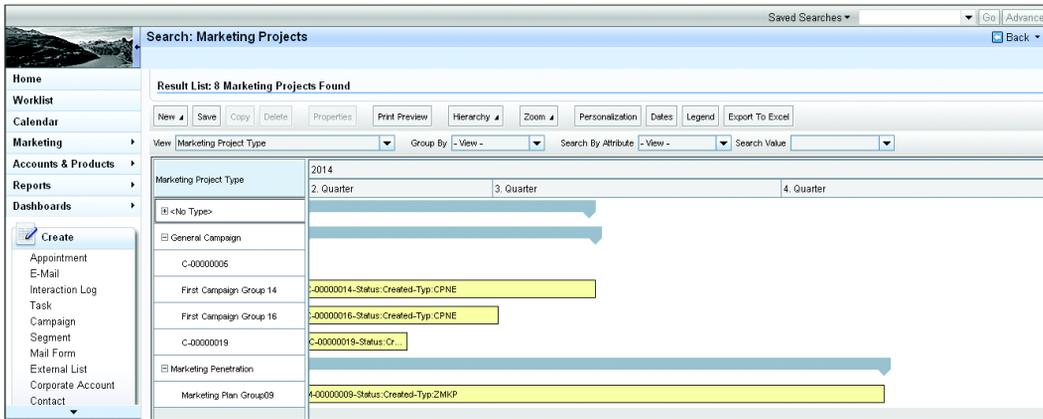


Figure 5.8 Marketing Calendar with Marketing Projects

You can also create marketing plans and campaigns from within the marketing calendar for a specific duration and save them from the marketing calendar. You can copy, delete, print preview, zoom, personalize, and export to Microsoft Excel. In the next section, we'll look at the different business functions.

5.1.1 Business Functions

The following sections look at the different business functions within marketing plans and campaigns.

Marketing Organization

An organizational unit within an SAP CRM organizational structure can be created as a *marketing organization*, which is used for marketing plans and campaigns only. A marketing organization can be created based on your business needs with several organizational units assigned in the form of a hierarchical structure. The organizational mapping within SAP CRM is very flexible and can be molded

based on your business requirements. A marketing organization has the following attributes: product category, country, and reference currency. The marketing organization is available as an attribute to the marketing plan and campaign only. It isn't available for trade promotion or any other marketing functions.

Top-Down Budgeting

Top-down budgeting distributes marketing costs across the marketing plan, marketing plan elements, campaigns, and campaign elements. SAP recommends using *Marketing Funds Management* to carry out any kind of Funds Management in SAP CRM Marketing. To activate the top-down budgeting function, you need to configure the system as follows:

1. Define the logical system as CRMBUDGET.
2. Call Transaction SM30, and enter the view "CRMC_ABOXLSYSRFC". Select the logical system CRMBUDGET, and enter the RFC destination of your target SAP BW system.
3. In the Customizing activity DEFINE URLS AND PARAMETERS, configure the transaction launcher. In the transaction launcher, the settings for top-down marketing are made for the logical URL ID CRM_TOPDOWN_BUDGETING. Note that this URL is hardcoded; that is, all settings for top-down budgeting need to be made using this URL.
4. Call Transaction CRMS_IC_CROSS_SYS. Enter the mapped logical system "CRM_BUDGET", if it doesn't already exist, and assign the logical system CRMBUDGET.
5. Set up planning profile groups. SAP provides two planning groups for top-down budgeting: SAP2 Marketing Planning and 4MKT Campaign Planning.

Marketing Funds Management

Marketing Funds Management allows an organization to integrate Funds Management using the marketing plan and Campaign Management. After you integrate Funds Management with the marketing plan and Campaign Management, you'll be able to assign the budget to each of the marketing elements within the marketing projects. These include the marketing plan, marketing plan elements, campaigns, and campaigns element. You can track the expenses you've incurred during the execution of campaigns and check the amount remaining on

each of these marketing activities. If there is a shift in the market on any specific product demand and if that requires any shift in the marketing strategy, you can reassign the funds to different marketing elements easily based on the market demand.

To activate Marketing Funds Management, you need to activate business function CRM_MKT_FM (Funds Management for Marketing).

Campaigns Determination

Campaign determination helps organizations apply campaigns in the form of discounts during a specified period in the sales order or quotations.

The success of the campaigns will be determined based on the campaigns applied to the orders at the line item. You can determine to apply one campaign or multiple campaigns to the sales order line item. The campaign determined is in the form of the campaign-specific price and is determined based on the condition technique.

Campaigns can't be browsed from within the sales order in the WebClient UI. *Automatic campaign determination* is available in SAP CRM Enterprise, SAP CRM Mobile Sales, SAP E-Commerce, and in the Interaction Center (IC). The detail configuration and the campaign discounts determination on the sales order is covered in [Chapter 4, Section 4.4](#).

5.1.2 Marketing Plan and Campaign Management Elements

Like any other SAP CRM transactions, there are different elements of marketing plans and Campaign Management that you can configure based on your business needs and different business scenarios.

Following are the steps and details around configuration for marketing plans and Campaigns. We'll start by configuring the marketing plan:

1. Define the types, objectives, and tactics of the marketing plan. Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • BASIC DATA • DEFINE TYPES/OBJECTIVES/TACTICS.

2. In [Figure 5.9](#), the CATEGORY field needs to be assigned. The CATEGORY field is important because it differentiates objects such as the marketing plan, campaigns, MDF program, trade promotion, and deals. It groups the marketing project and its associated objects together. Additionally, you need to assign the STATUS PROFILE, ACTION PROFILE, and PARTNER DETERM. PROC. fields based on your business needs. The detailed configuration steps on each of these profiles are already covered in [Chapter 4](#) (see [Figure 5.9](#)).

Figure 5.9 Marketing Plan

3. You can assign priorities (e.g., high, medium, and low) to individual marketing projects by navigating to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • BASIC DATA • DEFINE PRIORITIES FOR MARKETING PROJECTS. You'll be presented with the screen shown in [Figure 5.10](#).

CRM Marketing Planning: Priority of Marketing Projects		
Pri...	Description	Priority
1	High	3 High
2	Medium	5 Medium
3	Low	9 Low

Figure 5.10 Marketing Project Priority

4. The next step is to assign the planning profile groups. Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND

CAMPAIGN MANAGEMENT • KEY FIGURE PLANNING • DEFINE PLANNING PROFILE GROUPS. The various planning profile groups are listed, as shown in [Figure 5.11](#).

PlanProfGp	Description	Category	Level	Indirect
4CO1	Group Cost Planning for Coupons	CP		<input type="checkbox"/>
4CO2	Cost Planning for Coupons	CP		<input type="checkbox"/>
4CP1	Business Partner Planning for Campaigns	CP		<input type="checkbox"/>
4DLM	Standard Deal/Product Group	DL		<input type="checkbox"/>
4MKT	Campaign Planning	CP		<input type="checkbox"/>
4TG1	Standard TPM/Target Group - BP	TP		<input type="checkbox"/>
4TG2	Standard TPM/Target Group - BPHN	TP		<input type="checkbox"/>
4TP1	TPM/Hierarchy with Funds	TP		<input type="checkbox"/>
4TP2	TPM/Hierarchy with Funds (Indirect)	TP		<input checked="" type="checkbox"/>
4TP3	TPM/Hierarchy with Funds (Tier Growth)	TP		<input type="checkbox"/>
4TP4	TPM/Hierarchy (Display Pallet)	TP		<input type="checkbox"/>
4TPH	Standard TPM/Hierarchy	TP		<input type="checkbox"/>
4TPM	Standard Trade Promotion Management	TP		<input type="checkbox"/>
SAP2	Marketing Planning	MP		<input type="checkbox"/>

Figure 5.11 Planning Profile Group

5. Click on ASSIGNMENT OF PLANNING PROFILES to go to the screen shown in [Figure 5.12](#). Take note of the following fields:

- ▶ SUBORDPROJECT: This checkbox helps you plan not just the selected project but also the subordinate projects.
- ▶ PLAN TYPE: You can determine the type of planning you want to carry out in the marketing plan, campaign, or trade promotion. Values can include 0 – GENERAL KEY FIGURES, 1 – VOLUME/TRADE SPENDS, 2 – COST PLANNING, 4 – APO, 5 – PRINT PREVIEW, 6 – APO, 7 – WORKFLOW, 8 – CONDITION GENERATION, 9 – PRODUCT INDEPENDENT FREE GOODS, A – DATA GET, B – APO DISTRIBUTION KEY, C – COST PLANNING WITH MARKETING SPENDS, D – TOP-DOWN BUDGETING, and E – EXTERNAL APPLICATION INTERFACE. These planning types allow you to create planning data in SAP Strategic Enterprise Management (SAP SEM)/SAP BusinessObjects Business Intelligence (SAP BusinessObjects BI) within marketing or account planning.
- ▶ SRCE PROF: This is only applicable for trade promotions in the marketing plan. The source profile is mainly used when creating a trade promotion from a deal. The deal planning data is copied using the source profile. The source profile must be unique within the same planning type.

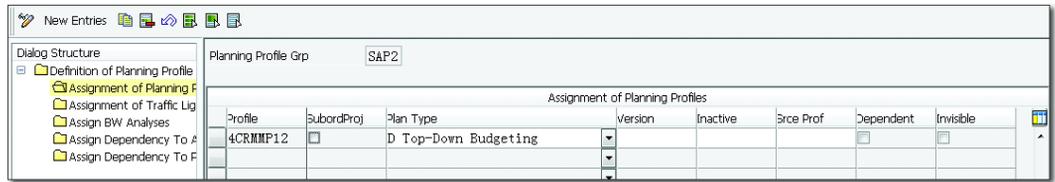


Figure 5.12 Assignment of the Planning Profile

Now that we've configured the marketing plan, let's turn our focus to the campaign configuration aspect. Follow these steps to configure a campaign:

1. Define the campaign types, objects, and tactics by navigating to the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • BASIC DATA • DEFINE TYPES/OBJECTIVES/TACTICS. On the TYPES page, select the campaign type you want to use (see Figure 5.13). We've chosen GENERAL CAMPAIGN.



Figure 5.13 Campaign Type

2. Fill out the details of the chosen campaign. Take note of the following fields (see Figure 5.14):

- ▶ **CATEGORY:** This field is used to group together associated objects.
- ▶ **USAGE:** This field defines if you want to use the campaigns as the template, productive, or both.
- ▶ **STATUS PROFILE, ACTION PROFILE, and PARTNER DETERM. PROC.:** These fields are based on your business needs. The detail configuration steps on each of these profiles are already covered in [Chapter 4](#). SAP provides six system statuses for Campaign Management: created, released, approved, locked, finished, and rejected. Status management within a campaign helps you run through the complete lifecycle of the marketing element.

- ▶ **USAGE TYPE:** This field enables you to restrict the creation of follow-up business transactions to certain transaction types.
- ▶ **COMMUNICATION MEDIUM:** In this field, you can default the use of the communication medium in the campaigns. If you keep this field blank in the configuration, you can choose phone, email, activity, lead, and so on directly in the campaign transaction.
- ▶ **CAMPAIGN SPECIFIC ATTRIBUTES:** Campaign-specific attributes are used when you're working with coupon campaigns or loyalty scenarios.

Settings	
Type	CPNE General Campaign
Category	CP Campaign
Usage	Productive and Template
	<input checked="" type="checkbox"/> Lock type after saving marketing project
Default Attributes	
Status Profile	
Action Profile	
Action Prof. for Element	
Partner Determ. Proc.	
Usage Type	
Communication Medium	
	<input checked="" type="checkbox"/> Overwrite marketing project value
Campaign Specific Attributes	
Coupon Scenario	No Coupon
Execution Scenario	Low Volume
Loyalty Scenario	No

Figure 5.14 Campaign Details

3. In this step, we'll maintain the objective for the campaign type as shown in [Figure 5.15](#). You can add the entries in the OBJECTIVES based on your business scenario. In this example, CUSTOMER RETENTION has been added as the OBJECTIVE. This can be useful for reporting purposes as well.
4. Similar to objectives, you can maintain tactics to choose within the campaign transaction (see [Figure 5.16](#)).

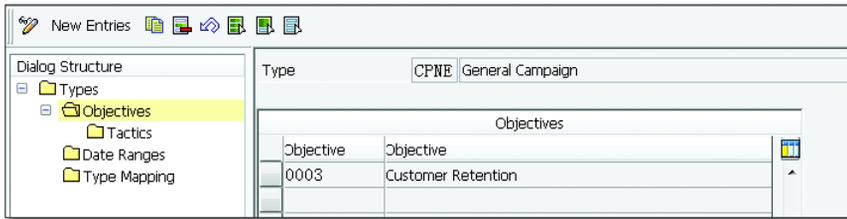


Figure 5.15 Campaign Objectives

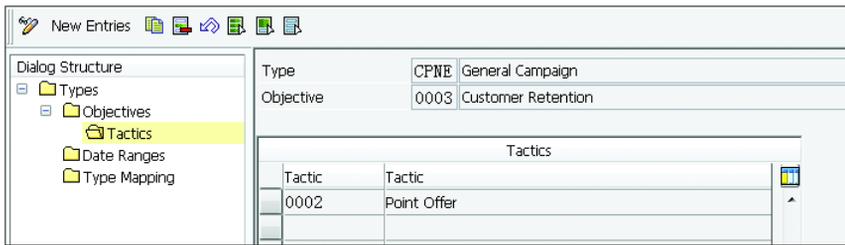


Figure 5.16 Campaign Tactics

5.1.3 Campaign Execution and Automation

Campaign execution is one of the most important aspects when running campaigns against any target group. You can assign different communication methods to execute a campaign as well. You can also generate leads and activity from the campaigns based on your business needs. *Campaign automation* is useful when an organization is running a very high volume of campaigns.

5.1.4 Configuring Campaign Execution

Let's consider a scenario in which Company ABC Inc. wants to run a campaign for a certain product with discounts applied to the campaign. The campaign manager wants to give out a rebate of 10% on this campaign if the customer buys the product. Therefore, the company executes an email campaign for a specific target group.

Follow these steps to carry out an email campaign:

1. Follow the menu path, CREATE CAMPAIGN • LOGIN TO BUSINESS ROLE • MARKETINGPRO, and then go to MARKETING WORKCENTER • CAMPAIGN.

- As shown in [Figure 5.17](#), under CAMPAIGN DETAILS, enter the TYPE, OBJECTIVE, and TACTIC. Make sure that the status of the campaign is approved before you execute it. Enter the PLANNED START DATE and PLANNED END DATE based on your business needs. Then, enter the COMMUNICATION MEDIUM as phone or email. In this case, it's an email campaign. To execute the email campaign, you also need to assign the form for email. You can also add a product for which you want to run the campaign and assign a discount percentage to the campaign so that when the customer places an order for the same product, the campaign determination triggers the discount percentage on the sales order. The customer then receives the discount based on the campaign created.

Campaign: C-10000011, Campaign-01

Save | Cancel | New | Show Hierarchy | Campaign Automation | More ▾

Campaign Details Edit

General Data		Dates	
ID:	C-10000011	Planned Start Date:	05/17/2014
Description:	Campaign-01	Planned End Date:	06/14/2014
Language:	English	Status	
Type:	General Campaign	Current Status:	Released, Approved
Objective:	Customer Retention	New Status:	
Tactic:	Temporary Price Reduction	Channel	
Priority:		Communication Medium:	E-mail
Employee Responsible:		Sender:	
Marketing Organization:		Form for E-Mail:	ZTEST
Currency:		E-Mail Address:	
Parent:			
Authorization Group:			

Figure 5.17 Creating a Campaign

- Under the SEGMENTS section, assign the segment to the campaign, which consists of the PROFILE SET and the TARGET GROUP, as shown in [Figure 5.18](#).

Campaign: C-10000011, Campaign-01

Save | Cancel | New | Show Hierarchy | Campaign Automation | More ▾

Segments New Edit List

Action	Segment	Description	Job Status	Target Group Size
	ZProfile_Set		Job not scheduled	1

Products Add Edit List

Product ID	Product	Unit	Product Group
423487	DEMO PRODUCT	BD	

Discounts New Edit List

Actions	Status	Scale	Condition T...	Sales Orga...	Distribution...	Product ID	Amount	CrCy	Price Unit	Product Unit	Valid From	Valid To
	Not Available		ERP MD...	SORG 1210	00	423487	10.000-	%	0		05/17/2014	06/14/2014

Figure 5.18 Creating a Campaign (2)

- Assign the PROFILE and TARGET GROUP to the PROFILE SET, as shown in [Figure 5.19](#).

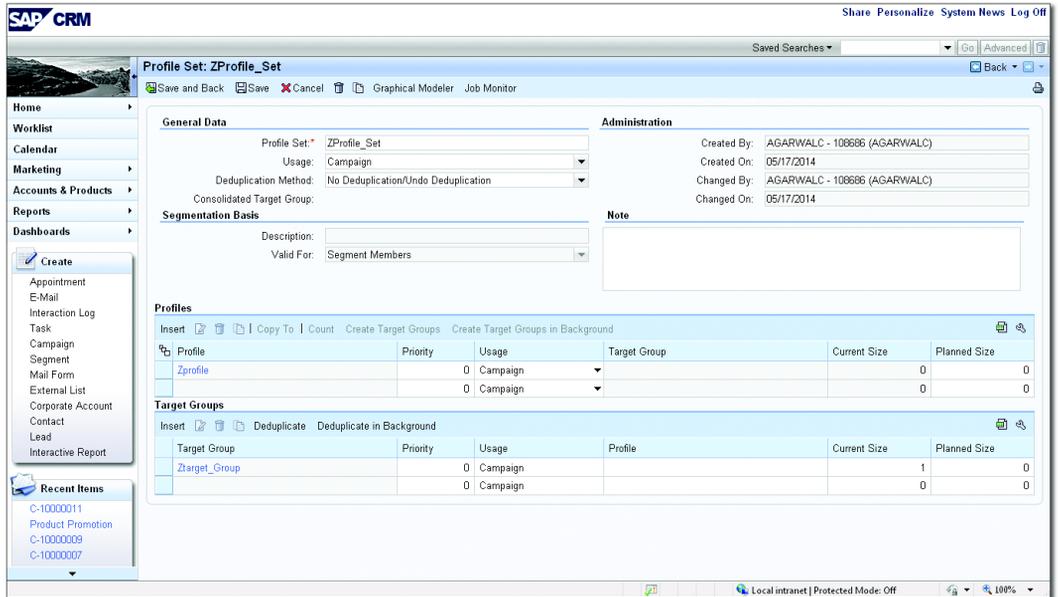


Figure 5.19 Profile Set

5. [Figure 5.20](#) shows that the target group is created where the business partner is assigned, and the campaign is executed for the assigned business partner.

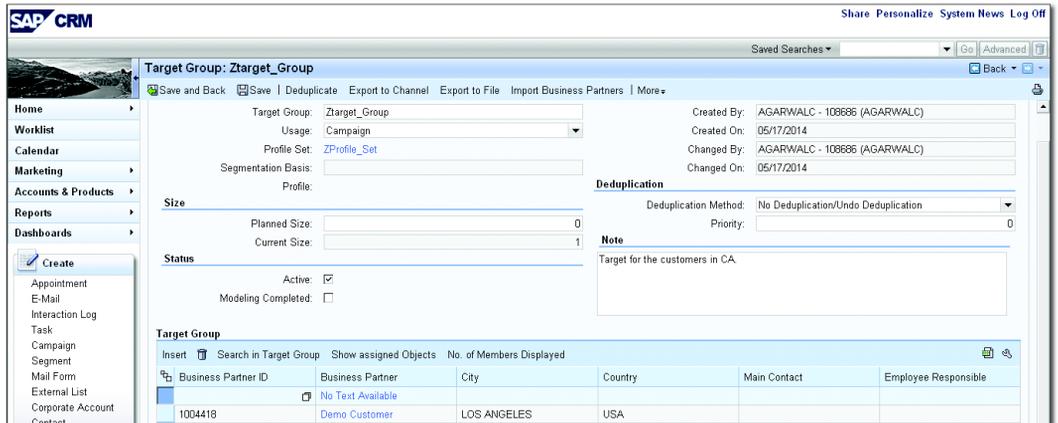


Figure 5.20 Target Group

6. Click on MORE • START to schedule a job (see [Figure 5.21](#)). This will execute the campaign to trigger the email to the customer (see [Figure 5.22](#)).

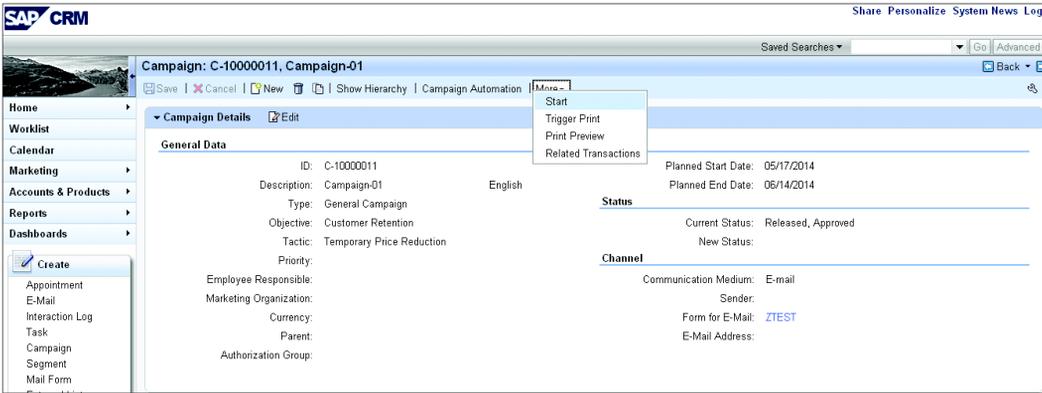


Figure 5.21 Scheduling a Job (1)

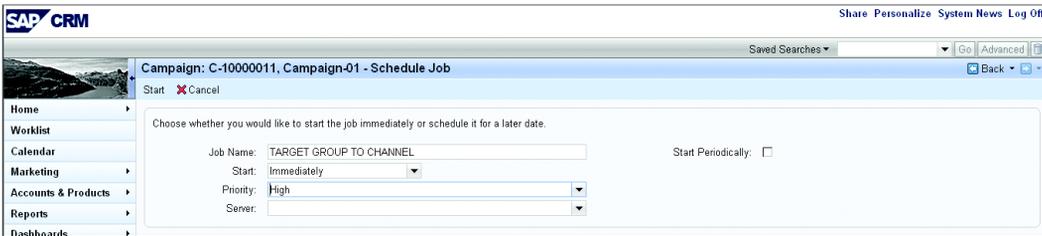


Figure 5.22 Scheduling a Job (2)

7. Figure 5.23 shows the job triggered successfully.

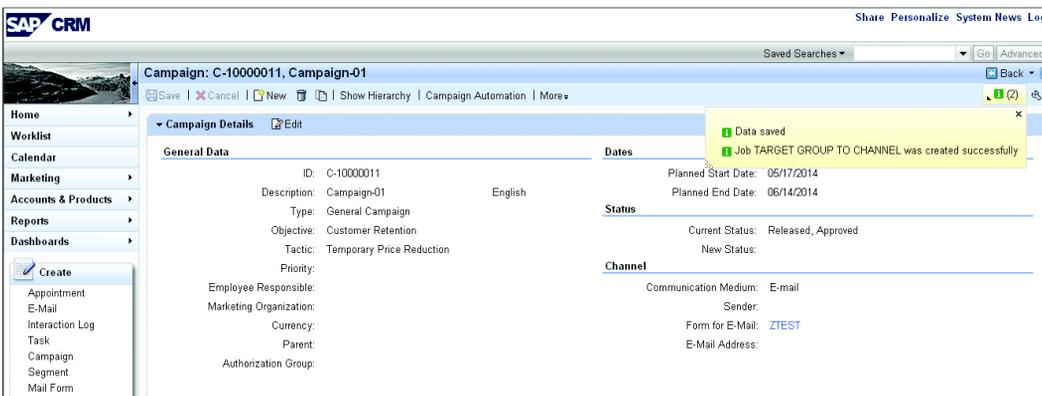


Figure 5.23 Campaign Creation

With the email triggered successfully, make sure to enter the email ID as the communication medium on the business partner master data (see [Figure 5.24](#)). If the communication information on the business partner assigned to the target group is incorrect, then the email trigger won't be successful.



Figure 5.24 Email Campaign Received

To track if the email was successful or if there were any responses, you can access the **MARKETING CONTACT SUMMARY** report under **BUSINESS ROLE • MARKETING-PRO • MARKETING CONTACT SUMMARY** (see [Figure 5.25](#)).

Marketing Contact Summary

Search Criteria

Campaign ID is
 Target Group is
 Contact Status is
 Communication Channel is

Maximum Number of Results: 100

Search Clear Save Search As: Save

Result List: 4 Matching Results Found

Campaign ID	Campaign Description	Campaign Element ID	Campaign Element...	Planned Outbounds	Actual Successful...	Failed Outbounds	Link Tracking
C-10000011	Campaign-01			1	0	1	0
C-10000012	Campaign-01			1	1	0	0
C-10000013	Campaign-01			1	1	0	0
C-10000014	Campaign-01			1	1	0	0

Figure 5.25 Marketing Contact Summary

Campaign Changes Notification

In some cases, a campaign manager may need to be notified of any changes in a campaign. You can activate the campaign change notification by following these steps:

1. Navigate to **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN MARKETING PLANNING • CHANGE ACTIONS AND CONDITIONS • DEFINE ACTION PROFILES AND ACTIONS** to create the action profile where you define the action to trigger a notification to the campaign

manager for any changes in the campaign. Create the action profile as shown in [Figure 5.26](#). [Figure 5.27](#) shows the action definition configuration. The configuration definition on each of these fields is covered in [Chapter 4, Section 4.7](#).

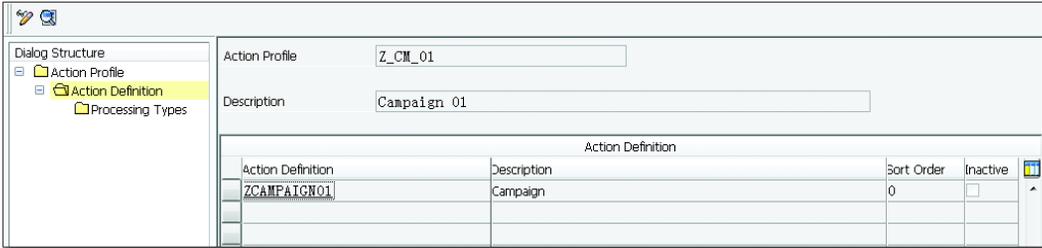


Figure 5.26 Action Profile

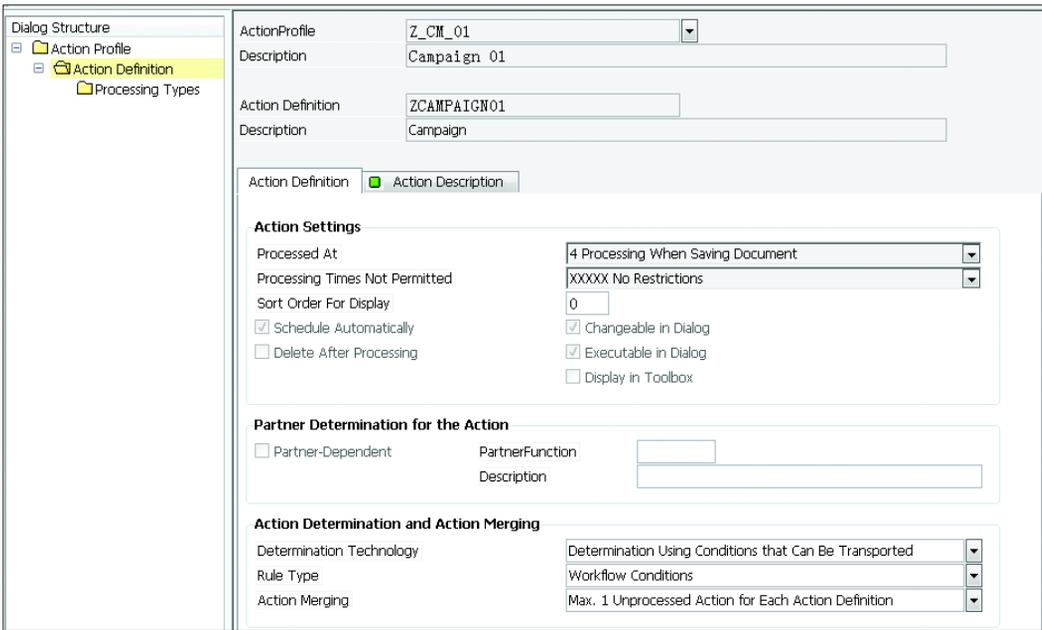


Figure 5.27 Action Definition

2. Assign a SMART FORMS MAIL to the action definition as shown in [Figure 5.28](#). FORM NAME CRM_MKTPL_DEFAULT_CONSUMER is a standard SAP-delivered

form that can be used to notify the marketing manager regarding any changes to the campaign.

Dialog Structure

- Action Profile
 - Action Definition
 - Processing Types

Action Definition: ZCAMPAIGN01

Description: Campaign

Permitted Processing Types of Action	
Assignment/Change Using Value Help in List	Default
Smart Forms Mail	

Set Processing

Mail Settings

Form Name	CRM MKTPL DEFAULT CONSUMER
Processing Class	CL CRM MKTPL PROCESS SMARTFORM
Processing Method	PROCESS_SMART_FORM
Archive Mode	1 Mail Only

Figure 5.28 Processing Type

- Now that you've created and defined the action profile, you need to create conditions. Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN MARKETING PLANNING • CHANGE ACTIONS AND CONDITIONS • DEFINE CONDITIONS.
- Go to the PROCESSING DETAILS tab, and assign the RECIPIENT TYPE as B SAP USER and your user ID in the ADDRESS field (see [Figure 5.29](#)).
- Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • BASIC DATA • DEFINE TYPES/OBJECTIVES/TACTICS. As shown in [Figure 5.30](#), assign the action profile created to the campaign type.

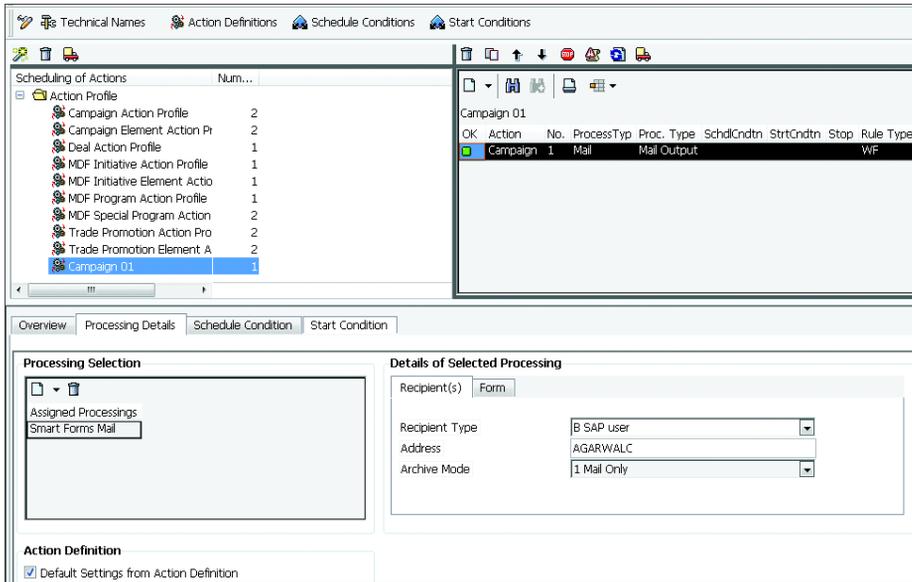


Figure 5.29 Conditions

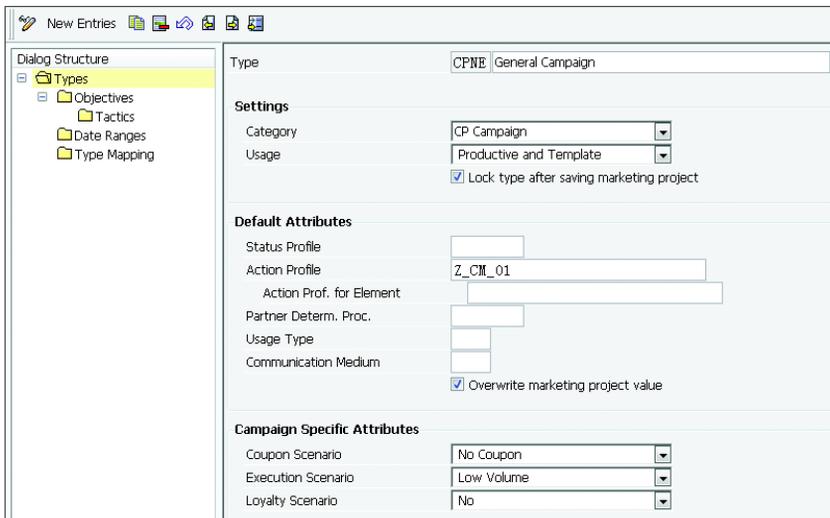


Figure 5.30 Action Profile Assignment to the Campaign Type

6. After the action configuration is completed, create the campaign as shown in [Figure 5.31](#).

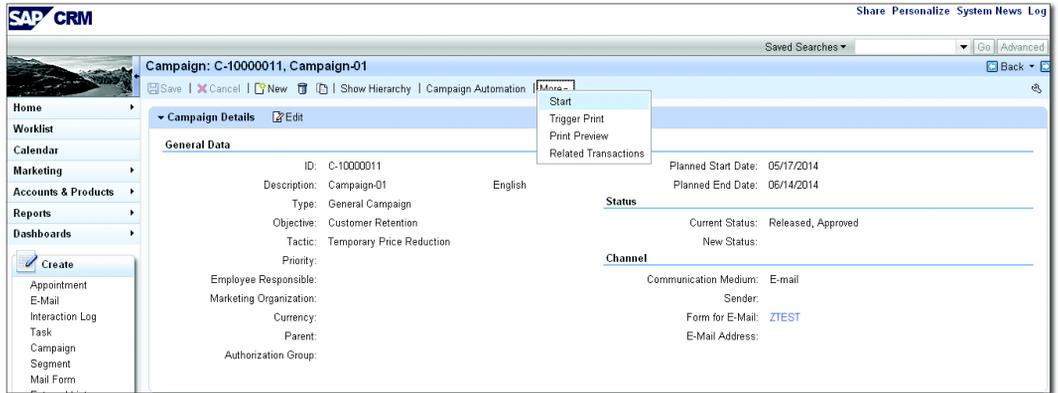


Figure 5.31 Creating the Campaign

7. As soon as the campaign is created, the campaign notification is sent to the user workplace inbox of the campaign manager to notify him of the campaign creation. This is accessed via Transaction SBWP. Figure 5.32 shows the campaign notification output with campaign information.

Marketing Planner - Consumer		IDES	
General Data			
Campaign:	C-10000011		
Description:	Campaign-01		
Campaign Type:	General Campaign		
Strategy:	Temporary Price Reduction		
Objective:	Customer Retention		
Action Profile:	Campaign 01		
DATES:			
	Start	End	
Plan:	SA 05/17/2014 00:00	SA 06/14/2014 23:59	0.00
PRODUCTS:			
Product ID	Product Description	Product Category	Product Group
423487	DEMO PRODUCT	Estate Gray	
HIERARCHY DATA:			
Object	Name	Description	
Campaign	C-10000011	Campaign-01	
TARGET GROUP:			
ZProfile_Set			

Figure 5.32 Campaign Notification

Configure the Communication Medium

You can configure the communication medium before executing any campaigns based on your business needs. For example, you can configure specific mediums such as phone, email, leads, or activities.

To begin configuring the communication medium, follow the menu path, **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • CAMPAIGN EXECUTION • DEFINE COMMUNICATION MEDIUM**.

You can assign the transaction type that you want to create with the campaign and link that to the created campaign. You can map the transaction types to the communication medium, such as email or phone, as shown in [Figure 5.33](#). Therefore, as soon as you execute the campaign, the transaction is created and linked to the campaign (see [Figure 5.34](#)).

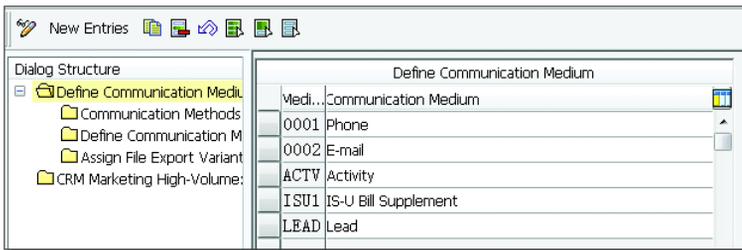


Figure 5.33 Define Communication Medium

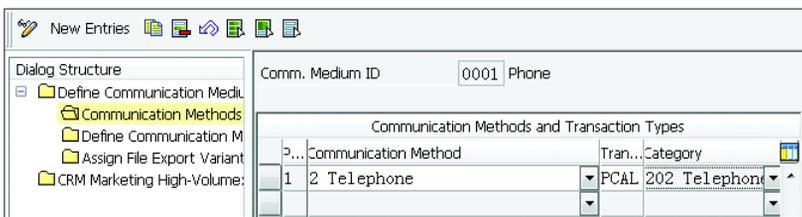


Figure 5.34 Communication Methods and Transaction Types

5.1.5 Configuring Campaign Automation

Campaign automation is generally carried out when a company is running a campaign at a very high volume. You can model the campaign with each process step

within the campaign automation which can be accessed in the campaign creation screen, as shown in [Figure 5.35](#).



Figure 5.35 Campaign Details

You can use the CAMPAIGN AUTOMATION button on the campaign to drill to the campaign automation screen shown in [Figure 5.36](#).

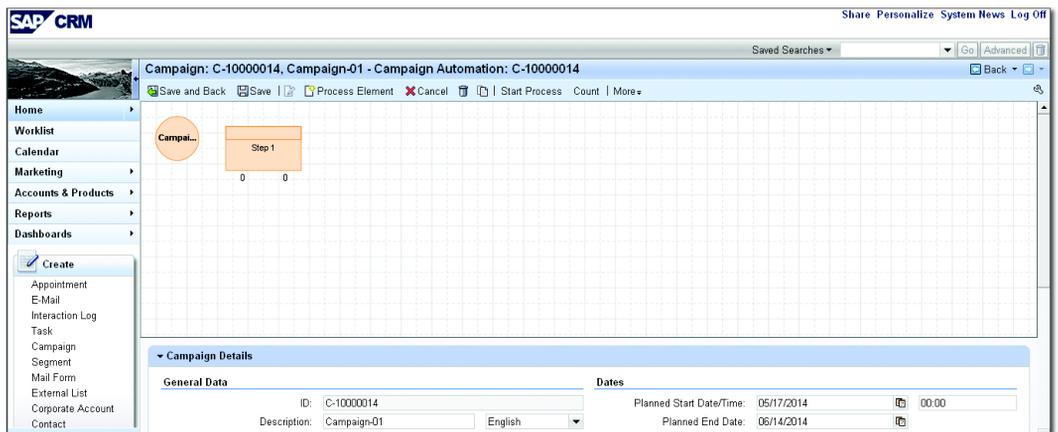


Figure 5.36 Campaign Automation Screen

You can create your own process element and start the process. The steps included in the campaign automation will trigger automatically one after the other with no manual intervention needed.

You can assign a workflow to the process elements, as shown in [Figure 5.37](#) for campaign automation. *Workflow* automates the campaign execution as the workflow assigned to the process elements triggers one after the other. You can assign standard workflows to the campaign elements shown in [Figure 5.37](#).

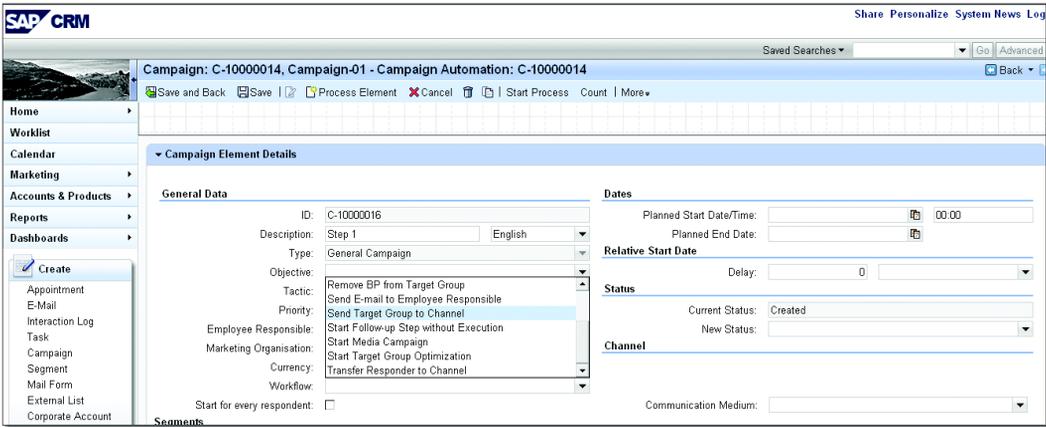


Figure 5.37 Workflow Assignment to the Campaign Elements

To select the workflow in the campaign element, you need to configure the workflow in the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • CAMPAIGN AUTOMATION • MAINTAIN STANDARD SETTINGS FOR SAP BUSINESS WORKFLOW.

To implement the workflow assignment, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • CAMPAIGN AUTOMATION • IMPLEMENT WORKFLOW ASSIGNMENT. Here, you assign the workflow templates, that is, tasks within the configuration shown in Figure 5.38 to the individual campaign element in the campaign automation.

Maintenance View for Table CRMC_MKTCA_WFT

Workflow	Task	Workflow Description
CA1	WS14000061	Send Target Group to Channel
CA10	WS14000070	Start Follow-up Step without Execution
CA11	WS15100040	Start Media Campaign
CA2	WS14000062	Create Target Group
CA3	WS14000063	Create Target Group and Channel Transfer
CA4	WS14000064	Send E-mail to Employee Responsible
CA5	WS14000065	Approval by Employee Responsible
CA6	WS14000066	Add BP to Target Group
CA7	WS14000067	Remove BP from Target Group
CA8	WS14000068	Start Target Group Optimization
CA9	WS14000069	Transfer Responder to Channel

Figure 5.38 Workflow Assignment

After the configuration is done, and you've assigned the workflow in the campaign element within campaign automation, then you need to click the START PROCESS button in campaign automation to trigger the START CAMPAIGN PROCESS workflow.

5.1.6 Personalized Mail

A *personalized mail form* is used to create a mail form that is specific to the target group of customers and is used to run the specific campaigns. The mail form can be tailored to the need of any organization that runs an email campaign and reach out to their list of target customers. Make sure to activate the business function CRM_MKT_PRD (Marketing Productivity) for using the mail form. [Figure 5.39](#) shows the screenshot of the MAIL FORM that can be created from the MARKETINGPRO business role.

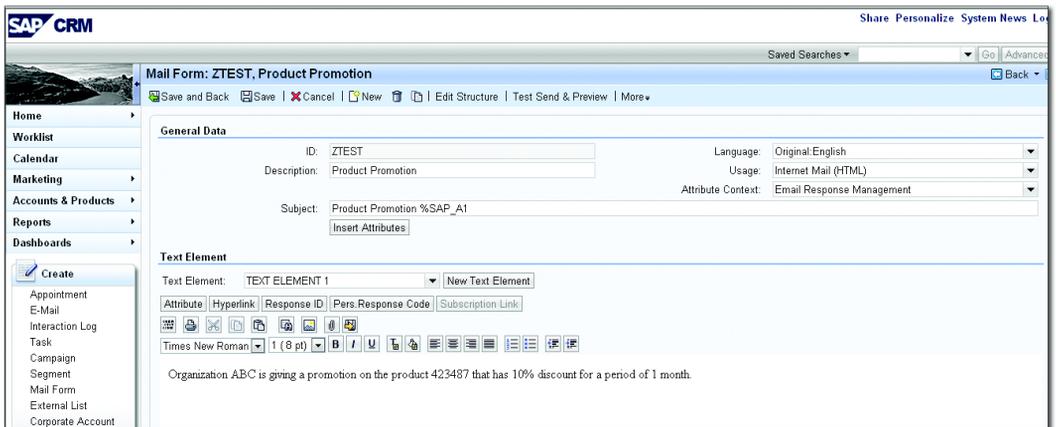


Figure 5.39 Mail Form

A personalized mail form has the following attribute categories: business partner, Email Response Management Service (ERMS) fact base attributes, Business Data Context attributes, system attributes, additional attributes, and so on. Each of these attribute categories consists of the attribute fields that you can assign to the mail form. An attribute category value changes with the *attribute context* assigned to the mail form.

For example, if you select a gift card as your attribute context, the attribute category on the mail form will show you an option of gift card only, which consists of

the specific gift card fields. You can also use attributes while creating a condition in the mail form.

To add the additional attributes in the attribute category, you can implement the Maintain Additional Attributes for Mail Form Attribute Contexts BAdI. Navigate to the following menu path to add additional attributes: SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • CAMPAIGN EXECUTION • BUSINESS ADD-INS • BADI: MAINTAIN ADDITIONAL ATTRIBUTES FOR MAIL FORM ATTRIBUTE CONTEXTS.

Then, follow this path to configure an attribute context: SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • PERSONALIZED MAIL • MAINTAIN ATTRIBUTE CONTEXTS FOR MAIL FORMS.

In the screen that appears, you can attach the document to the mail form and add the condition to it via an attribute, as shown in [Figure 5.40](#). If you add any condition to the mail form, it will only trigger the campaign for those business partners in the target group that satisfy this condition.

The screenshot shows the SAP CRM interface for configuring a mail form. The title bar indicates 'Mail Form: ZTEST, Product Promotion - Attachments'. The 'General Data' section includes fields for ID (ZTEST), Mail Form (Product Promotion), Subject (Product Promotion %SAP_A1), Language (Original English), Usage (Internet Mail (HTML)), and Attribute Context (Email Form). The 'Attachments' section shows a table with one entry: 'Week 1 Scenario and Screen Sh...' with type 'Attachment' and created by 'AGARWALC'. The 'Conditions' section shows a table with two conditions: 'Address: District' equal to 'CA'.

File	Description	Type	Condition	Created By
Week 1 Scenario and Screen Sh...	Attachment	Attachment	<input checked="" type="checkbox"/>	AGARWALC

Attribute Description	Relational Operator	Value	Value Description	AND/OR
Address: District	<input checked="" type="checkbox"/> Equal to	CA		<input checked="" type="checkbox"/> AND
	<input checked="" type="checkbox"/> Equal to			<input checked="" type="checkbox"/> AND

Figure 5.40 Conditions on the Mail Form

Additionally, you can assign any hyperlinks to the mail form based on your business needs. You can also assign the link to the newsletter you want customers to subscribe to. When creating the hyperlink, you can choose the URL category,

which can then be used for any reporting purpose. To configure the URL category, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • MARKETING PLANNING AND CAMPAIGN MANAGEMENT • PERSONALIZED MAIL • DEFINE CATEGORIES FOR URLS.

You can track the response to the email campaign sent to your customers. This helps you understand and gauge the effectiveness of the campaign being run for the target group of customers. There are three ways of tracking the response in the mail form:

- ▶ RESPONSE ID
- ▶ PERSONALIZED RESPONSE CODE
- ▶ RESPONSE TRACKING WITH HYPERLINKS

After the mail form is created, you can test, preview, and even send it to your email ID to review the actual mail form. This is a button provided on the top-right corner of the mail form.

In this section, we discussed how to execute a marketing plan and run a campaign in SAP CRM. Through the use of examples, we gave a broad picture of how campaigns can be used in any given marketing scenario.

5.2 Segmentation

To communicate with your customers in a purposeful manner, you have to know who your customers are, including information on their interests and buying behaviors. The existing marketing data on customers (marketing attributes) therefore makes a valuable contribution when modeling target groups for your marketing activities.

Dividing your customer database into different groups is referred to as *customer segmentation*. If an organization knows a specific pattern or a specific behavior of a customer, they can segment those customers in a group and run the campaign if required. You can do a segmentation of a customer based on the target group, which gets the data from a different data source (e.g., attribute set, BW cube, and InfoSet).

Social Media

Social media plays an important role in determining the habits of the customer. With the growing importance of gaining a competitive edge, it has become imperative that an organization can attract customers with various needs.

Figure 5.41 shows the diagrammatic representation of the different data source feeding into the Segment Builder. The data sources mentioned here are the business partner attribute, InfoSet and SAP BW cubes. These data sources are used to create the target group for a list of the customers, and this target group is assigned to the segment.

Eventually, the customer segmentation created can be used in running any kind of campaign based on your business needs.

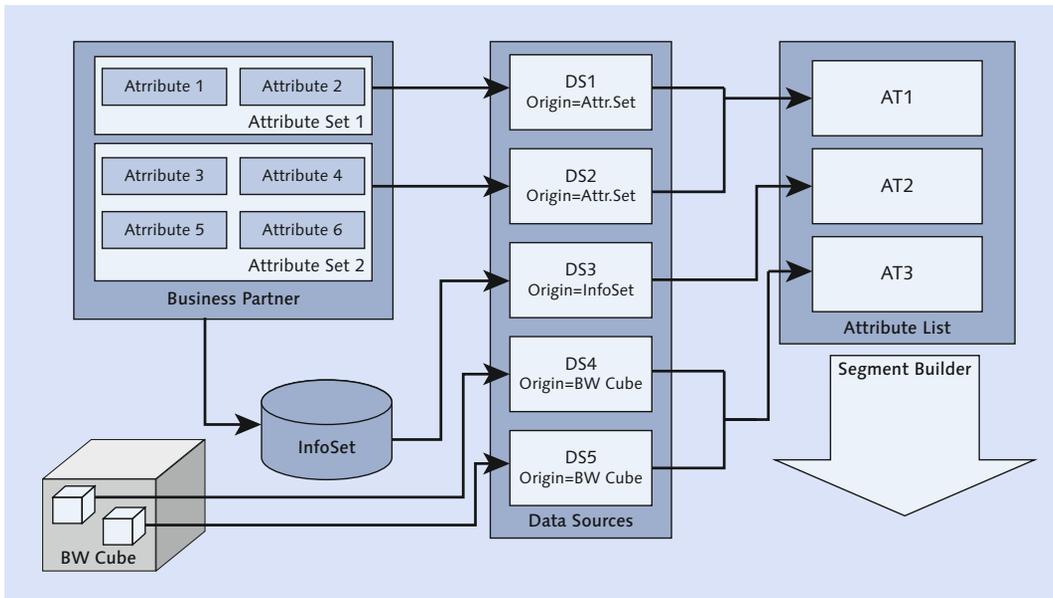


Figure 5.41 Data Source Feed to the Segment Builder

As shown in Figure 5.41, the business partner attribute, BW cube, and InfoSet are feeds going as data sources to form the attribute list, and the segment is created by creating the target group based on the attribute list.

An *attribute* is a product characteristic a company features in a new product introduced to the market. Companies then run campaigns for this new product to advertise this characteristic. For example, a car is a product where the color, shape, and car version are the attributes of the product.

A combination of various attributes are referred to as an *attribute set*. In the car example, the color, shape, and version belongs to one attribute set. You link all the relevant attributes to the attribute set. You then assign the attribute value to the customer by selecting the relevant attribute set. Attribute sets are used in applications such as the Web Channel and SAP CRM Telesales.

5.2.1 Process Overview

The segmentation process can be broken down into the following different steps:

1. Create a data source.

To segment the customer or the products, we need to create the data source that consists of the origin type. The following are the four types of origin:

- ▶ *Attribute sets*: Marketing attributes maintained in the business partner.
- ▶ *InfoSet*: Master data and transaction data related to the business partner.
- ▶ *BW cube*: Key figures determined via SAP BW reports.
- ▶ *External List Management (ELM)*: ELM is used to convert any external customers that aren't yet created as a business partner into a customer within the SAP CRM system. These customers are then used to run the campaign.

2. Create an attribute list.

After the data source is created, you create the attribute list, which is required to create the customer segmentation. The selection criterion is created within the attribute list to create the customer segmentation. The list consists of the category that states whether you want the attribute list to be used in the campaign execution, product proposal, high-volume segmentation, and so on. You can select the most appropriate value based on your business needs. Generally, in most business scenarios, the category used is `CAMPAIGN EXECUTION` and the usage ID is `CAMPAIGN`. After you have all this information added to the attribute, you assign the data source to the attribute list and create the selection criteria for creating the target group of the customer based on these selection criteria.

3. Define the segmentation basis.

After you've created the attribute, attribute set, data source, and attribute list, the next step in the process is to create the segment, which will consist of the target group of the customer based on the selection criteria created.

You need to create the profile set that consists of the profile and the target group. You can create the filters and drag and drop them in the staging area to create the target group based on these criteria. This criterion matches the value in the business partner attributes and results in the business partner output. The attribute list has a list of fields within the data source that are shown in the locator area.

4. Create a profile set.

A *profile set* is a group of related marketing profiles and/or target groups that are modeled together or which are to be interpreted together, for example, because they are all connected to one marketing campaign. A profile set can also contain other profile sets, in which case they are referred to as *subsets*.

5. Model profiles.

As stated in the previous step, you can model the marketing profiles and/or target groups together.

6. Create a target group.

A *target group* can exist without reference to a profile, but it must reference a profile set ("lies in profile set...") or as a subset, if present ("is attached to profile set ..."). A target group with a profile reference always has a set reference ("lies in profile set..."). You can't move target groups from one profile set to another. A target group is the list of the business partners that is used to conduct any marketing activities and execute the campaign based on the target group.

7. Use a target group.

A target group is used in the campaign, personalized mail form, telesales, and Web Channel. [Figure 5.42](#) shows the three possibilities using the split, keep, and remove functions in the Segment Builder. You can select the attributes in the attribute list and drag and drop them to the staging area, which then gives you the options of SPLIT, KEEP, and REMOVE for creating the target group.

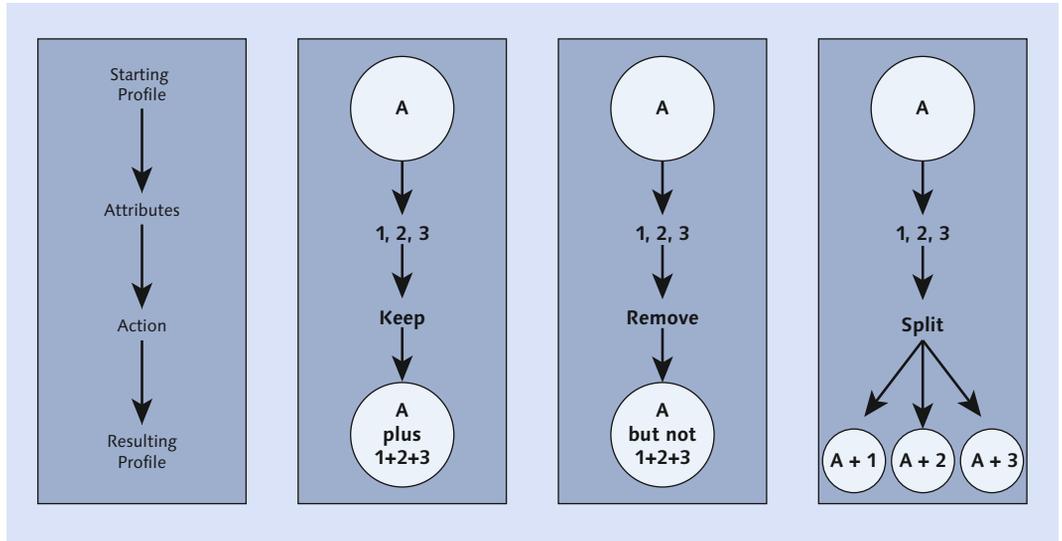


Figure 5.42 Split, Keep, and Remove Profiles

You can assign only one profile to the profile set, and a profile can exist without a target group being assigned to it. No more than one target group can be assigned to the profile, and only one target group can be in active status at a time.

5.2.2 Segmentation Elements

Segmentation has different elements that are required to create a target group and assign it to the segment. The following sections provide examples on business partner attributes and InfoSets.

Creating a Target Group Using Business Partner Attributes

Business partner attributes are one way that a target group can be created. Let's take an example where Organization ABC wants to run a campaign based on the customer segmentation around the California region. The target group should list the customers in the CA region so that Organization ABC can run an email campaign for the customers belonging to that region. In this example, we'll make use of the marketing attribute maintained in the business partner.

Follow these steps:

1. Begin by defining the attributes in the ATTR. DESCRIPTI field as ATTRIBUTE REGION. Then, under the BASIC DATA tab, set the FORMAT as CHAR CHARACTERS and set the NUMBER OF CHARS field to 2 (see [Figure 5.43](#)). Create the attributes with the region CA value.

Attribute: ZREGION
Attr. Descripti: Attribute Region

Basic data | Descriptions | Values

Format
Format: CHAR Characters
Number of Chars: 2

Valuation
 Single Value
 Multiple Values
 Entry Required

Figure 5.43 Create Region

2. Under the VALUES tab, note the ATTRIBUTE VALUE, CA, is linked to the ATTR. DESCRIPTI, CALIFORNIA (see [Figure 5.44](#)).

Attribute Value	Attr. Descripti
CA	California

Figure 5.44 Create Region (2)

3. Create an attribute set, and assign attribute ZREGION to the attribute set (see [Figure 5.45](#)).

Attribute Set: NEW_SET_1000002918

Description: ZAttributeset_region

Authorizat.: Edit Assign

Person:

Organization:

Default:

Attribute	Description
ZREGION	Attribute Region

Attribute: ZREGION

DataType: CHAR Chara

Places: 2 Multi-Val.

Dec.Pl.: 0 Entry Required

Unit: Allow Intervals

Currency: Negative Vals Allowed

Value: California

Figure 5.45 Create Attribute Set

4. Assign the attribute set to the business partner (see [Figure 5.46](#)).

Marketing Attributes

Attribute Set: [Dropdown]

Assign Attribute Set

Description	ID
ZAttributeset_region	NEW_SET_1000002918

Attributes

Attributes in Attribute Set ZAttributeset_region

Attribute	Attr. Description
ZREGION	Attribute Region

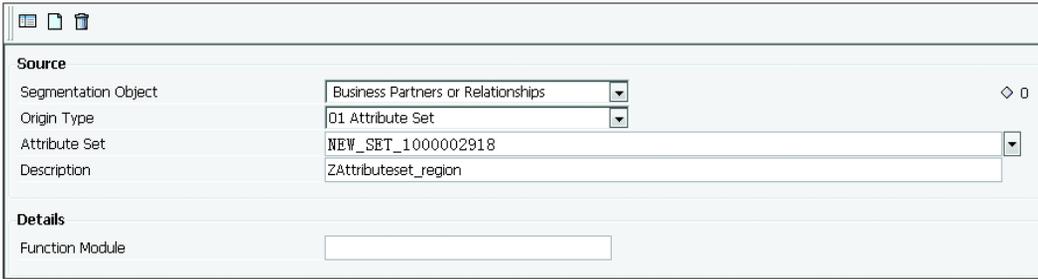
C6X(1)/100 Change Organization: 1004418

Attribute Value	Descr.
CA	California

Figure 5.46 Attribute Set Assigned to the Business Partner

5. Create the data source, and assign the attribute set created. In the SEGMENTATION OBJECT field, select BUSINESS PARTNER OR RELATIONSHIPS. In the ORIGIN

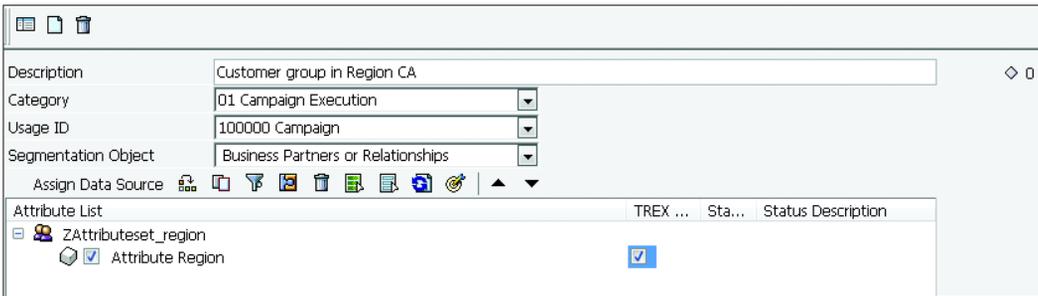
TYPE field, select 01 ATTRIBUTE SET. Assign the ATTRIBUTE SET NEW_SET_1000002918 created in the previous step (see [Figure 5.47](#)).



Source	
Segmentation Object	Business Partners or Relationships
Origin Type	01 Attribute Set
Attribute Set	NEW_SET_1000002918
Description	ZAttributeset_region
Details	
Function Module	

Figure 5.47 Create Data Source

6. Next, create the attribute list. In the CATEGORY field, select 01 CAMPAIGN EXECUTION, and in the USAGE ID field, select 100000 CAMPAIGN. Because this example is a customer segmentation, the SEGMENTATION OBJECT should be BUSINESS PARTNERS OR RELATIONSHIPS. Save the attribute list, and choose ASSIGN DATA SOURCE. Select the data source created, and activate the attribute within the attribute list, as shown in [Figure 5.48](#).



Description	Customer group in Region CA
Category	01 Campaign Execution
Usage ID	100000 Campaign
Segmentation Object	Business Partners or Relationships

Assign Data Source

Attribute List	TREX ...	Sta...	Status	Description
ZAttributeset_region				
Attribute Region	<input checked="" type="checkbox"/>			

Figure 5.48 Create Attribute List

7. Now create the profile set. Log in to BUSINESS ROLE • MARKETINGPRO, and select SEGMENT in the marketing workcenter. In the USAGE field, select CAMPAIGN, and save the profile set. Select the graphical modeler on the PROFILE SET screen (see [Figure 5.49](#)). This will take you to the graphical view of the segmentation.

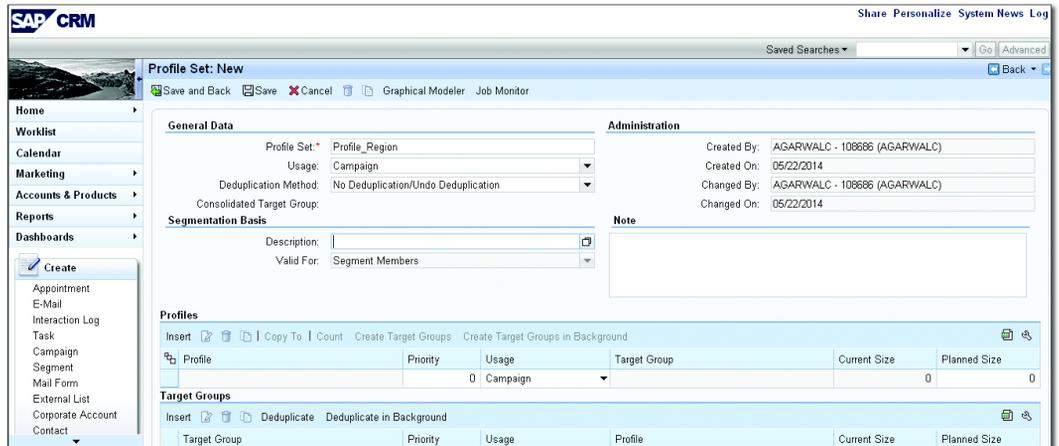


Figure 5.49 Create Profile Set

8. Select the attribute list created (see [Figure 5.50](#)).

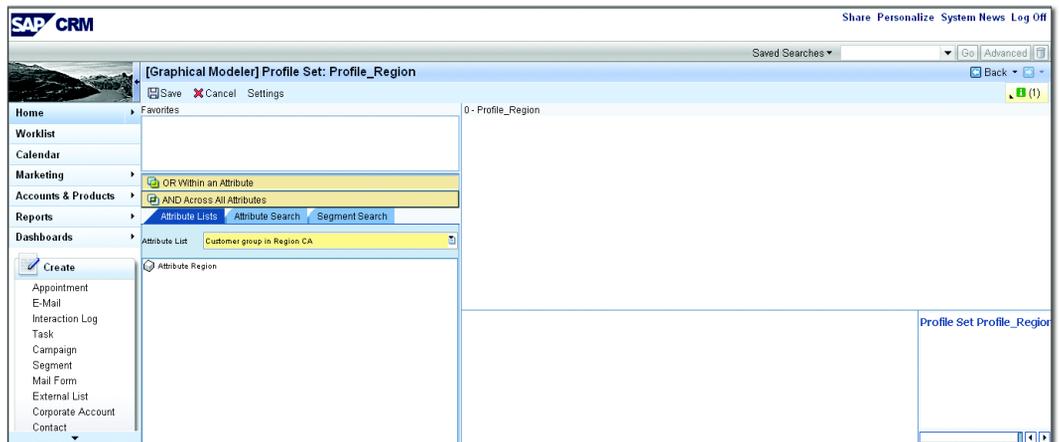


Figure 5.50 Graphical Modeler of the Segmentation

9. Right-click on the ATTRIBUTE REGION and add the filter REGION CA, as shown in [Figure 5.51](#).

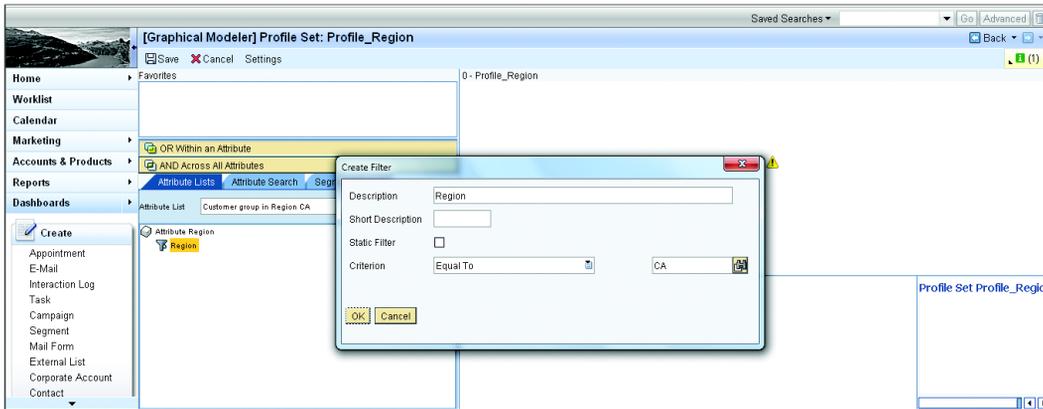


Figure 5.51 Creating a Filter for Region CA

10. Drag and drop the filter in the staging area, as shown in [Figure 5.52](#).

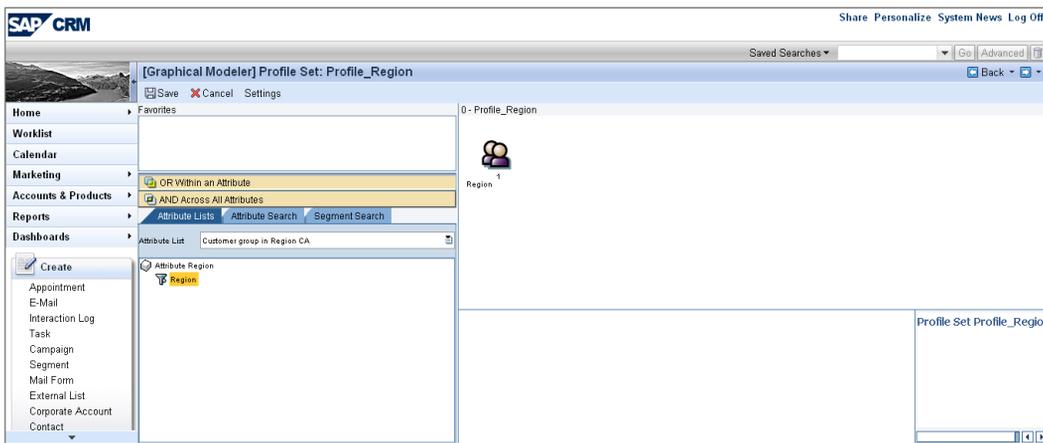


Figure 5.52 Moving the Filter to the Staging Area

11. Right-click on the icon under PROFILE_REGION, and click on COUNT to view the number of business partners assigned with the Marketing Attribute – Region CA. In this example, the attribute region is assigned to just one business partner; therefore, you'll see only one count of business partner.
12. Again right-click the region icon as shown in [Figure 5.53](#) to select BUILD THE TARGET GROUP. You can build the target group in a foreground or back-

ground. The target group shows the number of customers for which you can run the campaign all at once. After the target group is created, you can view it within the profile set.

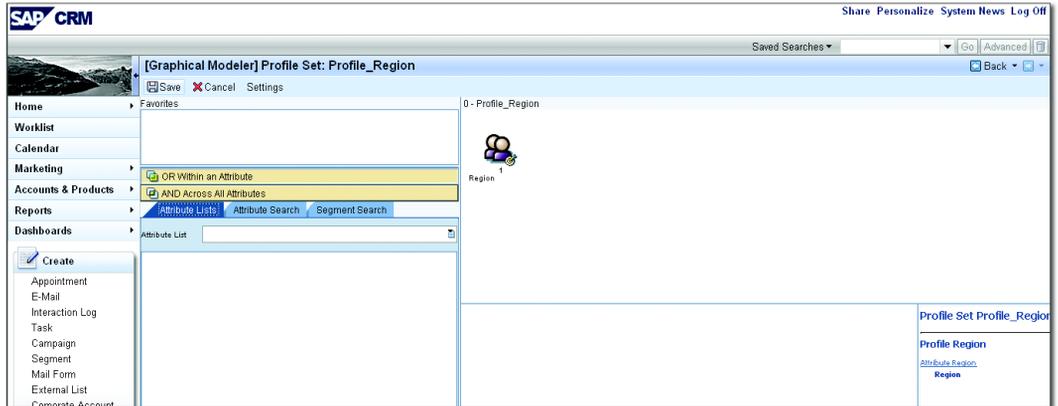


Figure 5.53 Building a Target Group

13. As shown in Figure 5.54, you can see if the target group ran successfully in the background under the JOB STEPS section.

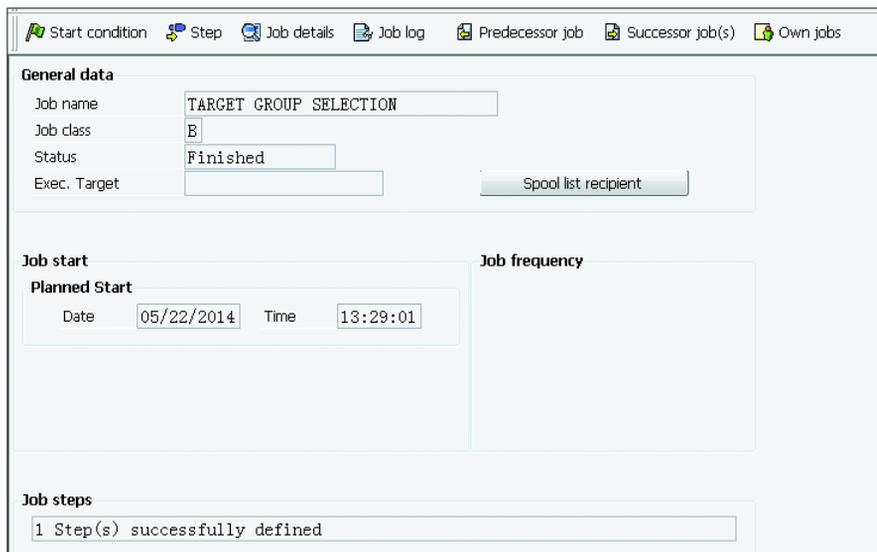


Figure 5.54 Job for the Target Group Creation

14. Click **SAVE** and then **BACK** to view the profile set. You'll see the profile and the target group created with the count 1, as shown in [Figure 5.55](#).

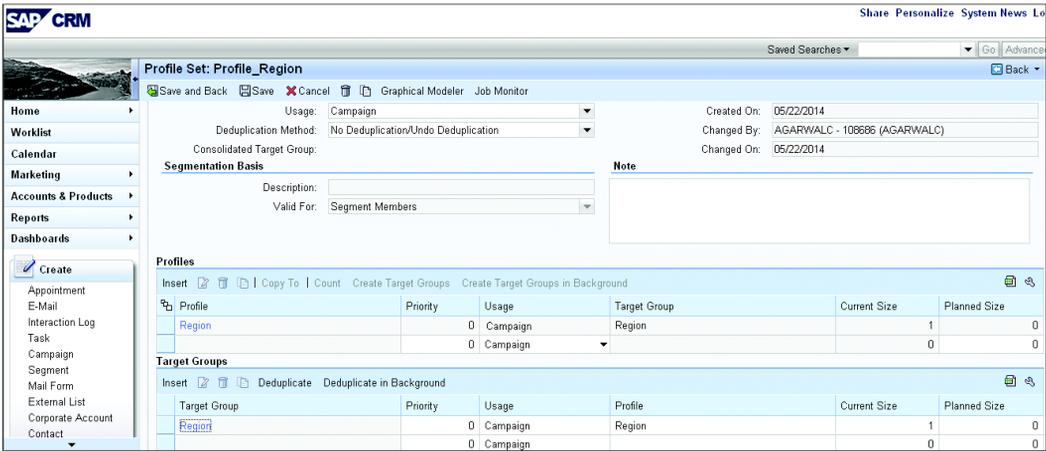


Figure 5.55 Profile and Target Group Created with the Business Partner Count

15. The business partner that was assigned with the marketing attribute Region CA is now shown in the **TARGET GROUP** field, as shown in [Figure 5.56](#).

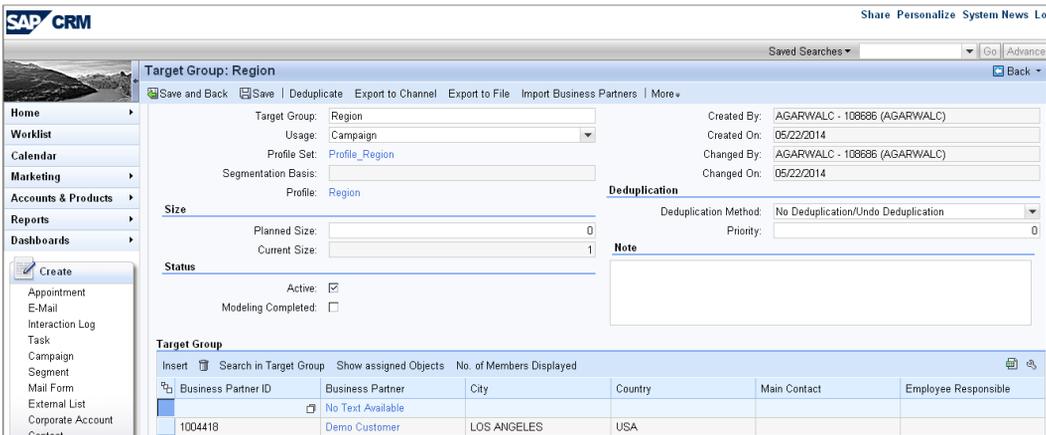


Figure 5.56 Business Partner Assigned to the Target Group

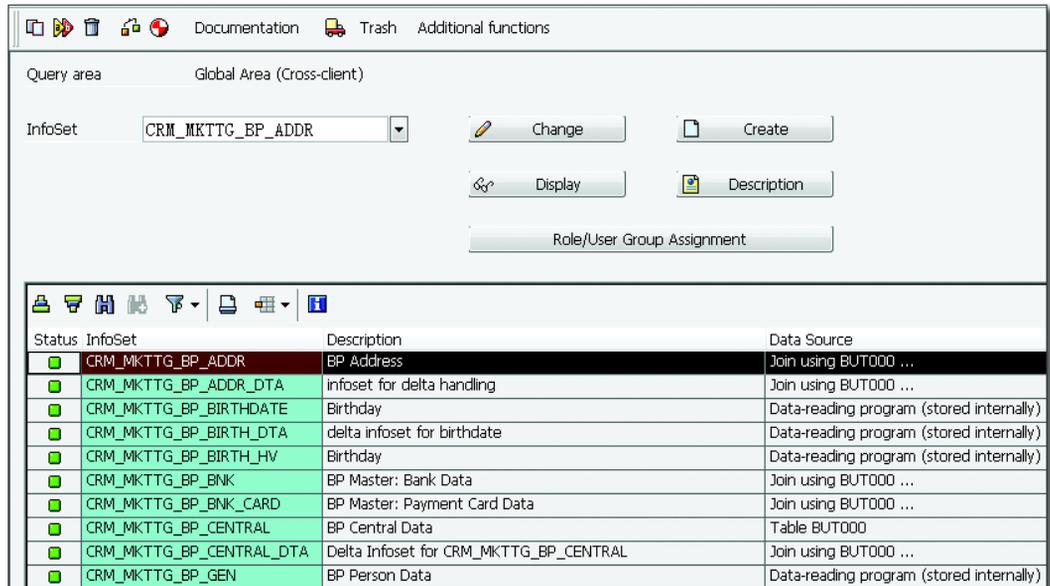
After the segment is created based on the marketing attribute, you can assign the segment to the campaign to run the campaign either via email or phone.

Create Target Group Using InfoSets

InfoSets can also be used to create target groups for segmentation. As an example, let's say that Organization ABC wants to run a campaign based on the customer segmentation around the California region. The target group should list the customers in the Region CA so that Organization ABC can run an email campaign for the customers belonging to the California region. In this example, we'll use the InfoSet to create the target group.

The following is an example of a standard InfoSet CRM_MKTTG_BP_ADDR. You can create a custom InfoSet based on your business scenario. Follow these steps:

1. The InfoSet maintenance screen can be accessed via Transaction SQ02. Click the CHANGE button to view the list of tables, as shown in [Figure 5.57](#).



Status	InfoSet	Description	Data Source
■	CRM_MKTTG_BP_ADDR	BP Address	Join using BUT000 ...
■	CRM_MKTTG_BP_ADDR_DTA	infoset for delta handling	Join using BUT000 ...
■	CRM_MKTTG_BP_BIRTHDATE	Birthday	Data-reading program (stored internally)
■	CRM_MKTTG_BP_BIRTH_DTA	delta infoset for birthdate	Data-reading program (stored internally)
■	CRM_MKTTG_BP_BIRTH_HV	Birthday	Data-reading program (stored internally)
■	CRM_MKTTG_BP_BNK	BP Master: Bank Data	Join using BUT000 ...
■	CRM_MKTTG_BP_BNK_CARD	BP Master: Payment Card Data	Join using BUT000 ...
■	CRM_MKTTG_BP_CENTRAL	BP Central Data	Table BUT000
■	CRM_MKTTG_BP_CENTRAL_DTA	Delta Infoset for CRM_MKTTG_BP_CENTRAL	Join using BUT000 ...
■	CRM_MKTTG_BP_GEN	BP Person Data	Data-reading program (stored internally)

Figure 5.57 Create InfoSet

2. Click JOIN to view the list of the table joins, as shown in [Figure 5.58](#).
3. In the next screen, the table joins business partner table BUT000 to the business partner address table BUT020 and eventually to the ADRC table that contains the REGION field (see [Figure 5.59](#)).

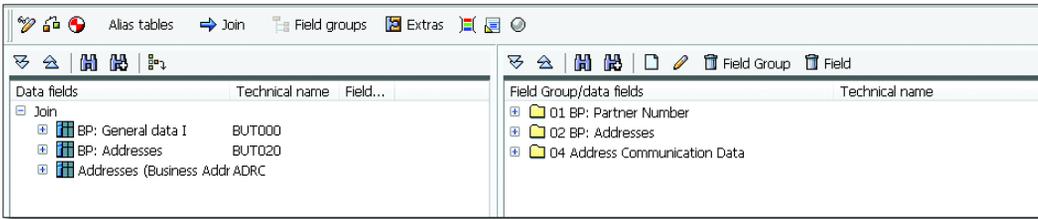


Figure 5.58 Displaying Table Joins for the InfoSet

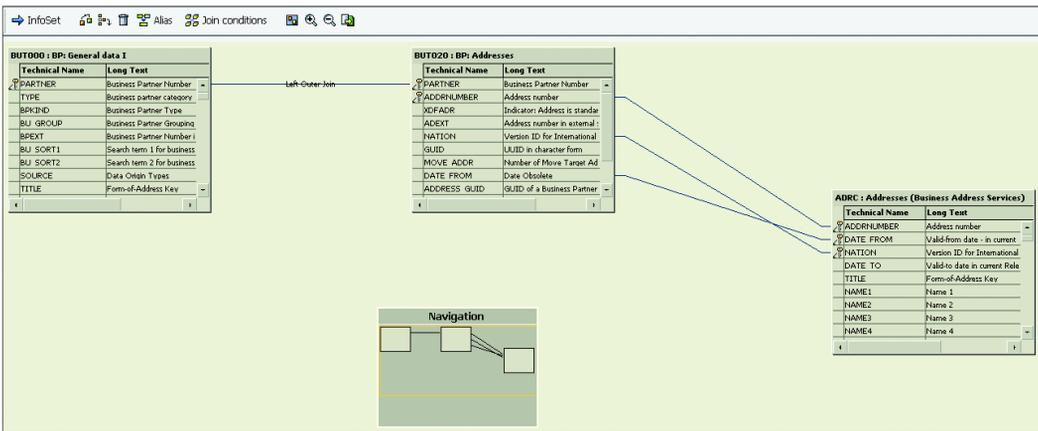


Figure 5.59 Business Partner Table Joins

- Next, you create the data source and assign it to the attribute set you created previously. As shown in [Figure 5.60](#), select BUSINESS PARTNERS OR RELATIONSHIP as the SEGMENTATION OBJECT, and 03 INFOSET as the ORIGIN TYPE. Assign INFOSET CRM_MKTTG_BP_ADDR to the data source, and set BUT000-PARTNER as the BUSINESS PARTNER FIELD. You also need to assign the FUNCTION MODULE that converts the business partner number to GUID when counting the business partner numbers while building the target group.
- Next, create the attribute list. As shown in [Figure 5.61](#), select 01 CAMPAIGN EXECUTION in the CATEGORY field, and select 100000 CAMPAIGN in the USAGE ID field. Because this is an example of the customer segmentation, the SEGMENTATION OBJECT is BUSINESS PARTNER OR RELATIONSHIP. Save the attribute list, and click the ASSIGN DATA SOURCE button. Select the data source created (CRM_MKTTG_BP_ADDR), and create a filter for the COUNTRY KEY and REGION (see [Figure 5.61](#)).

Source

Segmentation Object: Business Partners or Relationships ◇ 0

Origin Type: 03 InfoSet

RFC Destination:

InfoSet: CRM_MKTTG_BP_ADDR

Description: BP Address

Details

Business Partner Field: BUT000-PARTNER Contains GUID

BP Category Field: Contains ID

Related Partner Field:

Related BP Cat Field:

Relationship Field:

Function Module: CRM_MKTTG_PF_BP_TAB_TO_GUID

Object

Object:

Partner Function:

Delta Information

Delta InfoSet:

Source ID:

Figure 5.60 Creating a Data Source

Description	Technical Name
ZAttributset_region	NEW_SET_1000002918
Birthday_AG30	CRM_MKTTG_BP_BIRTHDATE
BP Address	CRM_MKTTG_BP_ADDR
BP Central Data	CRM_MKTTG_BP_CENTRAL
Delta Infoset for CRM_MKTTG_BP_CENTRAL	CRM_MKTTG_BP_CENTRAL_DTA

Attribute List

- City
- City postal code
- Communication Method (Key) (Business Address Services)
- Country Key
 - USA
- Date Obsolete
- District
- Flag: Fax number(s) maintained
- Flag: Pager address maintained
- Flag: Printer maintained
- Flag: RFC destination(s) maintained
- Flag: RML (remote mail) address(es) maintained
- Flag: SSF maintained
- Flag: Telephone number(s) maintained
- Flag: Teletex number(s) maintained
- Flag: Telex number(s) maintained
- Flag: URI/FTP address maintained
- Flag: X-400 address(es) maintained
- Indicator: Address is standard address
- Indicator: E-Mail Address(es) Maintained
- International address version ID
- Language Key
- Region (State, Province, County)
 - California

Figure 5.61 Creating the Attribute List

6. Next, create a profile set by following the menu path, LOGIN TO BUSINESS ROLE • MARKETINGPRO and selecting SEGMENT in the marketing work-center. Enter the USAGE CAMPAIGN, and save the profile set.
7. Select the GRAPHICAL MODELER on the PROFILE SET screen. This will take you to the graphical view of the segmentation. Click the ATTRIBUTE LIST tab, and select INFOSET_ATTRIBUTE_LIST. Drag and drop the REGION filter into the staging area (see [Figure 5.62](#)).

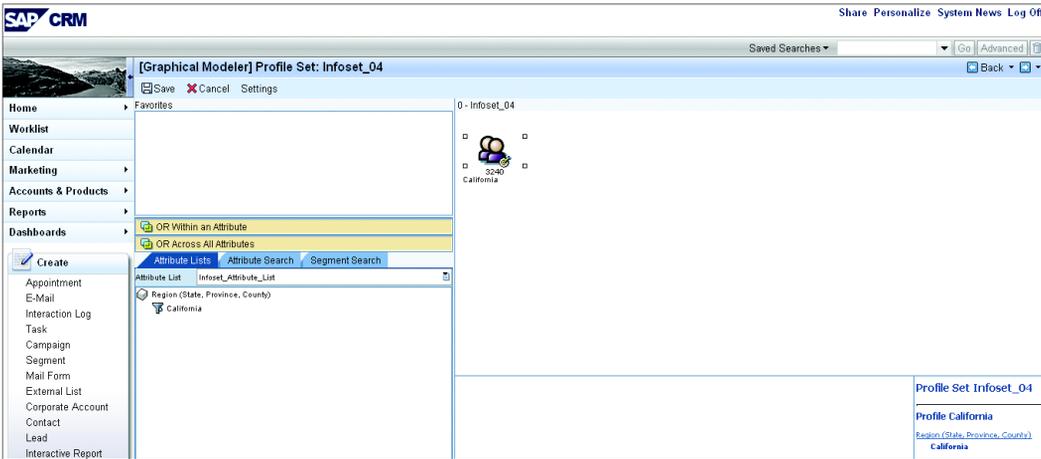


Figure 5.62 Building the Target Group

8. Right-click on the icon in the staging area, and click on COUNT to view the number of business partners assigned with Region CA. The business partner count will also be displayed.
9. Again, right-click on the icon to select BUILD THE TARGET GROUP. You can build the target group in a foreground or background. After the target group is created, you can view it within the profile set, as shown in [Figure 5.63](#).

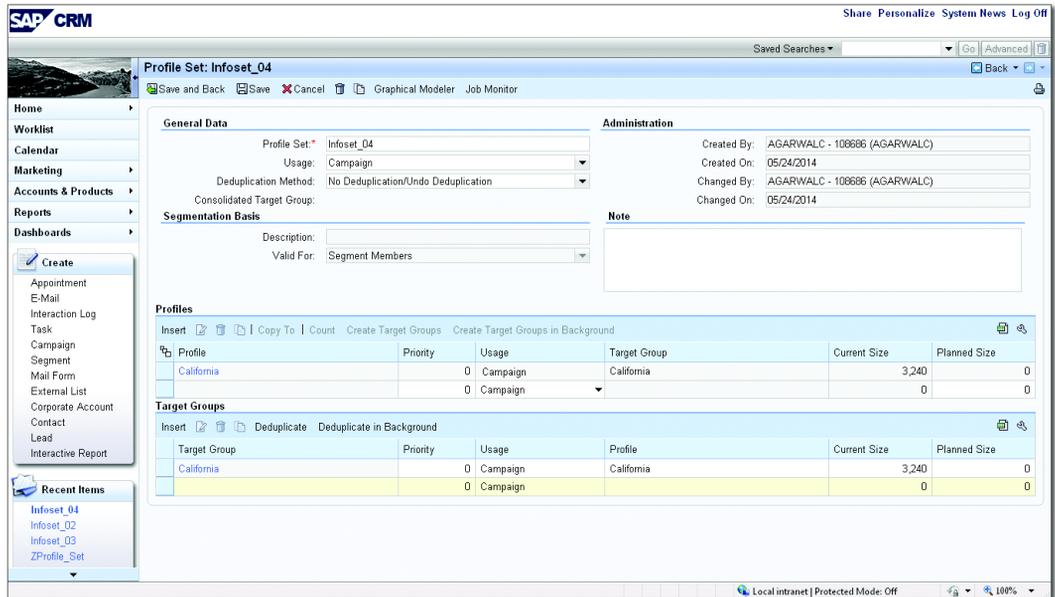


Figure 5.63 Profile and Target Group Created with the Business Partner Count

5.2.3 Segmentation Basis

Segmentation basis allows you to restrict the customers that shouldn't be considered when creating the customer segmentation. The target group that may be assigned to the profile set within a specific segmentation can consist of more customers. Segmentation basis excludes the non-relevant customers for the customer selection list. The segmentation basis can be created from the target group.

For example, if you want to exclude high-risk customers, you can create the segmentation basis on the customer attribute that excludes these customers. The segmentation basis is used as a preselection criterion within the segment to filter the customer. It improves the performance and helps to speed up the selection process. In this section, we'll look at the configuration steps involved with creating and customizing a segmentation basis. Follow these steps:

1. Create the segmentation basis from the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • SEGMENTATION • CLASSIC SEGMENTATION • DEFINE SEGMENTATION BASIS, or click on MORE • DEFINE SEGMENTATION BASIS from the target group, as shown in [Figure 5.64](#).

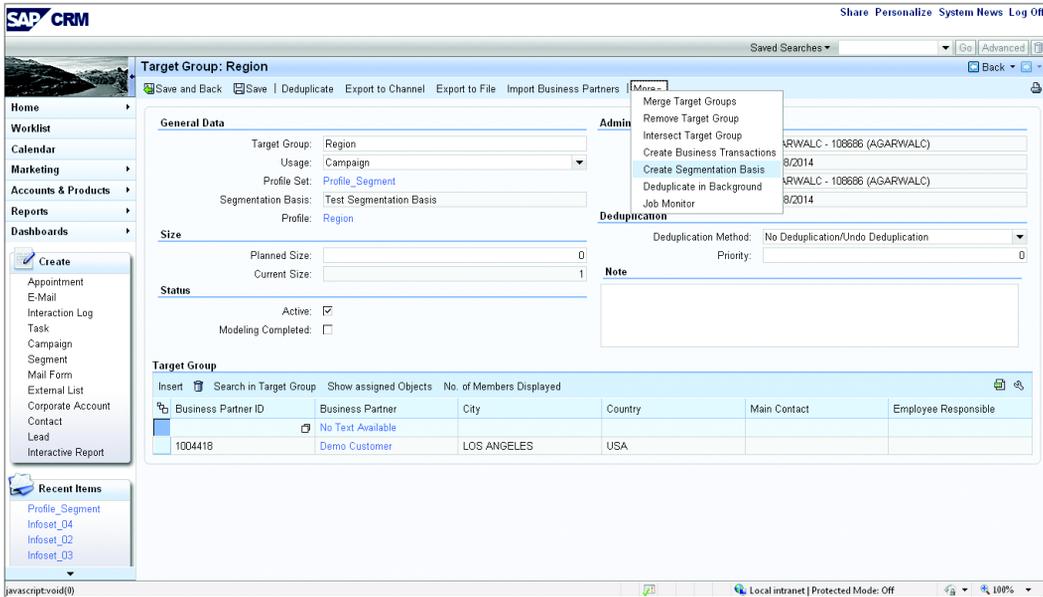


Figure 5.64 Creating a Segmentation Basis from the Target Group

2. Enter a description in the SEGMENTATION BASIS field, and choose SEGMENTATION BASIS as the usage, as shown in Figure 5.65. Click CREATE to go to the CREATE SEGMENTATION BASIS screen. This will also copy all the customers from the target group to the segmentation basis.



Figure 5.65 Creating a Segmentation Basis

3. Save the segmentation basis, as shown in Figure 5.66.

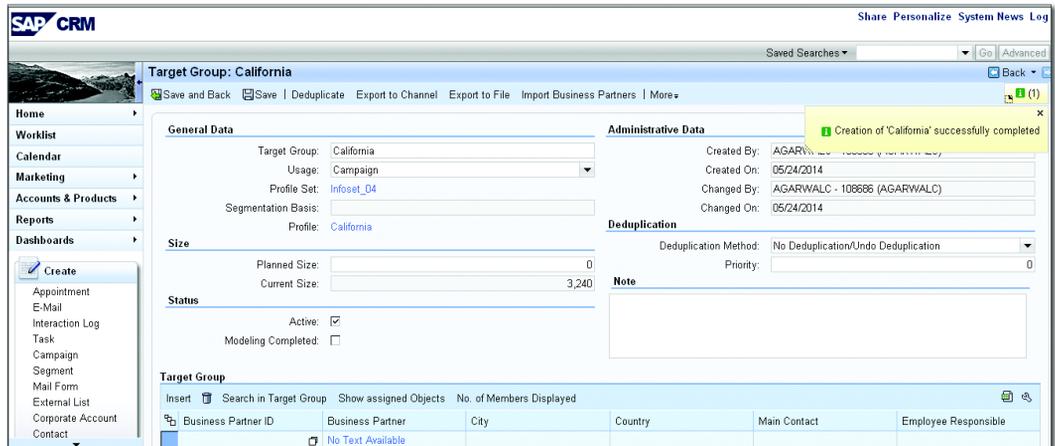


Figure 5.66 Segmentation Basis Created

4. You can also create the segmentation basis via SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • SEGMENTATION • CLASSIC SEGMENTATION • DEFINE SEGMENTATION BASIS. Figure 5.67 shows the creation of the segmentation basis from Transaction CRMD_MKTSEG_MGR.

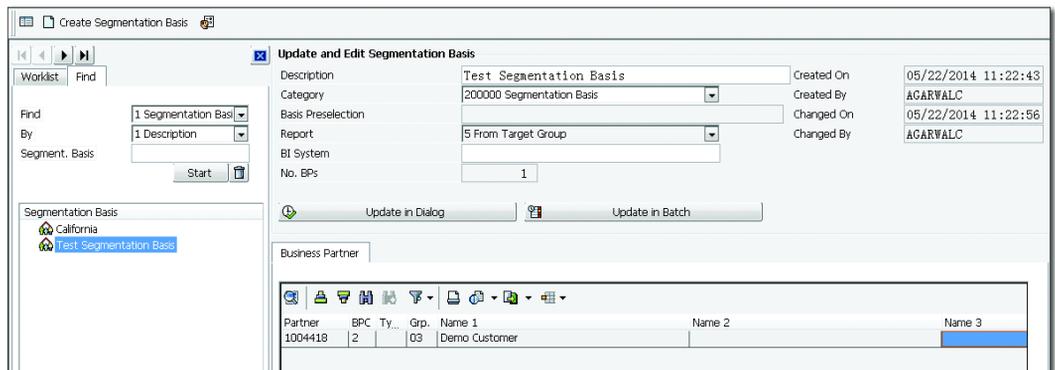


Figure 5.67 Creating a Segmentation Basis from Transaction CRMD_MKTSEG_MGR

5. Figure 5.68 shows that if you try to enter a partner that isn't listed in the segmentation basis, then you'll receive an error message. This shows the business partner filtration occurring in the segmentation basis before the target group is created.

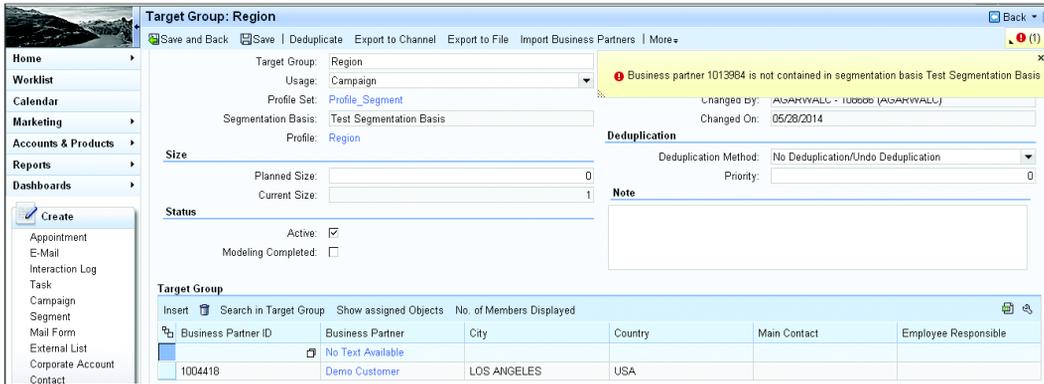


Figure 5.68 Segmentation Basis Validation

- If you want to make the segmentation basis mandatory based on the category selected in the profile set or while modeling the segmentation for a particular usage, activate the SEGMENTATION BASIS MANDATORY checkbox via the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • SEGMENTATION • GENERAL SETTINGS • DEFINE USAGE FOR SEGMENTS.
- You can define the usage for segments, as shown in Figure 5.69. Each element used in the segmentation, such as the segment, target group, and attribute list, is assigned to the usage belonging to the category shown in Figure 5.69.

ID	Category	MSA	SB mandat.	Description of Usage
100000	01 Campaign Execution	<input type="checkbox"/>	<input type="checkbox"/>	Campaign
110000	01 Campaign Execution	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Campaign Execution (Ma
200000	02 Segmentation Basis	<input type="checkbox"/>	<input type="checkbox"/>	Segmentation Basis
300000	03 Product Proposal	<input type="checkbox"/>	<input type="checkbox"/>	Product Proposal
400000	04 Processing Group for Busi	<input type="checkbox"/>	<input type="checkbox"/>	Processing Group for Bu:
500000	05 Business Partner Group for	<input type="checkbox"/>	<input type="checkbox"/>	Business Partner Group f
600000	06 Conditions	<input type="checkbox"/>	<input type="checkbox"/>	Conditions
600001	06 Conditions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conditions Test
700000	07 Partner Authorization Gro	<input type="checkbox"/>	<input type="checkbox"/>	Partner Authorization Gr
800000	08 Data Quality Administrati	<input type="checkbox"/>	<input type="checkbox"/>	Data Quality Administrati
900000	09 High Volume Segmentation	<input type="checkbox"/>	<input type="checkbox"/>	High Volume Segmentat
999999	10 High Volume Segmentation	<input type="checkbox"/>	<input type="checkbox"/>	High Volume Segmentat

Figure 5.69 Defining Usage for Segments

5.2.4 Deduplication

Deduplication of marketing segments means that if you don't want to run a campaign for the same business partner multiple times, then you have to set the rules and assign a deduplication method at the marketing segment and target group levels.

For example, if the same customers are repeated in the various steps of running a campaign, and you want to restrict multiple campaigns from being sent to the same customer, then implement the deduplication method within the BAdI Deduplication Method as stated in the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • SEGMENTATION • BUSINESS ADD-INS (BADIS) • BADI: DETERMINATION OF DEDUPLICATION METHOD. You can also prioritize the profile or the target groups within the segments to define the deduplication order.

In this section, we looked at the segmentation process flow, which helped explain the marketing functions. The segmentation basis and deduplication functionality within the marketing segments brings additional filter criteria. We've also gone through the varied user interfaces such as building a target group via the graphical method.

5.3 External List Management

External List Management (ELM) allows you to convert any external source of a customer list into an SAP CRM system. In simple terms, if there are any business partners that haven't yet been targeted and don't exist in your system, then you can make use of ELM to create the business partner in SAP CRM and the target group to run the campaign on that list. After a customer shows interest, business partners can be converted from prospects to sold-to parties for executing business.

5.3.1 Business Functions

To execute the end-to-end process steps for ELM, you need to know some of the primary ELM functions. The following sections look at these various functions in detail.

Mapping Formats

Mapping formats are required when creating an external list. You can load an external file consisting of a business partner that doesn't exist in the system. The load file can be in TXT format. You'll see the list of business partners in the FIELD MAPPING section of the MAPPING FORMAT creation screen. [Figure 5.70](#) displays the MAPPING FORMAT screen, which includes the button to load the file, field mapping, and available target fields.

The screenshot shows the SAP CRM 'Mapping Format: New' screen. The interface includes a navigation menu on the left with options like Home, Worklist, Calendar, Marketing, Accounts & Products, Reports, Dashboards, and Create. The main content area is divided into several sections:

- General Data:** ID: ZMAP02, Category: Addresses, Mapping Format: Customer Mapping Format.
- Preview:** Select a File button.
- Field Mapping:** A table with columns: Position, File Preview Value, Target Field, Mapping Rule. It contains two rows:

Position	File Preview Value	Target Field	Mapping Rule
1		First name	
2			
- Target Field Filter:** Filter Criterion: Person.
- Available Target Fields:** A table with columns: Target Field, Target Field ID. It lists various fields:

Target Field	Target Field ID
Person ID	PERS_NUMBER
Title	PERS_TITLE_KEY
First name	PERS_FIRSTNAME
Last name	PERS_LASTNAME
Middle Name	PERS_INITIAL
Academic Title 1	PERS_TITLE_ACA1
Date of Birth	PERS_BIRTHDATE

Figure 5.70 Mapping Format

Category and Target Field Filter

Categories drive the list of available target fields used to map the data loaded as a part of the list of external business partners. For example, the ADDRESSES category with TARGET FIELD FILTER of ORGANIZATION consists of different address fields in the AVAILABLE TARGET FIELDS section than you would see if you selected PERSON in the TARGET FIELD FILTER section. Based on your specific scenario, you can select the appropriate values.

You can also add complex mapping rules based on your business needs after you've mapped the field with the required data. This can be done by selecting the data loaded from the external file within field mapping and then selecting the field in the AVAILABLE TARGET FIELDS section that you need to map. After these fields are selected, click on the MAP button shown on the AVAILABLE TARGET FIELDS section.

You can then go to the mapping rule to define any specific rule. You can define the mapping rules for the fields:

- ▶ VALUES
- ▶ CONSTANT
- ▶ CODE

Figure 5.71 displays the mapping rule code.

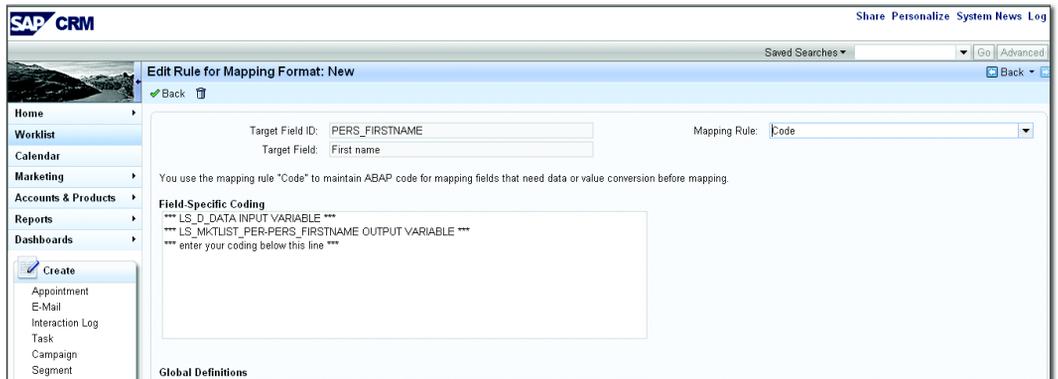


Figure 5.71 Mapping Rule Code

External List

An external list provides the functionality to create, update, and maintain an external list in SAP CRM. Any external list for business or marketing attributes can be uploaded to SAP CRM. You can update the marketing attributes collected to existing business partners as well as create business partners and their target groups (see Figure 5.72).

An external list consists of an origin and customer type, such as a “rented address” customer. An external list has a mapping format assigned prior to its creation. After these attributes are selected, you need to select the process steps, such as read file, map data, maintain business partner, and maintain target group.

Rented Address Customers

Rented address customers don't replicate to SAP ERP and are deleted if they aren't used for any transactions such as leads, opportunities, sales orders, and so on.

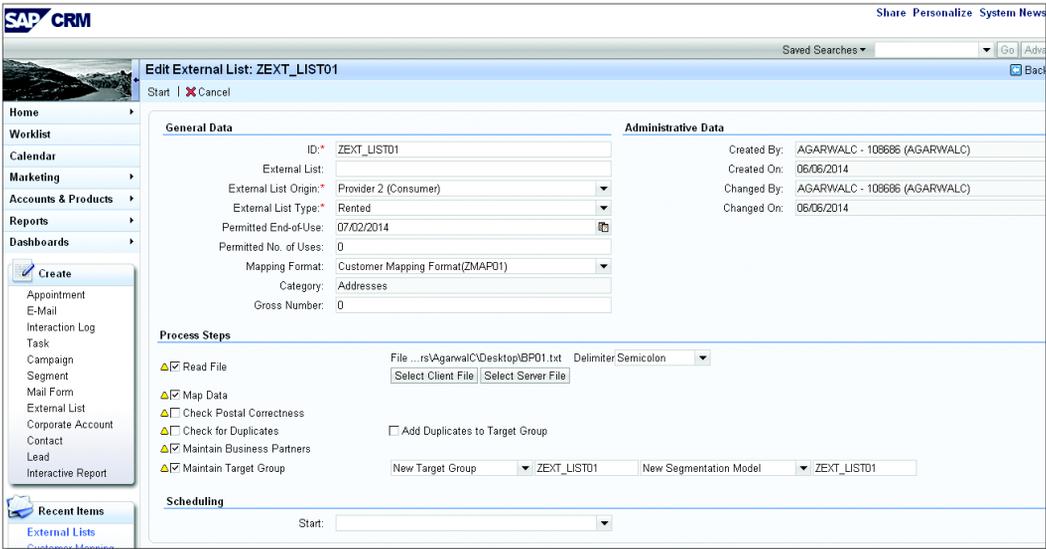


Figure 5.72 External List

With the preceding information, you can run the external list immediately to create the business partner and to maintain the target group. The following are some specific configuration steps for the external list:

1. Define the list type by navigating to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • EXTERNAL LIST MANAGEMENT • DEFINE LIST TYPE. You can mark the list type as RENTED, as shown in Figure 5.73.

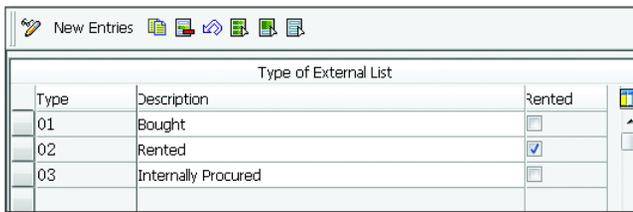


Figure 5.73 List Type

2. Next, define the list origin by navigating to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MARKETING • EXTERNAL LIST MANAGEMENT • DEFINE LIST TYPE. On the screen shown in Figure 5.74, add the new entry for the external list origin.

Origin of Opportunity/Lead		
Ori...	Short Description	Description
001	Trade fair	Trade fair
002	External partner	External partner
003	Campaign	Campaign
004	Telephone inquiry	Telephone inquiry
005	Roadshow	Roadshow
006	Campaign Response	Campaign Response

Figure 5.74 Origin of External List

Rented Address

SAP provides a standard action to delete business partners with the *rented address* function. In Figure 5.75, you'll see the `ACTIVITY_REMOVE_BPFLAG`. If the business partner being loaded from the external list is a rented address customer, and the customer shows any kind of interest in executing some business dialogue with an organization, then you can run the action to delete the rented address flag.

The action profile can be assigned to the transaction when the customer communication is gathered as a part of the activity transaction. This will also allow business partners to replicate back to the SAP ERP system. The configuration path to remove the business partner rented flag is `SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • CHANGE ACTIONS AND CONDITIONS • DEFINE ACTION PROFILES AND ACTIONS`.

Action Profile				
Action Profile		ACTIVITY		
Description		Activities		
Action Definition				
Action Definition	Description	Sort Order	Inactive	
ACTIVITY_CAMPAIGN_AUTOMATION	Start Subsequent Step in Campaign Automation	4	<input type="checkbox"/>	
ACTIVITY_FOLLOWUP	Create Follow-Up Task	2	<input type="checkbox"/>	
ACTIVITY_PRINT	Print Activity	3	<input type="checkbox"/>	
ACTIVITY_REMINDER_MAIL	Send Reminder Mail	1	<input type="checkbox"/>	
ACTIVITY_REMOVE_BPFLAG	Delete Business Partner Classification 'Rented Address'	5	<input type="checkbox"/>	

Figure 5.75 Rented Address Deletion Action

5.3.2 Process Overview

Now that you know some of the standard ELM functions, we can look at the process steps involved in ELM configuration. [Figure 5.76](#) shows a diagram of the ELM process steps.

The ELM process starts by uploading the data from the external list. This is followed by mapping the data with the business partner master fields in SAP CRM. After the data is loaded and mapped, the system triggers a postal check and duplication check to make sure the same business partner isn't created twice. The final step in the ELM process is to run the external list to create the business partner and the target group.

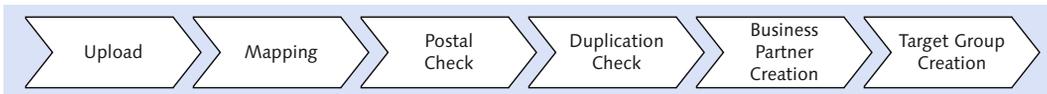


Figure 5.76 ELM Process Steps

After the target group is created, the group members can be used in the campaign and can then be converted into customers. The business partners that aren't converted can be deleted later on.

This section provided information on how a business partner from an external medium can be uploaded into SAP CRM and used to perform marketing functions such as creating target groups and running campaigns.

5.4 Lead Management

A *lead* is a rumor that needs to be verified, a glimpse of a potential future business prospect with a customer. Leads can be derived from just about anywhere and from any organization's employee. A lead is a link between SAP CRM Marketing and Sales functions because it identifies the potential customers that can be converted into sales opportunities.

An organization can use a lead in a number of ways, including the following:

- ▶ When you receive lead information, but don't know who to contact in a company
- ▶ When you get unqualified data related to an investment and want to capture it

- ▶ When you want to distribute leads gained in marketing campaigns in a coordinated way
- ▶ When you want to share your knowledge of potential business with other groups or divisions

As soon as the information is confirmed that a lead wants to do business with an organization, that lead can turn into an opportunity. In some cases, creating a lead isn't necessary. For example, when an organization receives high-quality information directly from a customer, there is already an existing relationship, or the customer has clearly expressed the intention to purchase, lead creation is bypassed to go directly to creating an opportunity.

Essentially, Lead Management should do the following:

- ▶ Capture leads at the earliest possible moment.
- ▶ Substantiate that a possibility for future business actually exists.
- ▶ Hand over leads to Opportunity Management if a possibility for future business exists.
- ▶ Close the lead if no possibility for future business exists.

5.4.1 Business Functions

Lead Management is a business transaction in SAP CRM linked to business partners that show any kind of interest in conducting business with an organization. Some of the key lead aspects are status, origin, lead group, priority, qualification level, and campaign.

Figure 5.77 shows the SAP CRM WebClient UI lead creation screen, which shows the key aspects to enter when a lead is created. For example, the STATUS field is set to OPEN (other statuses can be WON, LOST, ACCEPTED BY SALES, IN PROCESS, etc.), ORIGIN of the lead is set to TRADE FAIR, PRIORITY of the lead is set to VERY IMPORTANT, and QUALIFICATION LEVEL of the lead is set to WARM. At this point, you can assign a campaign, if any, in the CAMPAIGN field.

Leads can be created for a specific time frame, and you can also assign products to the lead based on your business needs. Other functions in leads are similar to any SAP CRM business transaction, for example, parties involved, notes, assessment, transaction history, dates, organization details, actions, and document attachments.

Lead: New [Save] [Cancel] [New] [Distribute] [Follow-Up] [More] [Back]

Lead Details [Edit]

General Data

Type: Lead
 ID:
 Description:
 Prospect: Demo Customer
 Partner Number: 1004418
 Prospect Address: 7160 Chadwood Lane / Columbus OH 43235
 Main Contact:
 Employee Responsible: Chandrakant Agarwal
 Campaign:
 Campaign Description:

Dates

Start Date: 06/07/2014
 End Date: 11/25/2014

Status

Status: Open
 Reason:
 Since: 06/07/2014

Classification

Priority: very important
 Origin: Trade fair
 Group: New Customers

Qualification

Qualification Level: Warm
 Questionnaire Level:

Notes

Figure 5.77 Lead Creation

5.4.2 Process Overview

The Lead Management process is distributed into three phases: lead creation and generation, lead distribution, and lead follow-up. After leads are substantiated and marked as hot leads, they are sent to the sales department to convert them to opportunities. The Lead Management process is as follows:

1. Lead creation and generation

Lead creation and generation can come from various channels of information; for example, leads can be generated as a part of Campaign Management.

Table 5.1 lists the different channels for lead creation. From the SAP CRM application perspective, leads can be created from SAP CRM Online, IC Web Client, Web Channel, and surveys.

Leads can be generated from campaign execution, campaign automation, and segmentation. Any campaign execution can result in lead generation such as response import, response recording, and response email and survey.

Lead Creation	Lead Generation	Campaign Response
<ul style="list-style-type: none"> ▶ SAP CRM Online ▶ IC WebClient UI ▶ E-Selling and web store ▶ Channel Portal ▶ Survey 	<ul style="list-style-type: none"> ▶ Campaign execution ▶ Campaign automation ▶ Segments 	<ul style="list-style-type: none"> ▶ Response import ▶ Response recording ▶ Response email and survey

Table 5.1 Lead Creation Channels

2. Lead distribution

After a lead is generated, it follows the process distribution where different kinds of leads are distributed to different departments within an organization. This can be controlled via workflow implementation in the Lead Management. In a typical example of lead qualification, hot leads are sent to the sales department, warm leads are sent to the marketing department for further follow-ups, and cold leads are sent to the channel partners to ask if they can help to convert those leads to warm or hot leads.

3. Lead follow-up

After leads are distributed, an organization will follow up to try and turn those leads into opportunities.

5.4.3 Configuring Leads

In this section, we'll look at an example of a standard, or default, lead (Lead Type: LEAD) configuration that shows the transaction type details and the business transaction categories assigned to it. We'll go through the configuration, including the item category configuration.

The TRANSACTION CATEGORY BUS2000108 LEAD is assigned to the LEAD transaction type (see [Figure 5.78](#)). You can assign only specific business transaction categories to the TRANSACTION TYPE LEAD.

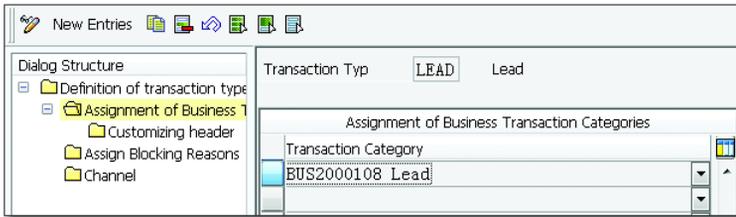


Figure 5.78 Business Transaction Category Assignment

As shown in [Figure 5.79](#), the following fields need to be configured in the lead header:

- ▶ **LEAD GROUP**
The LEAD GROUP is used to classify the lead as a new customer, critical customer, VIP customer, and so on. If you enter the value in the configuration, the same is defaulted when creating the lead transaction.
- ▶ **SOURCE**
Similar to LEAD GROUP, the SOURCE field is the origination of the lead.
- ▶ **ONE LEAD (MAX.)**
If this checkbox is activated, you can create one lead per business partner, and you can't create another lead for the same business partner.

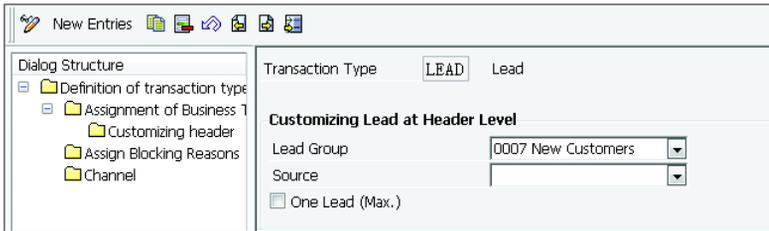


Figure 5.79 Lead Header Details

Item Category Configuration

You can also add items to a lead opportunity and thus have different controls at the item versus the header. The configuration of the lead item category is no different from any other transaction type in SAP CRM. You can configure the item category profiles for text determination, partner determination, status profile,

org data profile, action profile, and so on, based on your business needs. The configuration logic and steps were already covered in [Chapter 4](#). The OBJECT TYPE for the lead item category is the BUS2000129 CRM LEAD ITEM (see [Figure 5.80](#)).

Section	Field	Value
General	Item Category	LEAD
	Lead Item	Lead Item
	Description	Lead Item
	Object Type	BUS2000129 CRM Lead Item
	Status Object Type	
	<input type="checkbox"/> Inactive	
	<input type="checkbox"/> Relev.wgt/vol.	
	<input type="checkbox"/> Date & Qty Are Fixed	
	Usage Object	0 Item Contains Product, But Not Individu...
	Preceding Ref. Object Type	
Profiles	Text Det.Proc.	
	PartnerDetProc	00000021 Leads (Item)
	Status Profile	
	ATP Profile	No Availability Check
	Org. Data Prof.	000000000002 Standard Org. Data Profile (Item)
	AP Procedure	
	<input type="checkbox"/> Preceding Ref. Mandatory	
<input type="checkbox"/> Territory Check Not Required		
Structure	Structure scope	Do not explode material structure
	Delivery Group	Do not Create Delivery Groups
Configuration Data	Var. matching	Variant matching not allowed

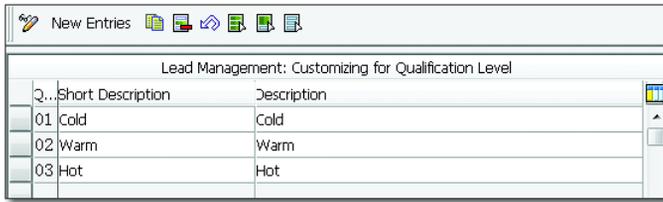
Figure 5.80 Lead Item Category

Lead Settings

A number of specific configuration settings can be made for leads:

► Define lead qualification levels

You can define the qualification levels of a lead based on your business needs. SAP has three qualifications: COLD, WARM, and HOT leads. Use the following path to configure the lead qualification level: SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR LEADS • DEFINE LEAD QUALIFICATION LEVELS (see [Figure 5.81](#)).



Lead Management: Customizing for Qualification Level	
Short Description	Description
01 Cold	Cold
02 Warm	Warm
03 Hot	Hot

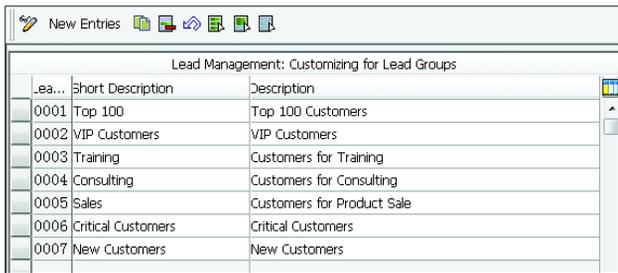
Figure 5.81 Qualification Levels

In addition to the preceding configuration, you can use questionnaires to help you assign the correct qualification level to a lead. The answers to each question can be evaluated and a qualification level assigned to the lead automatically, according to the proportion of favorable replies.

You can configure the questionnaire via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR LEADS • QUESTIONNAIRES FOR LEADS.

► **Define lead groups**

The path to configure the lead groups is SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR LEADS • DEFINE LEAD GROUPS. Here, you can define the lead group to classify customers based on customer type (see [Figure 5.82](#)).

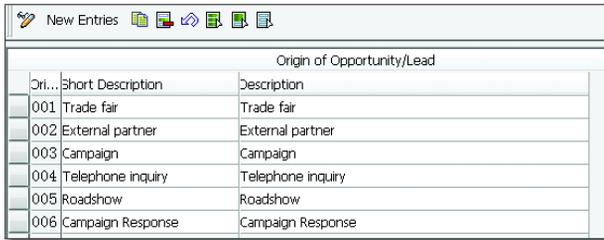


Lead Management: Customizing for Lead Groups		
Lea...	Short Description	Description
0001	Top 100	Top 100 Customers
0002	VIP Customers	VIP Customers
0003	Training	Customers for Training
0004	Consulting	Customers for Consulting
0005	Sales	Customers for Product Sale
0006	Critical Customers	Critical Customers
0007	New Customers	New Customers

Figure 5.82 Lead Groups

► **Define lead origins**

You can define where a lead originated from (lead origin). This is shown in [Figure 5.83](#) for trade fairs, campaigns, and so on. The path to configure lead groups is SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR LEADS • DEFINE LEAD ORIGINS.

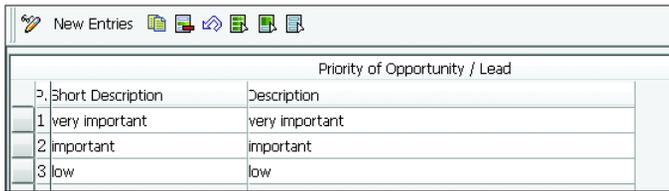


Origin of Opportunity/Lead		
Id	Short Description	Description
001	Trade fair	Trade fair
002	External partner	External partner
003	Campaign	Campaign
004	Telephone inquiry	Telephone inquiry
005	Roadshow	Roadshow
006	Campaign Response	Campaign Response

Figure 5.83 Lead Origins

► Define lead priorities

Here you define whether a lead is important or low priority (see [Figure 5.84](#)). This helps an organization concentrate on the right leads and convert them to customers. The path to configure the lead priorities is SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR LEADS • DEFINE LEAD PRIORITIES.



Priority of Opportunity / Lead		
Id	Short Description	Description
1	very important	very important
2	important	important
3	low	low

Figure 5.84 Lead Priority

► Define the object relationship profile

The object relationship profile helps you form the relationship of the lead to any other transaction, such as an activity, campaign, or sublead. Let's say you've already created a lead and want to link a campaign to one of the leads that was created separately. You can use the subsequent assignment function on the WebClient UI transaction history assignment block to link these two transactions. These are commonly used to link subleads to show a hierarchical structure. By default, campaigns are provided as references at the lead header (see [Figure 5.85](#) and [Figure 5.86](#)). You can configure the object relationship profile in the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR LEADS • DEFINE OBJECT RELATIONSHIP PROFILE.

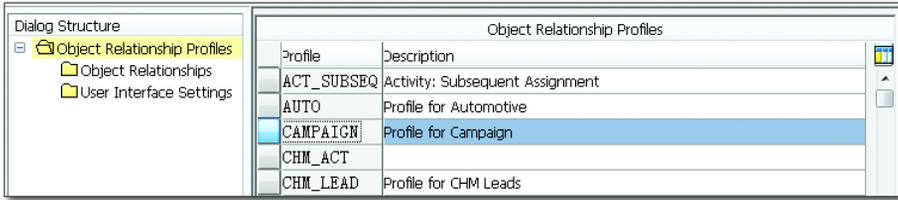


Figure 5.85 Object Relationship Profile

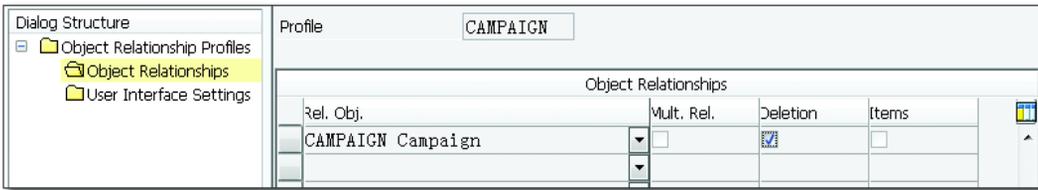


Figure 5.86 Object Relationship Campaign

You assign the object relationship profile to the lead transaction type, as shown in [Figure 5.87](#). This activates the functionality of linking the campaign to the leads.

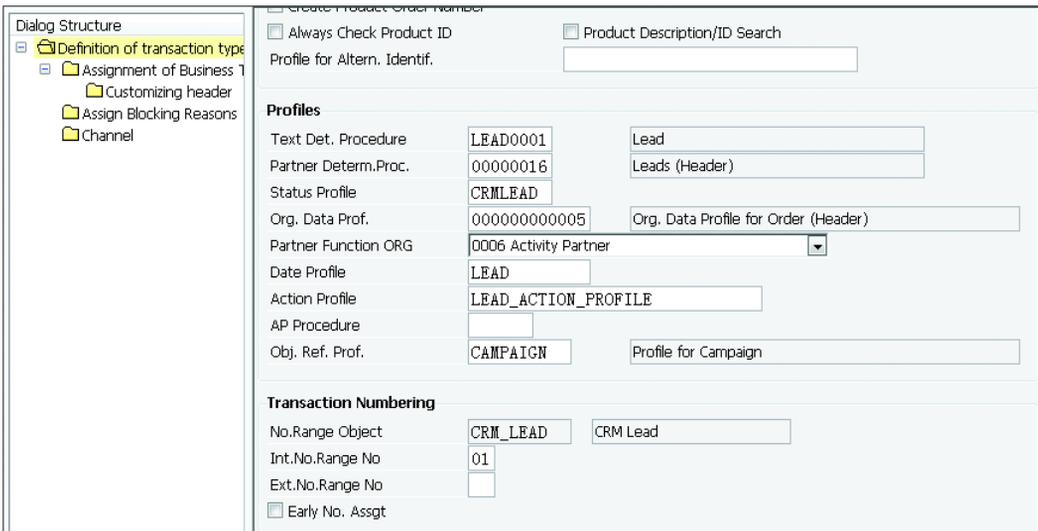


Figure 5.87 Assigning the Campaign Object Relationship Profile to the Lead Transaction Type

This section provided details on how and when leads are generated. The business functionality covered in this section for Lead Management will help you understand how leads can be converted into opportunities and the configuration required for setting each of the attributes for lead objects. Qualifying a lead is important in the Lead Management process because the qualification can trigger future opportunities.

5.5 Loyalty Management

Loyalty Management tracks customer buying behaviors and provides an organization with the opportunity to determine prime customers based on the points accrued. Typical examples are airline frequent flyer programs or any retail chain customer loyalty program.

Loyalty Management helps an organization manage its complex loyalty programs and customers more effectively. By identifying the most valuable customers, an organization will find ways to retain them.

Enhanced Loyalty Management

To use the enhanced function within Loyalty Management for benefits, voucher handling, sales order integration, complaints integration, outbound correspondence, enhanced card management, and membership enhancements, you need to activate the business function CRM_LOY_PROD.

Loyalty Management is all about rewarding your customers and retaining them. With Loyalty Management, you can easily identify a customer's buying trends and handle prime customers separately based on your business needs.

The following are the four building blocks within Loyalty Management:

► Program management

Loyalty Management allows you to set up a loyalty program for a business partner and assign different tier levels consisting of *tier groups*. You can also define a point profile that contains the types of loyalty points that members of the loyalty program can earn. You assign the calculation rule to determine whether you want any time limit to expire the points. Loyalty programs allow you to assign the reward program rules and define the dynamic attributes before releasing the loyalty program.

► **Reward rule management**

Reward rule management determines the rules and conditions set up in the system to calculate the points incurred by the customer. In other words, the reward rules represent the terms and conditions of the loyalty program and determine the actions that are performed for different types of member activities.

► **Membership handling**

After the loyalty program is created, you can register customers to specific loyalty programs. Registration can be done via the IC or the Web Channel. After you maintain the membership, customers can earn points based on their purchasing behavior. They can redeem points for the products; that is, they can select products from a reward catalog and acquire them.

► **Processing engine**

The processing engine is the core of the loyalty management capability. The engine is highly scalable and processes all member activities and tier transition evaluations.

Loyalty Management can be accessed via the Web Channel, IC, and WebClient UI. Multichannel interactions, such as the Internet, Interactive Voice Response (IVR), fax, phone, letter, email, and backoffice, can be used for reaching out to customers. A loyalty program contains tier groups and levels. Reward rules and point types are assigned to the loyalty program. Member registration can be done through the loyalty program.

Configuring Loyalty Management

To configure Loyalty Management, refer to SAP Note 1250732 – Loyalty Management SAP CRM 7.0 SP01: Customizing Documentation, and SAP Note 1178046 – CRM Middleware Configuration for Loyalty Application.

Loyalty Management allows you to customize the loyalty programs for customers. In this section, we discussed the four functional areas of Loyalty Management: program management, reward rules, membership management, and the processing engine. In a nutshell, Loyalty Management capabilities provide rewards, retain high-value customers, increase customer satisfaction, and encourage profitable customer behavior.

5.6 Product Proposals

Product proposals allow organizations to propose certain product lists to increase the sales of their products. In simple terms, product proposals are recommendations to buy related products when you place an order. For example, if you buy a camera on a website, you'll see recommendation products such as a SD card, camera bag, and so on. The product proposal functionality within SAP CRM is available with the Web Channel and IC applications.

In this section, we'll look at different product proposal types, as well as an overview of the product proposal process.

5.6.1 Product Proposal Types

A product proposal is an opportunity for an organization to increase its sales and increase its revenue. Following are the different types of product proposals available in SAP CRM:

► Cross-sell

Cross-sell is an alternative product that is proposed by an organization to increase sales. The product association rules are used to determine the alternative products for cross-selling or up-selling/down-selling. Cross-sell has a leading product and a dependent product assigned to it.

Cross-selling Rule

You can have only one leading product as a cross-selling rule for SAP CRM web sales.

► Down-sell

An alternative product with a lower price is proposed to the customer in a down-selling scenario wherein the customer wants to buy a similar kind of product with the lower price.

► Up-sell

An alternative product with a higher price is proposed to the customer in an up-selling scenario wherein the customer wants to buy a similar kind of product with a higher price. For example, there can be brand-specific products that have a relatively higher price than locally made products.

► Top n product lists

Top n product lists are a combination of the products and business partners being stored as master data. The list can be shown as a type of the product proposal when placing an order for a customer assigned to the top n product list. Top n product lists are stored and maintained in the partner product range (PPR) structure.

Figure 5.88 shows the screenshot of the TOP N LIST, which shows the products that are manually assigned. The business partner segmentation is assigned to determine which partners are applicable for the products proposed. The products can be manually assigned or fetched via standard rule (i.e., STANDARD RULE TOP N PRODUCTS is an option for AUTOMATIC PRODUCT EVALUATION).

You can activate the EXCLUDE checkbox for the items being added to the list of the business partners assigned to the segmentation. This functionality works to exclude the list of the products for a list of the business partners in the target group from being shown on the product proposal screen on the sales order.

The screenshot displays the SAP CRM interface for editing a Top N List. The main content area is titled 'Top N List: Z_TP_LIST01, - Edit Item'. It includes a 'Back' button and a 'Language: English' dropdown. Below this, there are fields for 'ID*' (ITEM-ID01), 'Item:' (ITEM: 423487), and 'Web Shop:'. An 'Exclude:' checkbox is present.

The 'Manually Assigned Products' section contains a table with the following data:

Ranking	ID	Description	Product Type
2	423486	DEMO PRODUCT1	Material
1	423487	DEMO PRODUCT	Material

The 'Options for Automatic Product Evaluation' section shows a 'Rule:' dropdown set to 'Standard Rule Top N Products' and an 'El Report:' field.

The 'Results of Automatic Product Evaluation' section shows a message: 'No result found'.

The 'Validity Periods' section contains a table with the following data:

Valid From	Valid To	Exclude
06/09/2014	06/30/2014	<input type="checkbox"/>
		<input type="checkbox"/>

The 'Segments' section contains a table with the following data:

Segment	Type	Usage Category
Product_Proposa01	Profile Set	Product Proposal

The left sidebar shows navigation options: Home, Worklist, Calendar, Marketing, Accounts & Products, Reports, Dashboards, Create (Appointment, E-Mail, Interaction Log, Task, Campaign, Segment, Mail Form, External List, Corporate Account, Contact, Lead, Interactive Report), and Recent Items (Z_TP_LIST01, Z_CROSS_SELL, XPRA transferred To..., Z_Upd_D1).

Figure 5.88 Top N Product List

► Accessories

If there are any accessories of the product that you want to propose while the customer is placing an order, these accessories can be maintained in the product master data. Irrespective of any specific customer, the product proposal for the accessories can be shown while placing an order for any customer. For example, a mobile case is shown as an accessory when buying a mobile phone online (see [Figure 5.89](#)).

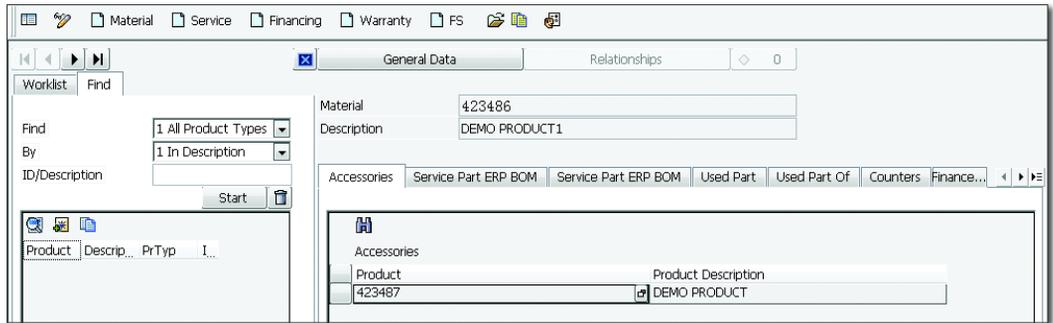


Figure 5.89 Product Accessories

5.6.2 Configuring Product Proposals

For the purposes of example, let's look at a business scenario that would serve as a best case for the project proposal functionality: While running a campaign for a specific customer, Company ABC wants to offer a recommended product for a specific target group. Therefore, when the order is being placed by a customer falling into this target group, a customer service representative should be able to cross-sell the product from the product proposal. The following sections look at the different steps to achieve this functionality.

Create the Target Group with a Product Proposal

Log in to MARKETINGPRO business role, and click on CREATE SEGMENT to create the profile set and target group. The steps to create the target group are covered in [Section 5.2.2](#). In this section, we'll look at the same example from the segmentation topic where the marketing attribute is the data source to create the target group. The attribute region with the value CA is assigned to the business partner 1004418.

In [Figure 5.90](#), the profile set is created with PRODUCT PROPOSAL in the USAGE field. If you don't create the segment with the usage product proposal, then you can't use the target group in the cross-sell rule.

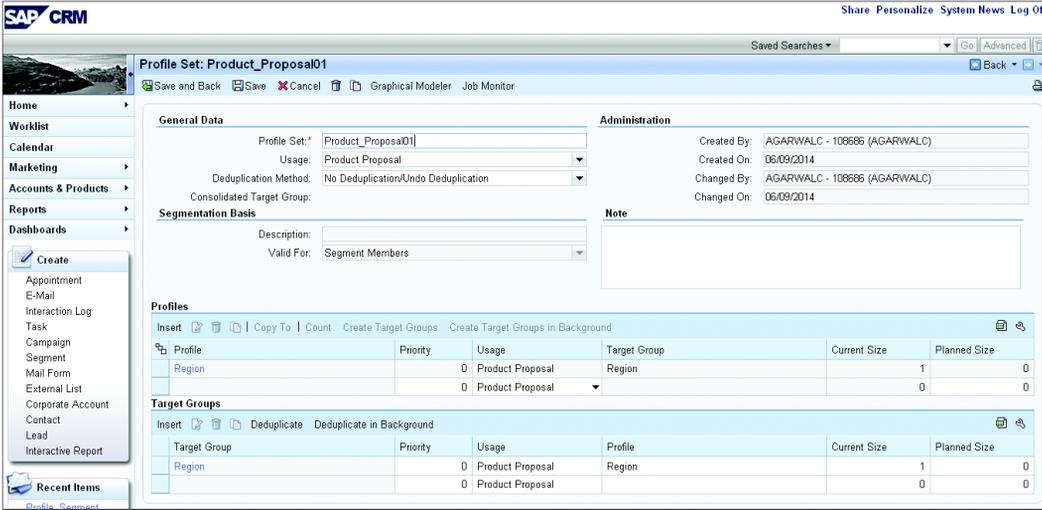


Figure 5.90 Profile Set

[Figure 5.91](#) shows the target group with customer 1004418.

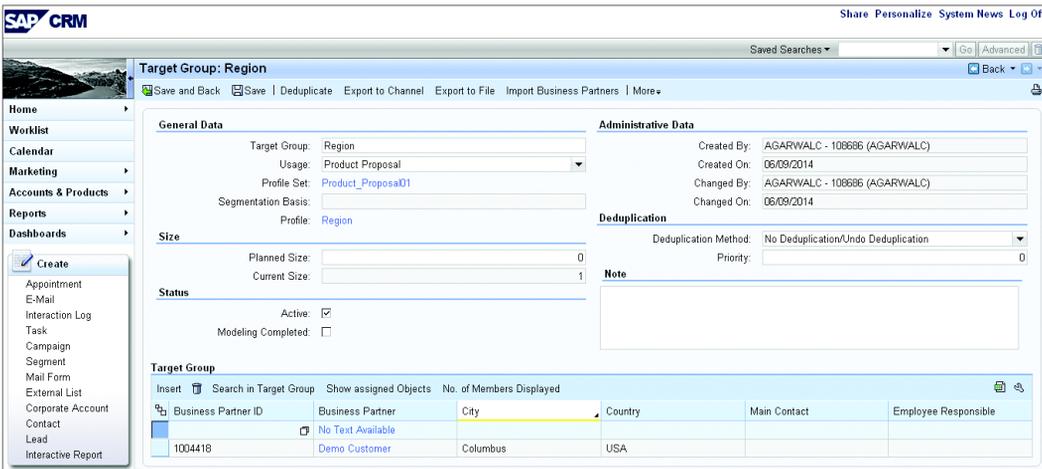


Figure 5.91 Target Group

Create the Cross-Sell Rule

Access the cross-sell rule from the business role **MARKETINGPRO**, and create the cross-sell rule as shown in [Figure 5.92](#). In the **USAGE** field select **TARGET GROUP**, and select **REGION** in the **SEGMENT** field.

Add the leading product (i.e., the product that customer orders and the dependent product used to execute the product proposal to the customer). After you maintain this information, change the **STATUS** of the cross-sell rule to **ACTIVE**.

The screenshot shows the SAP CRM interface for configuring a cross-selling rule. The page title is "Cross-Selling Rule: Z_CROSS_SELL". The "Description" field contains "Z_CROSS_SELL", "Usage" is set to "Target Group", and "Segment" is set to "Region". The "Status" is "Active".

There are two tables: "Leading Products" and "Dependent Products".

Leading Products	
ID	Product
423487	DEMO PRODUCT

Dependent Products		
ID	Product	Sequence
423486	DEMO PRODUCT1	

Figure 5.92 Cross-Sell Rule

Global or Profile

You can use **GLOBAL** or **PROFILE** as the **USAGE** based on your business needs. **GLOBAL** will allow you to execute the product proposal irrespective of the business partner for which you're placing an order. If you choose the target group, the product proposal created will be applicable to only those business partners that fall under that target group. For the rest of the other customers, you can't see any product proposal data.

Create the Sales Order

Now let's create the sales order, as shown in [Figure 5.93](#), and enter the product maintained as a leading product in the cross-sell rule.

Figure 5.93 Create Sales Order

Click the MORE button and select SHOW PRODUCT PROPOSAL from the dropdown menu. You'll see a new screen open in the lower portion of the product where you can see the product proposal from the leading product. Click the ALL or CROSS-SELLING buttons to view the recommended products. You can also see the price and availability based on the configuration if that is required per your business needs (see [Figure 5.94](#)).

Transfer the product from the product proposal to the item order view by selecting the line item in the PRODUCT PROPOSAL view and clicking TRANSFER. If you want to reject the original line and keep the transferred line as a substitute, then you can do so by configuring the system accordingly.

Figure 5.94 Trigger a Product Proposal

Likewise, you can create up-sell, down-sell, and top n product list rules to be shown on the quotation or the sales order. You can use accessories by maintaining the relationship in the product master in SAP CRM, which can then be shown on the product proposal screen. The accessories aren't dependent on any specific business partner.

Use the Marketing Expert Tool

The Marketing Expert tool provides an interface to simulate the product proposal. As you've seen when discussing how to determine the product proposal list on the sales order, you can run the product proposal interface to check the results even before creating the sales order.

You can access the Marketing Expert tool from the SAP menu via **MARKETING • CRMD_MKT_TOOLS - EXPERT TOOLS**. Using the cross-sell example, double-click on **SIMULATION OF PRODUCT PROPOSAL INTERFACE** (see [Figure 5.95](#)).

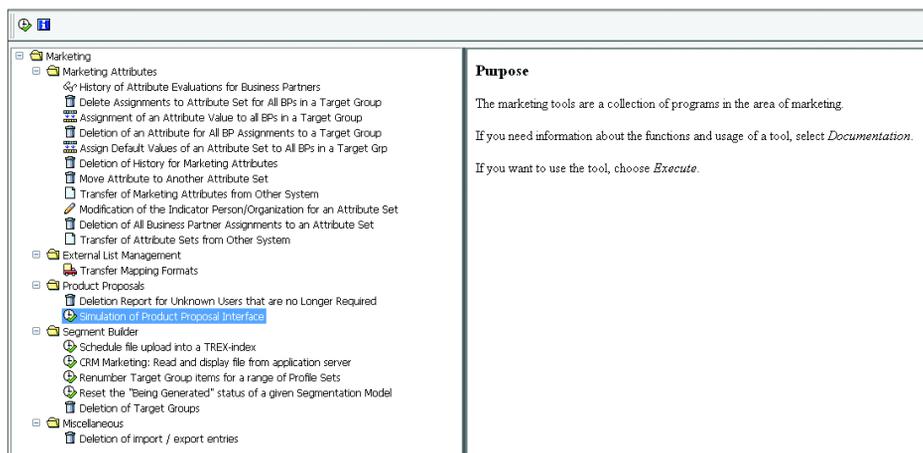


Figure 5.95 Marketing Expert Tool

Enter the **BUSINESS PARTNER ID** and the **PRODUCT IDs** as shown in [Figure 5.96](#). Execute the interface after entering the data.

You'll see the product proposal displayed with the data maintained in the master data for the cross-sell rule. Similarly, you can check the product proposal for any rule and simulate the data to check the product proposal you'll be offering to the customers (see [Figure 5.97](#)).

Selection Criteria

Shop ID: [Dropdown]
 Project Planning GUID: [Text Field]

Business Partner

GUID: 00000000000000000000000000000000
 ID: 1004418

Unknown User

GUID: 00000000000000000000000000000000

Target Grp

GUID: 00000000000000000000000000000000
 Description: [Text Field]

Source Prod.

GUID of Product: 0000000000000000... to 0000000000000000...
 Product IDs: 423487 to [Text Field]

Control Parameter Product Proposal

Method schema: 000006
 Maximum Search Depth: 10
 Maximum Result Depth: 10
 Determine Product ID
 Determine Product Short Txt

Figure 5.96 Product Proposal Simulation Selection Screen

Rules

Result Products /	Description	Origin	Sequence	Rank	Order	Srcr Products /
423486	DEMO PRODUCT1	Cross-Selling			99	423487

Log

T... Message Text...

- Function module CRM_MKTTPR_PP_CS_TG_READ: Started
- Function module CRM_MKTTPR_PP_CS_TG_READ: Ended (runtime: 7794 microseconds)
- Function module CRM_MKTTPR_PP_US_TG_READ: Started
- No up-selling products found
- Function module CRM_MKTTPR_PP_US_TG_READ: Ended (runtime: 1701 microseconds)
- Function module CRM_MKTTPR_PP_ACCESSORIES_READ: Started
- No accessories were found
- Function module CRM_MKTTPR_PP_ACCESSORIES_READ: Ended (runtime: 1281 microseconds)
- Function module CRM_MKTTPR_PP_DOUBLES_DELETE: Started
- Function module CRM_MKTTPR_PP_DOUBLES_DELETE: Ended (runtime: 674 microseconds)
- Product proposal ended (runtime: 12184 microseconds)

Figure 5.97 Product Proposal Interface Output

Maintain the Product Proposal

In this section, we'll look at how to maintain the product proposal before offering the product on a sales order or quotation. Follow these steps:

1. Access the general settings of the product proposal by navigating to **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • PRODUCT PROPOSALS IN QUOTATIONS AND ORDERS • GENERAL SETTINGS FOR PRODUCT PROPOSALS**.
2. You'll then be presented with the **GENERAL SETTINGS FOR PRODUCT PROPOSALS** screen. On this screen, note the following fields (see [Figure 5.98](#)):
 - ▶ **START AVAILABILITY CHECK:** You can set the product proposal configuration to execute the availability check if required. You have the following options:
 - AUTOMATIC
 - ONLY ON REQUEST
 - NO CHECK
 - ▶ **START PRICING:** Similar to the availability check, you can carry out price determination when showing the **PRODUCT PROPOSAL** screen. This can be automatic or on request. You have the following options for carrying out pricing:
 - AUTOMATIC PRICING WITH NET PRICE LIST
 - AUTOMATIC PRICING WITH IPC
 - PRICING ON REQUEST WITH THE NET PRICE LIST
 - PRICING ON REQUEST WITH IPC
 - NO PRICING

General Settings for Product Proposals	
Additional Functions	
Start Availability Check	A Automatic
Start Pricing	B Automatic Pricing with IPC
Display Proposals	
Based on Marketing Projects	A Refine Product Selection Using Pop-up

Figure 5.98 General Settings for Product Proposal

3. Next, define the treatment of the original item for up-selling/down-selling by navigating to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • PRODUCT PROPOSALS IN QUOTATIONS AND ORDERS • DEFINE TREATMENT OF ORIGINAL ITEMS FOR UP-/DOWN-SELLING. You can add the cancellation reason code for the original line item if you want to cancel the line when transferring the products from the PRODUCT PROPOSAL screen (see [Figure 5.99](#)).

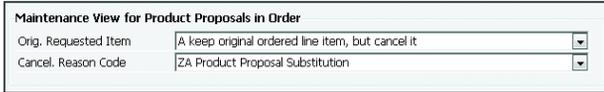


Figure 5.99 Treatment of the Original Item for the Product Proposal

Method Schemas for Product Proposals

To activate the functionality on the sales order or quotation, it's important to maintain the *method schema* for the product proposal and assign it to the transaction type (see [Figure 5.100](#)).

Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • PRODUCT PROPOSALS IN QUOTATIONS AND ORDERS • METHOD SCHEMAS FOR PRODUCT PROPOSALS • DEFINE METHOD SCHEMA (BASIC).

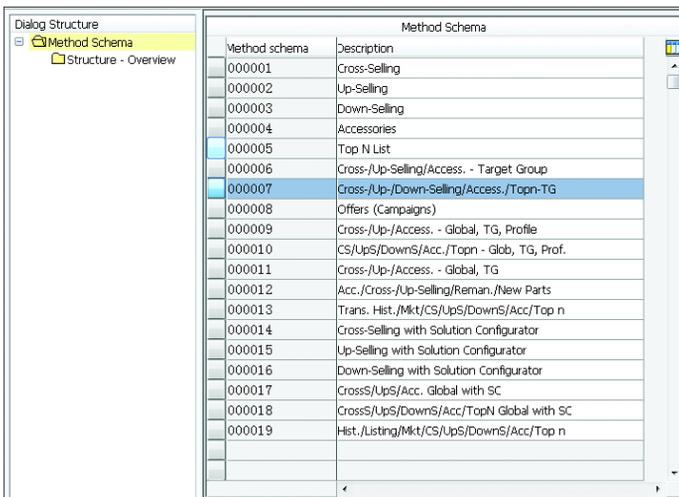


Figure 5.100 Method Schema

You can assign various product proposal types to the appropriate usage indicators (see [Figure 5.101](#)):

- ▶ **GLOBAL**
This allows you to show the product proposal to all the business partners for which the sales orders are created.
- ▶ **TARGET GRP**
This allows you to show the product proposal to all the business partners within the target group for which the sales orders are created.
- ▶ **PROFILE**
In this case, the product proposal will be specific to the marketing profile.



Figure 5.101 Method Schema Structure – Overview

In this step, you assign the method schema to the transaction type, which also consists of the SALES ORG. ID field. Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • PRODUCT PROPOSALS IN QUOTATIONS AND ORDERS • METHOD SCHEMAS FOR PRODUCT PROPOSALS • ASSIGN METHOD SCHEMA TO TRANSACTION TYPE.

On the screen, note the following options (see [Figure 5.102](#)):

- ▶ **PRODUCT PROPOSAL ON REQUEST**
If you select this checkbox, the PRODUCT PROPOSAL screen won't show the list of the products until you click the ALL button or any specific product proposal rule. If this isn't checked, the product proposal will show up automatically.

► PAST ORDERS ON REQUEST

Similar to PRODUCT PROPOSAL ON REQUEST, this option indicates whether items proposed based on past orders should be displayed immediately or on request.

► PRODUCT LISTING ON REQUEST

This indicates whether item proposals based on product listings should be displayed immediately or on request.

The screenshot shows a SAP configuration window titled 'New Entries'. It contains the following fields and options:

- Sales Org. ID: 0 00004002
- Transaction Type: TA
- Product Proposal Assignment for CRM Transaction Types**
 - Method schema: 000007 (dropdown)
 - Description: Cross-/Up-/Down-Selling/Access./Topn-TG
 - Product Proposal on Request
 - Past Orders on Request
 - Product Listing on Request
 - Listing Proc.: [empty text box]
 - Exclusion Proc.: [empty text box]
 - High Priority
 - Price List Type: [empty text box]

Figure 5.102 Assign Method Schema to the Transaction Type

Customize Past Orders

The past orders filter enables you to display the list of products from a customer's past orders. The next two sections provide information on some configuration settings that can be made for past orders.

Define Transaction Filter

The *transaction filter* is configured to specify the list of the transaction type and the item object type that is queried to bring the list of the products from past orders on the PRODUCT PROPOSAL screen. In other words, only those products that are in the transaction listed in the transaction filter will be shown as the product proposal.

Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • PRODUCT PROPOSALS IN QUOTATIONS AND ORDERS • PAST ORDERS • DEFINE TRANSACTION FILTER (see [Figure 5.103](#)).

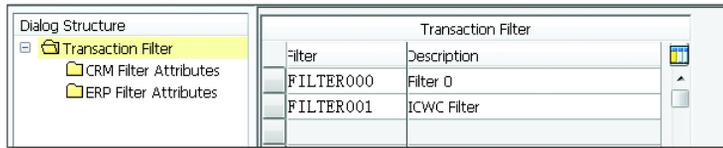


Figure 5.103 Transaction Filter

Figure 5.104 shows the CRM FILTER ATTRIBUTES that includes the TRANSACTION TYPE and the ITEM OBJECT TYPE for activating the past order items to show on the product proposal.

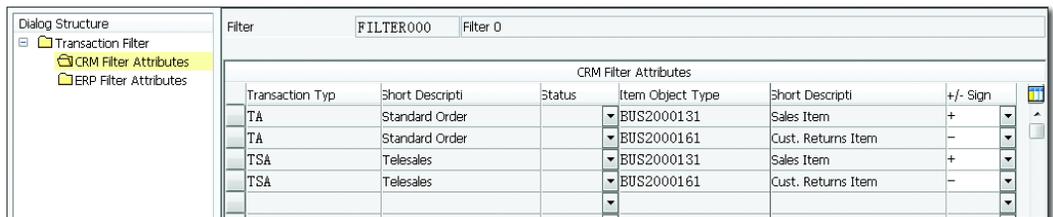


Figure 5.104 CRM Filter Attributes

You can also specify the STATUS of the sales orders that you want to see the past order products from based on your business needs. The +/- SIGN column is used to calculate the quantities for the products listed on the PRODUCT PROPOSAL screen. Generally, for sales orders, use the + sign to add the quantities for the product on all past orders.

Define Past Orders Display

The DEFINE PAST ORDER DISPLAY screen enables you to define the period for which the past orders should show the products as a part of the product proposal functionality. This is shown in Figure 5.105 with a time period of 10 weeks.

To customize the past order display, navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • PRODUCT PROPOSALS IN QUOTATIONS AND ORDERS • PAST ORDERS • DEFINE PAST ORDERS DISPLAY.

Define Past Orders Display

Past Order Selection

Filter: FILTER000 Filter 0

Time Period: 10 WEEK

No. of Transactions:

Proposed Quantity Column

Proposed Quantity: AVGE Average Value Of Past Order Quantities

No. of Transactions: 10

Display Proposals

Based on Past Orders: A Refine Product Selection Using Pop-up

Figure 5.105 Define Past Orders Display

This section discussed how you can propose certain products to customers while placing sales orders or quotations. We've covered different types of product proposals and how you can make use of them in your day-to-day business decisions.

5.7 Summary

Marketing is a core SAP CRM module that is widely used by organizations to run their marketing functions via SAP CRM. This chapter includes information on marketing plans and campaigns, segmentation, creating target groups, External List Management, Lead Management, Loyalty Management, and product proposals. In the next chapter, we'll look at SAP CRM Sales.

SAP CRM Sales allows a company to track its business interactions, follow up on potential leads and opportunities, and perform sales transactions with customers. In this chapter, we'll look at the various functions in SAP CRM Sales that makes this possible.

6 Sales

A sale, in itself, is self-explanatory—it's the process of selling goods and pushing the revenue through to logistics and invoicing. The sales functions within SAP CRM Sales allow a business to carry out the selling of products or goods to a customer and log them as sales transactions. To understand how SAP CRM Sales performs and manages these many functions, we must first look at the sales process itself.

The *SAP CRM closed loop cycle* describes the sales cycle from start to finish. SAP CRM Sales has different applications to register sales from customers, for example, the Interaction Center (IC), mobile applications, phone numbers, and e-selling. [Figure 6.1](#) illustrates the SAP CRM closed loop cycle.

The SAP CRM close loop cycle begins with the marketing functions (i.e., creating leads and qualifying whether those leads are hot, warm, or cold). After the leads are qualified as hot leads, they are pushed to a sales representative to log an opportunity for that customer. Entering the Opportunity Management step in the sales cycle, the organization seeks an agreement with the customer, which, once met, leads to a sales contract.

After the contracts are created, orders are placed for the customer based on the customer's needs within the sales cycle. This is then followed by the delivery and transportation of the product, and finally invoicing the customer. Within the SAP CRM closed loop cycle, it's also important to have customer support and customer retention process steps in place.

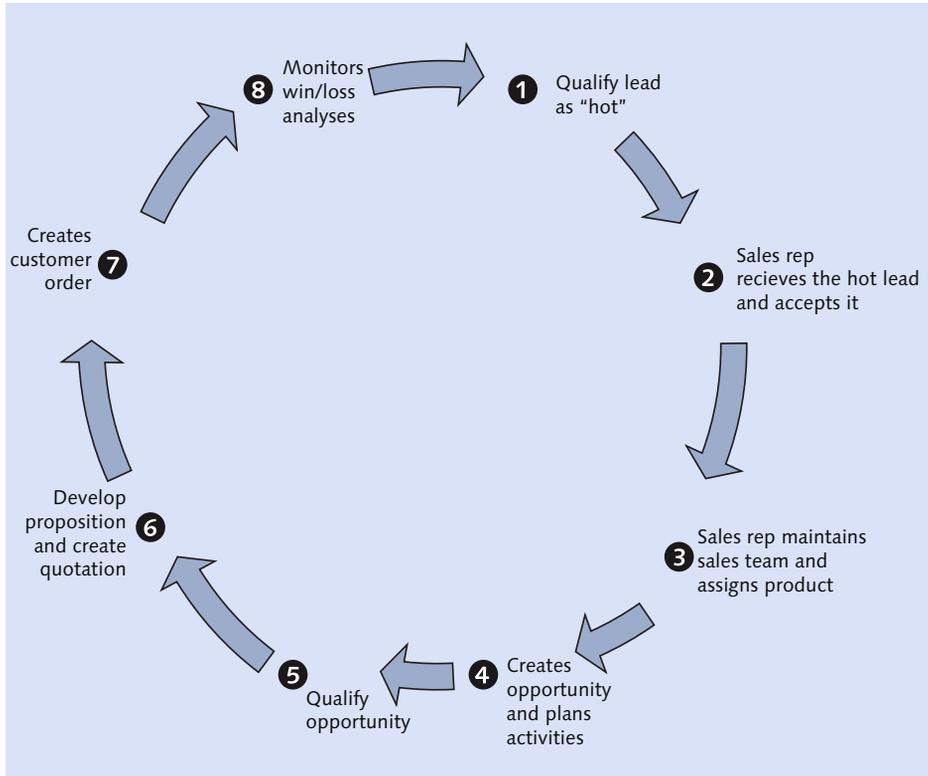


Figure 6.1 Sales Close Loop Cycle

The sales cycle for SAP CRM Sales has the following basic functions: Activity Management, Opportunity Management, contracts management, quotations, and Sales Order Management. In this chapter, we'll discuss each of these functions in depth, along with their configuration steps.

6.1 Activity Management

Activity Management is an integral part of the SAP CRM Sales cycle. Any interaction with a customer can be logged as an *activity*. While an activity is most often between internal employees and customers, a *task* is for internal employees. Activities can be created as a follow-up transaction to any business transaction within the sales cycle.

The following are the different types of activities:

▶ **Appointments**

Appointments are activities that correspond to customer meetings. Any interaction with the customer should be logged in as an activity. Appointments are categorized by date and can sync to Microsoft Outlook if the groupware adapter is set up appropriately.

▶ **Interaction logs**

Interaction logs are activities that are used to log any communication with the customer. More commonly, interaction logs are used when there is a customer visit or telephone call. Interaction logs can be categorized as customer visit, telephone call, or other.

▶ **Tasks**

A task is a type of activity that is used when working within an organization for internal employees only. Tasks can either be private or public. A typical example of a task is a follow-up item for employees to finish to fulfill a customer's needs.

▶ **Emails**

Email corresponds to creating and sending emails as a part of Activity Management. You can integrate email with Microsoft Outlook based on your business requirements. The email activity transaction types are incoming and outgoing email with the category email.

In the sections that follow, we'll look at activity processing within SAP CRM Sales and the configuration steps involved in creating and customizing an activity.

6.1.1 Activity Processing

Activity processing helps an organization capture the information and interactions between internal employees and customers. The information stored in the activity is an important source of data about the day-to-day interactions with customers.

When creating any activity types, information must be entered in the activity header. Account/contacts, descriptions of an activity, date and time, category, importance, and status will be defaulted based on the configuration. The Web-Client UI views are different for appointments, interaction logs, tasks, and emails (see [Figure 6.2](#)).

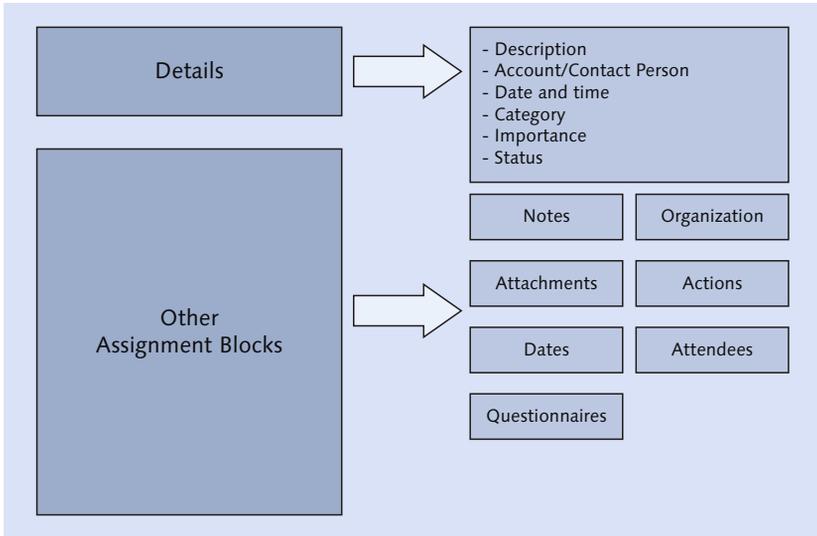


Figure 6.2 Activity Structures

Figure 6.3 shows an example of interaction log details in the WebClient UI view with different field attributes.

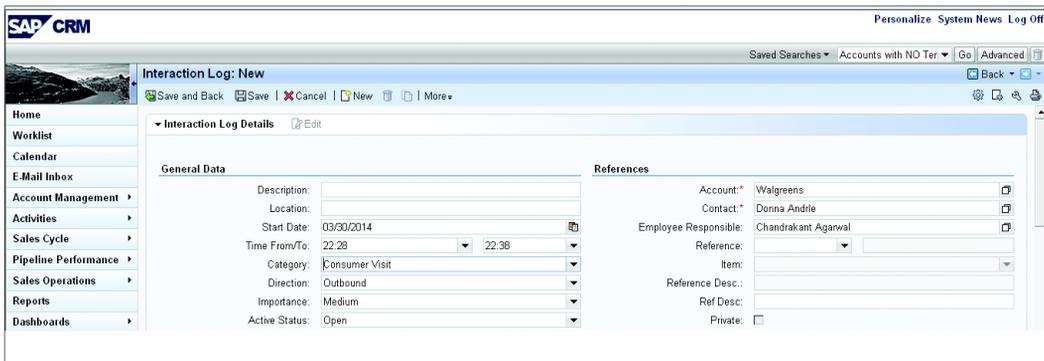


Figure 6.3 Interaction Log Detail View

Besides these general details, other assignment blocks are provided for the following information:

► **Attendees**

Attendees are the partners within an activity transaction. Partners include the activity partner (sold-to party), contact person, employee responsible,

responsible group, and so on. You can configure these partners by navigating to **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • PARTNER PROCESSING**.

Partner Processing

The configuration steps for partner processing are already covered in [Chapter 4](#).

► Notes

Notes are text that is captured in the activity when communicating with the customer. It can be customer-specific or an employee's internal notes. You can configure the text types based on your business requirements.

You can define other text types and the sequence in which they should appear in Customizing for SAP CRM by choosing **BASIC FUNCTIONS • TEXT MANAGEMENT • DEFINE TEXT OBJECTS AND TEXT TYPES**.

► Questionnaire

A questionnaire is used to guide the sales or customer service representative through a specific set of questions if applicable for the customer. It can also be used to conduct a survey with a list of questions and answers. This helps internal employees be more methodical in their approach toward customers based on the questionnaire information.

You can carry out the questionnaire settings for Customizing in SAP CRM by choosing **TRANSACTIONS • SETTINGS FOR ACTIVITIES • QUESTIONNAIRES • DEFINE QUESTIONNAIRES**.

► Attachment

You can attach any files to an activity if required.

► Actions

You can configure the actions in an activity based on your business requirements. For example, if you want to send an email on activity information to a specific partner in an activity, you can configure the action and assign it to the activity transaction type. You can define actions in Customizing for SAP CRM by choosing **BASIC FUNCTIONS • ACTION • ACTIONS IN TRANSACTION • CHANGE ACTIONS AND CONDITIONS • DEFINE ACTION PROFILES AND ACTIONS**.

► Dates

Similar to actions, you can define the date types based on your business requirements in an activity. For example, if you want to create a new date type

for any face-to-face conversation with a customer and capture that time on the activity, then you can configure the date profile and assign it to the activity transaction type.

► **Object relationship**

You can reference different objects to an activity while creating an activity for a specific customer. This helps you access different objects from the activity and also gives you clarity on the referenced object. A referenced object can be an individual object or sales agreement. The OBJECT RELATIONSHIP is shown under the RELATIONSHIP tab and is only activated if the object relationship profile is assigned to the activity type. You can display the reference transaction or the object from the activity if you've configured the object relationship profile in the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR ACTIVITIES • DEFINE OBJECT RELATIONSHIP PROFILE.

► **Organization**

Organization determination on an activity transaction happens like any other transactions. You can determine the organization based on your business needs and configured it in the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • ORGANIZATIONAL MANAGEMENT • ORGANIZATIONAL DATA DETERMINATION.

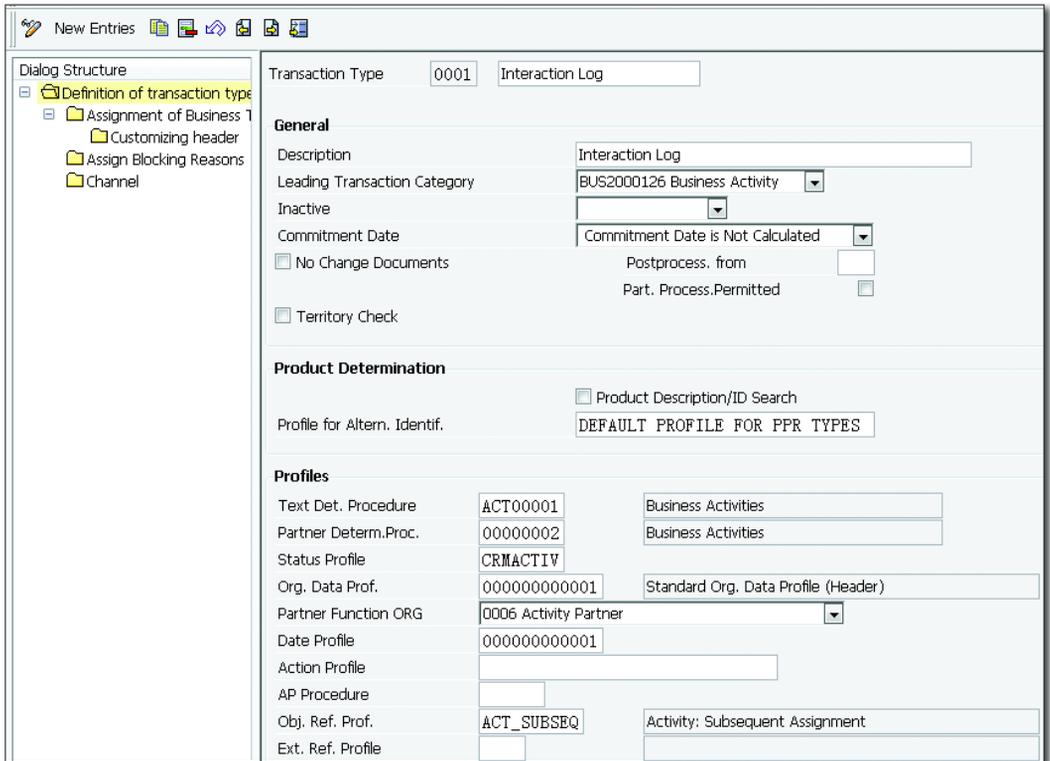
6.1.2 Creating and Customizing Activities

In this section, we'll discuss the steps needed to create and configure an activity.

Creating Activities

To demonstrate the process of creating activities, let's use an example of an interaction log activity (see [Figure 6.4](#)). This activity type is configured via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES.

As shown in [Figure 6.4](#), the TRANSACTION TYPE configuration on the DEFINITION OF TRANSACTION TYPES screen is similar for all transaction types. However, the assignment of the business transaction categories is different and can have different assignments from one transaction type to another.



Dialog Structure

- Definition of transaction type
 - Assignment of Business Transaction Categories
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Transaction Type: 0001 Interaction Log

General

Description: Interaction Log

Leading Transaction Category: BUS2000126 Business Activity

Inactive:

Commitment Date: Commitment Date is Not Calculated

No Change Documents Postprocess. from:

Territory Check Part. Process.Permitted:

Product Determination

Product Description/ID Search

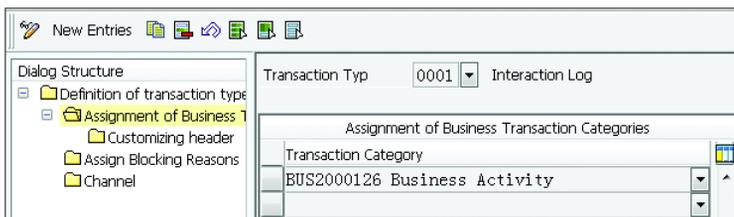
Profile for Altern. Identif.: DEFAULT PROFILE FOR PPR TYPES

Profiles

Text Det. Procedure	ACT00001	Business Activities
Partner Determ.Proc.	00000002	Business Activities
Status Profile	CRMACTIV	
Org. Data Prof.	000000000001	Standard Org. Data Profile (Header)
Partner Function ORG	0006 Activity Partner	
Date Profile	000000000001	
Action Profile		
AP Procedure		
Obj. Ref. Prof.	ACT_SUBSEQ	Activity: Subsequent Assignment
Ext. Ref. Profile		

Figure 6.4 Definition of Transaction Type Activity

In this case, the leading TRANSACTION CATEGORY is BUS2000126 BUSINESS ACTIVITY (see Figure 6.5).



Dialog Structure

- Definition of transaction type
 - Assignment of Business Transaction Categories
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Transaction Typ: 0001 Interaction Log

Assignment of Business Transaction Categories

Transaction Category	BUS2000126 Business Activity
----------------------	------------------------------

Figure 6.5 Business Transaction Category – Business Activity

Different business transaction categories have different screens and functionalities to configure on the Customizing header screen. Figure 6.6 shows the configuration of the activity header, which controls the data being populated on the

activity type while the activities are created. Certain functionality on the activity is driven based on how the system is configured to achieve specific business needs.

Figure 6.6 Activity Header

The following fields/checkboxes are found on this screen (see [Figure 6.6](#)):

- ▶ **CATEGORY**
The category within an activity is referred to as a communication type and creates a specific grouping for any activity type. A category is assigned to an activity class, for example, appointments, interaction log, task, or email.
- ▶ **CALENDAR**
If this checkbox is selected, then you can allow the other employee responsible to view the activity in his calendar.
- ▶ **PRIVATE APPOINTMENTS ALLOWED**
This setting makes the task private and won't allow any other responsible party view the task.
- ▶ **PRIORITY**
Priority defines the importance of an activity and can be very high, high, medium, and low.
- ▶ **GOAL**
A goal explains the purpose of the creating the activity. The purpose of the activity can be anything based on the business requirement, but most common

examples are order completion, arouse interest, make appointment, better customer retention, reconcile procedure, and so on.

▶ **DIRECTION**

A direction can be inbound or outbound for an activity based on the communication with the customers.

▶ **SUBJECT PROFILE**

The **SUBJECT PROFILE** drives the reason for the activity and the status for the reason, that is, the result of a specific activity. You assign the appropriate subject profile to the transaction type, and the subject profile configuration is carried out via the configuration path, **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR ACTIVITIES • DEFINE ACTIVITY REASONS**.

Customizing Activities

To better illustrate the different customization options available in Activity Management, let's consider a business scenario where a sales representative wants be notified if a sales order is rejected for any specific business reason. Because the sales representative is assigned to the account, he should remain informed about situations like these so that he can get back to the customer regarding any complaints.

This scenario can be achieved in the system by creating the activity as soon as the order is rejected and notifying the sales representative. The activity can be populated as "order rejected" for customer privacy purposes.

The following are steps to configure the system to achieve this type of business scenario:

1. Configure the action to create the activity when the order is being rejected by navigating to **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • CHANGE ACTIONS AND CONDITIONS • DEFINE ACTION PROFILES AND ACTIONS**. Then, create the action definition for the action profile that is already assigned to the sales order. In this case, the action profile is **ORDER_MESSAGES** (see [Figure 6.7](#)).
2. Assign the processing type **METHOD CALL** to the **METHOD COPY_DOCUMENT**, as shown in [Figure 6.8](#).

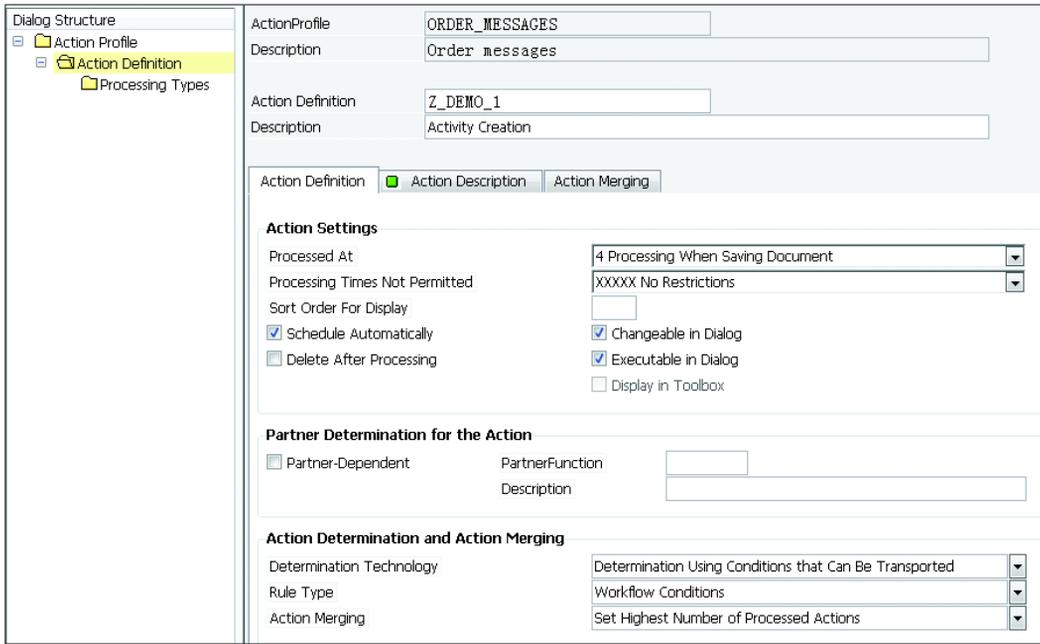


Figure 6.7 Action Definition Z_DEMO_1 – Activity Creation

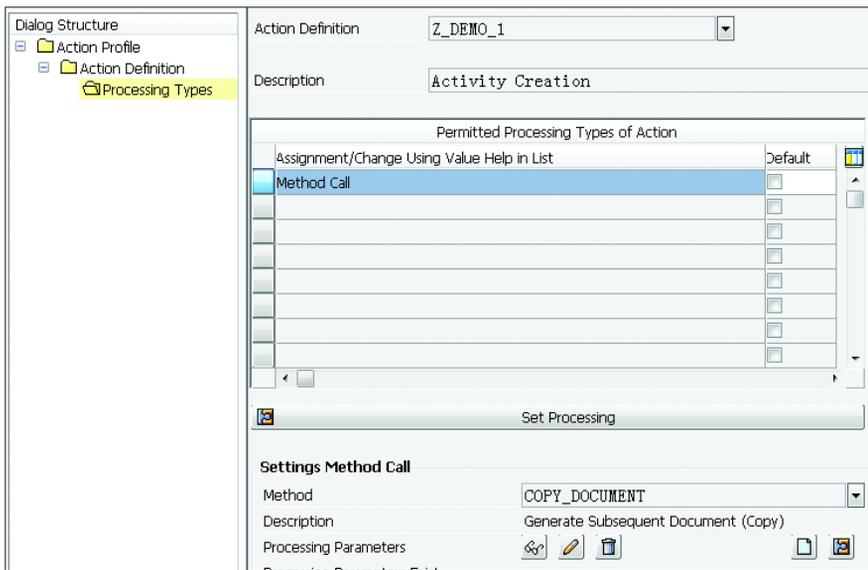


Figure 6.8 Processing Type Definition

- Assign the processing parameters by clicking EDIT on the method call on the popup page to add the activity type that needs to be created after the sales order is rejected. As shown in [Figure 6.9](#), the ELEMENT is PROCESS_TYPE, and the TYPE NAME is CRMT_PROCESS_TYPE under the ABAP DICT. DATA TYPE radio button.

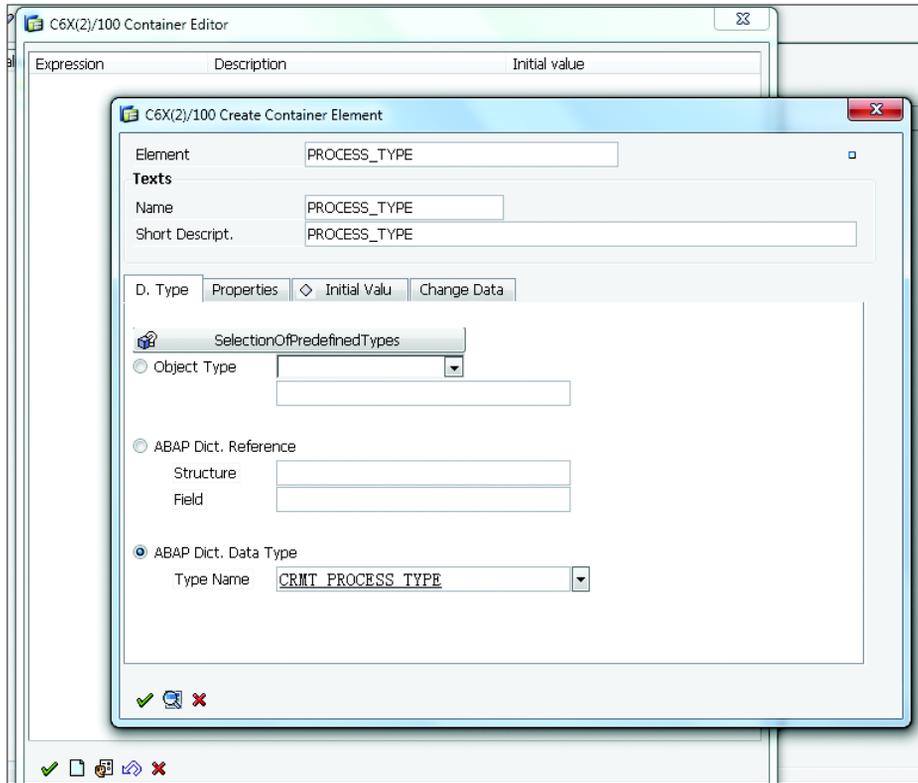


Figure 6.9 Defining the Container Element

- In the INITIAL VALUE tab, you need to assign the transaction type of the activity (see [Figure 6.10](#)). In this example, we're looking at the interaction log, which has the customer visit category.

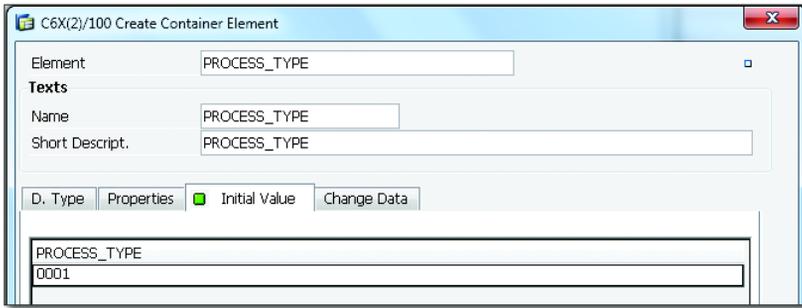


Figure 6.10 Defining the Process Type within the Container Element

5. Next, create the schedule conditions and start conditions to trigger the sales order rejection action (see [Figure 6.11](#)). Navigate to **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • ACTIONS • ACTIONS IN TRANSACTION • CHANGE ACTIONS AND CONDITIONS • DEFINE CONDITIONS**. The condition is configured for “If the System Status is Rejected I1032,” which triggers the action.

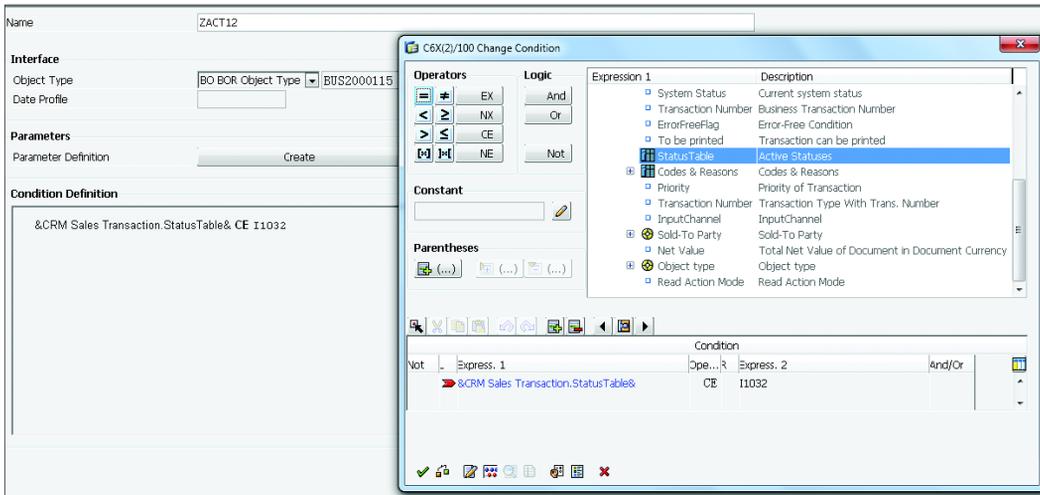


Figure 6.11 Schedule and Start Condition

6. Configure the activity with a partner determination procedure to notify the sales representative of the rejected order. In addition, you must assign the

correct access to the activity based on the sold-to relationship between the customer and the sales representative (see [Figure 6.12](#)).

Figure 6.12 Partner Function Configuration for Sales Representative

7. Configure the subject profile to include the REASON as REJECTED BY CUSTOMER PRIVATE REASON.
8. After the configuration is performed, create the order and allow the customer to call customer service to reject the order if, for any reason, the customer isn't satisfied with the service. [Figure 6.13](#) shows the sales order created but not rejected.

Item	Avail...	Item...	Product ID	Part...	Description	Qty	Unit	Crcy	Item...	Req. Delv...	Confirmed Deliver...	Delivery G...	Last Confirmed...	Qty availab...	Net...
10		423487			DEMO PRODUCT	12.000	SQ	USD	Sale...	04/30/2014	05/17/2014	05/17/2014	05/17/2014	0.000	0.000

Figure 6.13 Sales Order Created

No action is triggered because the order isn't yet rejected ([Figure 6.14](#)).



Figure 6.14 Blank Action Assignment Block

As soon as the order is rejected and saved, the action is generated for the interaction log activity, as shown in [Figure 6.15](#).

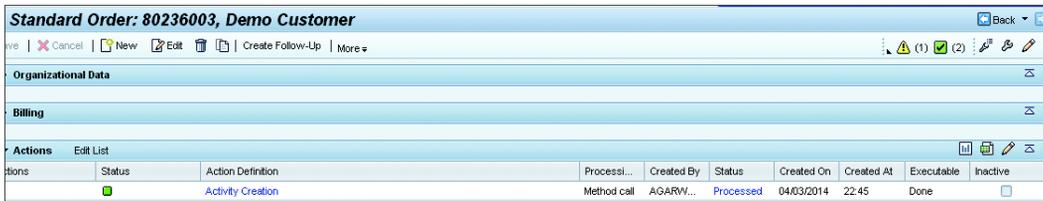


Figure 6.15 Action Generated for the Activity Transaction Type

The activity is created and referenced with the sales order that was rejected ([Figure 6.16](#)). The activity consists of the sales representative who should be notified for the sales order rejection. You can also trigger an email to the sales representative by configuring one more action on the activity transaction type if required.

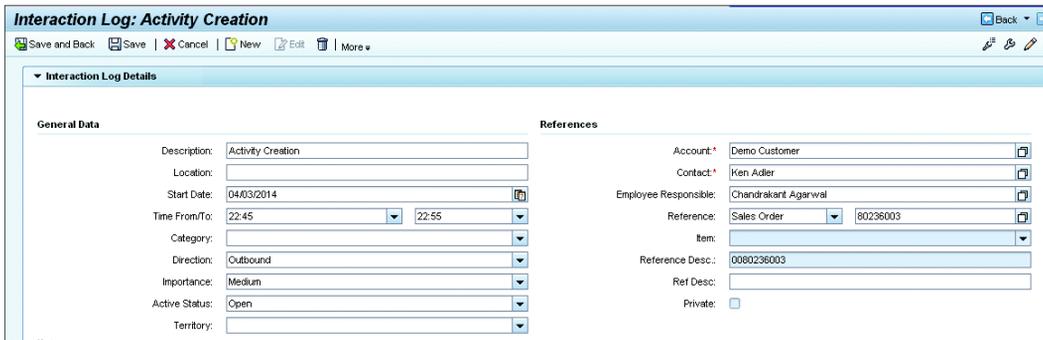


Figure 6.16 Activity Type: Interaction Log

This section on Activity Management covered three aspects of the activity fundamentals: Activity Management concepts, configuration, and example usage in a specific business scenario. In the next topic, we'll discuss Opportunity Management and its usage.

6.2 Opportunity Management

The sales cycle in SAP CRM starts with *Opportunity Management* and ends with the sales order's creation or rejection. An *opportunity* is defined as a business prospect that allows you to sell a product based on a customer's interest. For example, if the customer shows interest in your product during any trade show or any sales promotion, that interest is characterized as the opportunity to conduct business with the customer.

You can also create leads before creating an opportunity for any chance of the product being sold. However, the sales cycle really starts with the opportunity, where you forecast certain products to be sold with a specific price value. Sales processes can be monitored and evaluated more efficiently with the use of Opportunity Management. An opportunity is more useful longer sales cycles and higher priced products.

Customers are targeted based on marketing functions to identify leads (see [Chapter 4](#)). As described in the introduction, after a lead is created and qualified as a hot lead, it can be converted into a sales opportunity. The sales representative informs the sales team to target the opportunity and assigns the product or product categories.

The sales representative plans the sales cycle within the opportunity and lists the activities that needs to be carried for each phase of the opportunity. The sales representative then develops a value proposition for the opportunity.

After the opportunity has gone through all of phases of the sales cycle, and the opportunity is achieved, the sales representative creates the quotation. The forecast data within the opportunity is sent to the SAP BusinessObjects BI/SAP Business Warehouse (SAP BW) system for planning purposes. The quotation is finally converted into a sales order to realize the product being sold to the customer.

An opportunity serves as a central hub within the sales cycle that connects activities, quotations, orders, and contracts. Leads are marketing functions that can be

converted into an opportunity. Based on your business requirements, you may not need leads or opportunities to be implemented in the sales cycle. In that case, you'll start from a quotation or contract and end at sales order creation or rejection.

In this section, we'll look at the business functions that can be performed within Opportunity Management as well as the configuration steps and business cases.

6.2.1 Business Functions

An opportunity provides a framework for the sales cycle and helps a company keep track of its sales progress. An opportunity describes the sales prospects, their requested products and services, their budget, the potential sales volume, and an estimated sales probability. This information becomes concrete in the course of the sales cycle and can be displayed and evaluated in the system.

The following are some of the business functions found in Opportunity Management:

▶ **Partner**

Sales teams, sales representatives, and customers are considered partners under the PARTIES INVOLVED tab. Partners can be internal or external partners.

▶ **Products**

Products can be added to the opportunity.

▶ **Organization data determination**

Organization data determination happens based on the organization profile attached to the opportunity transaction.

▶ **Sales cycle**

A sales cycle consists of the start and end date with various stages that will depend on the company's requirement. It consists of the probability of achieving an opportunity based on the opportunity sales stages advancement. You can view various sales stages in the SALES ASSISTANT tab.

▶ **Sales team**

Sales teams are employees that are part of the opportunity. They can be found under the SALES TEAM tab.

▶ **Competitor**

You can also add a competitor to an opportunity that you're working on. This will allow you to see other organizations also bidding for the same opportunity.

► **Notes**

Notes can be added to an opportunity like any other SAP CRM transaction. You need to assign the text procedure to an opportunity based on your business requirement.

► **Attachment**

You can attach the files to an opportunity and send the attachment to the customer if necessary as a part of the confirmation process.

► **Relationships**

Relationships are transactions, such as subopportunities, leads, activities, and projects, that can be linked to an opportunity as a part of the relationship. These can be viewed under the RELATIONSHIP tab.

► **Status for reason**

Status for reason is used in the sales cycle. You can define reasons for different statuses on an opportunity. For example, if the opportunity is lost, you want to document the reason for losing it. This can be anything from pricing, quality, or more.

► **Forecast data**

Forecast data consists of expected sales volume, expected total value, prospect budget, and relevant forecast data. The information in this section of the opportunity is a feed into the pipeline analysis and sales volume forecast to the SAP BusinessObjects BI/SAP BW system.

Sales Methodology

Any organization following a structured sales methodology has an edge over other organizations because they can plan the opportunity and target customer needs effectively. This leads to an optimum quality of the sales process, which has a major influence on success.

The sales methodology consists of the following parts:

- Sales assistant
- Project goals
- Buying center
- Competitor analysis
- Opportunity assessment
- Opportunity plan

6.2.2 Configuring Opportunity Management

Now that we've gone through the various business functions in Opportunity Management, we'll now look at the different configurations and customizations that can be made. The first step is to define the transaction type.

Define the Transaction Type

The following is an example of a standard or default opportunity (opportunity type: OPPT) configuration that shows the transaction type details and the business transaction categories assigned to it. The opportunity transaction type definition shown in [Figure 6.17](#) is similar to any other business transaction in SAP CRM. Here, you assign the leading business transaction as a BUS2000111 OPPORTUNITY with additional configurations for the product determination, profiles, and number range assignment.

General	
Description	Opportunity Default
Leading Transaction Category	BUS2000111 Opportunity
Status Object Type	
Inactive	
Commitment Date	Commitment Date is Not Calculated
<input type="checkbox"/> No Change Documents	Postprocess. from
	Part. Process. Permitted
<input type="checkbox"/> Territory Check	
Product Determination	
<input type="checkbox"/> Enter GTIN	
<input type="checkbox"/> Enter Partner Product	
<input type="checkbox"/> Create Product Order Number	
<input type="checkbox"/> Always Check Product ID	<input type="checkbox"/> Product Description/ID Search
Profile for Altern. Identif.	
Profiles	
Text Det. Procedure	OPP00001
Partner Determ. Proc.	00000004
Status Profile	CRMOPPOR
Org. Data Prof.	000000000005
Partner Function ORG	0006 Activity Partner
Date Profile	
Action Profile	OPPORTUNITY
AP Procedure	
Obj. Ref. Prof.	OPP_SUBSEQ

Figure 6.17 Definition of Transaction Type OPPT

We've already covered the product determination and configuring profiles on business transactions in [Chapter 3](#).

Next, we'll look at how to configure the object relationship profile.

Object Relationship Profile

The *object relationship profile* helps create a relationship between an opportunity and any other transaction. For example, let's say that you've already created an opportunity, and you want to link this opportunity to one of the subopportunities that was created separately. You can use the subsequent assignment functions in the WebClient UI to link these two transactions. You can configure the object relationship profile via the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR OPPORTUNITIES • DEFINE OBJECT RELATIONSHIP PROFILE.

As shown in [Figure 6.18](#), the TRANSACTION CATEGORY OPPORTUNITY and SALES are assigned to the TRANSACTION TYPE OPPT OPPORTUNITY DEFAULT.

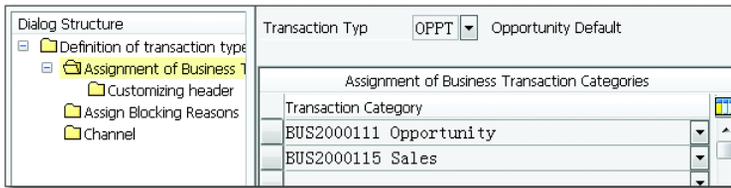


Figure 6.18 Assignment of Business Transaction Categories

Opportunity Header Configuration

After you've assigned the opportunity to another business transaction, you'll want to edit the opportunity header for the default opportunity. You can do this by clicking the CUSTOMIZING HEADER folder in the dialog structure.

As shown in [Figure 6.19](#), the opportunity header has the following configurable fields:

- ▶ SALES CYCLE

If there is any possibility of getting sales from a given prospect, opportunity is realized at that point. The sales cycle consist of sales stages with probability defined at each stages. You can assign the sales cycle to the sales stages via the

configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR OPPORTUNITIES • ASSIGN SALES STAGES TO SALES CYCLES.

► **OPPORTUNITY GROUP**

You can classify different opportunities into one group for analyses purposes. Typical examples are new customers, existing customers, strategic projects, and so on. You can configure the OPPORTUNITY GROUP based on your business needs via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR OPPORTUNITIES • DEFINE OPPORTUNITY GROUP, PRIORITY AND ORIGIN • DEFINE OPPORTUNITY GROUP.

► **DESIGN REGISTRATION**

This is used when you're working on a high-tech business scenario that uses the design registration concepts.

► **DOCUMENT PROCEDURE**

The DOCUMENT PROCEDURE is used to determine the pricing on the opportunity document.

► **ASSESSMENT**

An assessment is a questionnaire that can be used to assess the opportunity and can be built based on your business requirements.

The screenshot displays the 'Opportunity Default' configuration dialog in SAP SPRO. On the left, a 'Dialog Structure' tree shows the navigation path: Definition of transaction type > Assignment of Business 1 > Customizing header > Assign Blocking Reasons > Channel. The main area is titled 'TransactionType: OPPT Opportunity Default' and is organized into several sections:

- General:** Sales Cycle (1 General Opportunity), Opportunity Group (dropdown), Design Registration (checkbox).
- Pricing Data:** Document Procedure (B Plants Abroad).
- Sales Methodology:** Assessment (dropdown), Texts: Competitors (OPSMCP01 Opportunity Competitor), Texts: BC Partners (OPSMBC01 Opportunity Project Partner).
- SEM Planning:** Planning Profile (text field).
- Competitor:** Mode (dropdown).

Figure 6.19 Opportunity Default Header Customization

▶ **PLANNING PROFILE**

The **PLANNING PROFILE** is used to store the profile that is then used as navigation information in the SAP Strategic Enterprise Management (SAP SEM) system.

▶ **MODE**

You can define competitors at the header or item level based on the configurations mentioned here.

Item Category Configuration

You can add items to an opportunity and have different controls at the item level versus at the header or transaction type level. When configuring an opportunity, an item category is no different from any other transaction type in SAP CRM.

You can configure the item category profiles (text determination, partner determination, status profile, organization data profile, action profile, etc.) based on your business needs. The configuration logic and steps are already covered in [Chapter 3](#). The object type for the opportunity item category should be BUS2000130 CRM Opportunity Item.

[Figure 6.20](#) shows the item customization for an opportunity that allows you to configure whether the item should be price-relevant or not and whether the **PRIC. INDICAT.** (price indicator) should be set to **ACTIVE**.

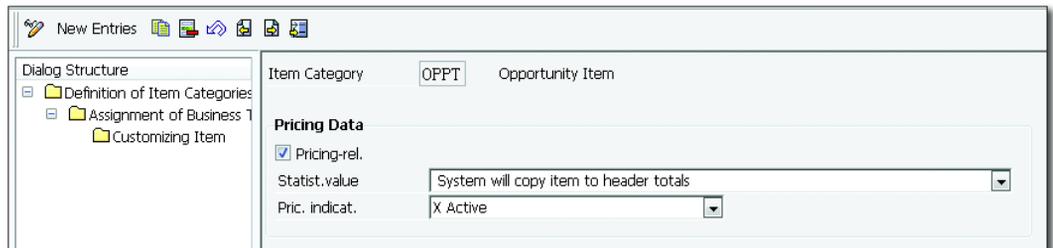


Figure 6.20 Customizing Item

Turning an Opportunity into a Quotation

After all the configurations are done, and your opportunity turned out to be successful, you'll want to create the opportunity into a quotation. To create the SAP ERP quotation from SAP CRM Opportunity Management, you need to execute the *cross system copy control* settings in SAP CRM as stated via the configuration,

SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR OPPORTUNITIES • CROSS-SYSTEM COPY CONTROL FOR OPPORTUNITY AND SAP-ERP QUOTATION • CROSS-SYSTEM COPYING OF TRANSACTION TYPES.

This is applicable for both the transaction type and item category.

Business Scenario

Let's consider a business scenario that uses a hierarchical opportunity used by companies with multiple divisions. Big companies want to capture one opportunity as a master opportunity under the primary division and have the rest of the opportunities, referred to as subopportunities, link to the master opportunity.

Let's say in the given example that one opportunity with one leading division means that one division (leading) is offered to the customer by submitting products/solutions/services from other divisions. For example, Division AD is offering to End-Customer Sales Prospect S1 a whole package that includes Division AA, AB, and AC products/solutions/services.

Division AD creates a master opportunity with the total amount of \$6 million that is offered to Sales Prospect S1. Division AD also mentions the Division AA, AB, and AC employees who should work on this opportunity as well. As a result:

- ▶ Division AA creates the subopportunity with the amount that is offered to the internal customer Division AD.
- ▶ Division AB creates the subopportunity with the amount that is offered to the internal customer Division AD.
- ▶ Division AC creates the subopportunity with the amount that is offered to the internal customer Division AD.

Figure 6.21 is a diagram of the business scenario just mentioned.

Based on your business needs, you can effectively manage the sales cycle and increase the customer retention, which leads to greater customer satisfaction and more sales.

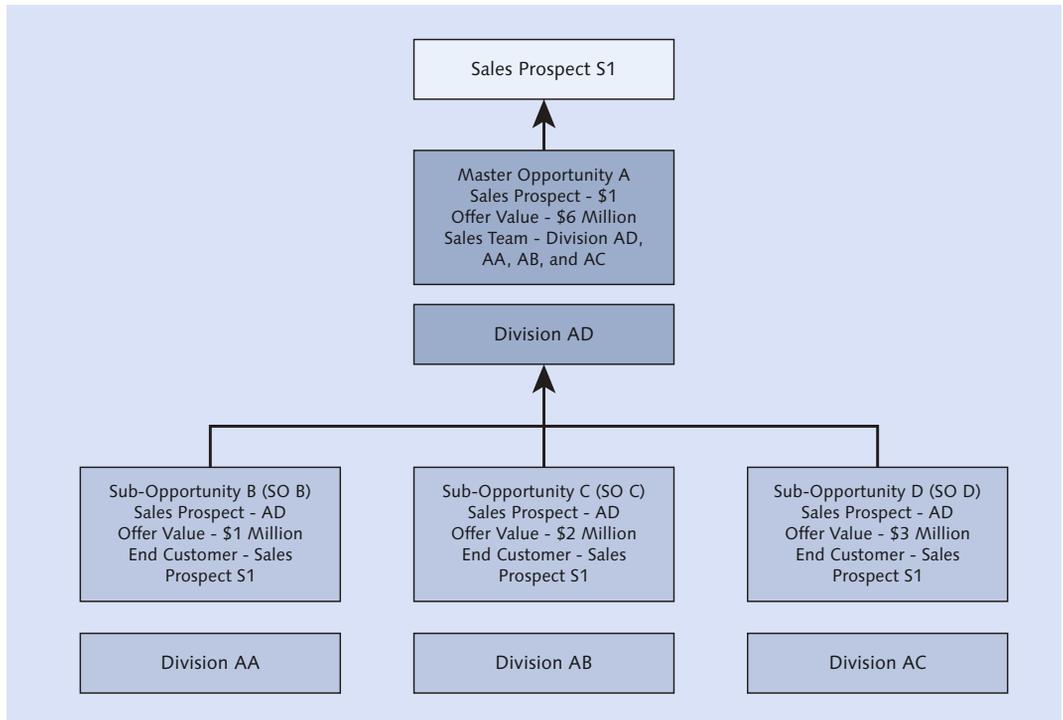


Figure 6.21 Hierarchical Opportunity

6.3 Sales Contracts

A *sales contract* in SAP CRM is an agreement to sell a product to a customer with a specific rate or discount based on the quantity or value for a specific period of time. After the contract validity period has expired, the contract is no longer in use to sell the product for the contracted price.

Contract management improves customer loyalty and retention by offering lower prices. The contract management cycle is shown in [Figure 6.22](#).

Contract management in the sales cycle starts with the sales representative winning an opportunity. After the opportunity is won, the customer negotiates the terms and conditions for buying the products. To cement the terms and conditions with the customer, the sales representative creates a contract and marks up discounts and adds certain conditions to the contract.

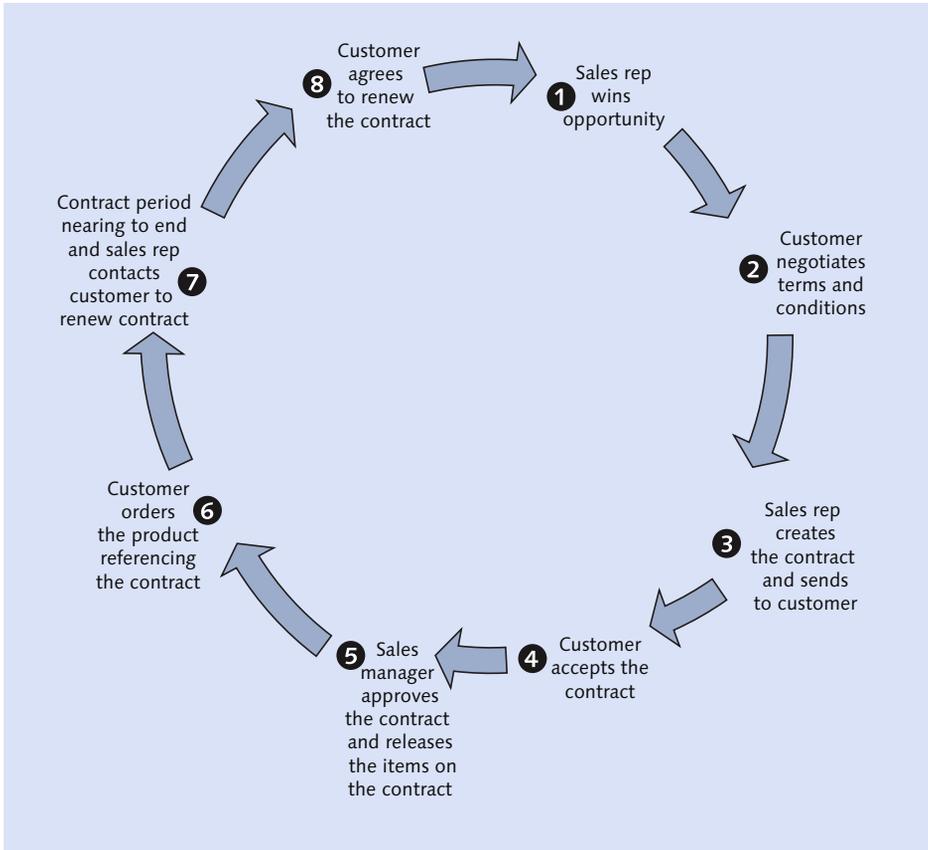


Figure 6.22 Contract Management in SAP CRM

After the price conditions and delivery terms are negotiated between the customer and sales representative, the customer accepts the contract. This information is sent to the sales manager to release the contract. The sales manager reviews the contract conditions and releases the contract. At this stage, the customer is now ready to order the product against the contract at regular intervals for the specified period of time based on the contract validity period.

As the contract is nearing the expiration date, the sales representative is notified so that he can connect with the customer again to renew the contract.

6.3.1 Business Functions

Contract management has various functions that you can implement based on your business needs. The sales contract structure is similar to any other sales transaction in SAP CRM in that it contains both header and item data. The header data is configured based on the transaction type, and the item data is configured based on the item category.

There are two types of contracts in SAP CRM:

► **Quantity contract**

This is an agreement that the customer will buy a certain quantity of the product for a certain validity period. The transaction type for quantity contract is QCTR.

► **Value contract**

This is an agreement that the customer will buy a certain value of product for a certain validity period. The transaction type for value contract is VCTR.

The following sections look at the various functions found in contract management.

Price Agreements

A *price agreement* is consent between a customer and an organization pertaining to a specific price for a specific product. These are condition records that are assigned to a contract as a part of the price agreements. The prerequisite to maintain a price agreement is the condition maintenance technique, which is assigned as a condition group to the item category or the contract transaction type.

Maintaining Price Agreements

SAP recommends maintaining the price agreements at the item level only. This helps during contract determination by providing a popup for multiple contracts when creating a sales order for one specific item. The header price agreement in the contract document is applied to the header condition price in the sales order.

You can configure price agreements via the configuration path, SPRO • CRM • TRANSACTION • SETTINGS FOR CONTRACT • PRICE AGREEMENTS AND CONFIGURATION.

Actions

Actions can be configured in contracts to better service the customer and take proactive steps when contracts are nearing their expiration date. You can assign an action profile to the contract transaction type or to the item category based on what your business needs.

Releasable Products

Releasable products are the products entered at the item level within a contract. You can enter the product number or the product category on the contract transaction. These products are assigned with condition types and special pricing assigned to them. These are then released to create the release order.

Authorized Partner

An *authorized partner* can be used to determine the contract in the sales order when multiple parties are involved. For example, if there are multiple sold-to parties that should be authorized to release the contract, and the determination of the contract on the sales order should be based on these, then the authorized partner configuration should be activated. You can also enter one or more group hierarchies in the contract. When you create a sales order for one of the business partners in the hierarchy, the system determines the relevant contracts.

You need to configure the authorized partner check in the sales order transaction type to activate the SEARCH AUTH. PARTNER functionality, as shown in [Figure 6.23](#). You can choose A, B, or C based on your business needs.

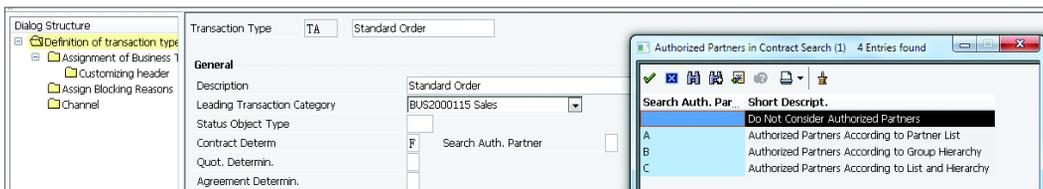


Figure 6.23 Authorized Partners in Contract Search

Appropriate authorized partners should be set as the sold-to parties in the sales contract to make use of this functionality.

Cancellation

You can configure *cancellation rules* and *cancellation reasons* for the contracts being created in SAP CRM. You can set up a functionality based on your business needs to notify and cancel the contract by a specific partner function if required. You create the cancellation rule and assign it to the cancellation procedure. The *cancellation procedure* is assigned to the contract transaction type. When the cancellation is complete, the contract transaction and release orders can't be created further after the contract is set to complete. Use the following configuration path to set up the cancellation procedure: SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR CONTRACTS • CANCELLATION.

Dates in Business Transaction

Dates in the contracts are important because they control the validity period of the contract. You can configure date management within the sales contract to define the contract duration (e.g., if the contract term is six months, and the contract end date is today's date plus six months). To configure date management, assign date profile to the contract transaction type and the contract item category via the menu path, SPRO • CRM • BASIC FUNCTIONS • DATE MANAGEMENT • DEFINE DATE PROFILE.

Completion Rules

You can configure the completion rules based on your business needs. The item category configuration drives the behavior for the contract completion based on the specific business scenario. There are four options available at the item category level:

- ▶ TARGET/QUANTITY VALUE CAN BE EXCEEDED
- ▶ A – TARGET/QUANTITY VALUE CANNOT BE EXCEEDED
- ▶ B – TARGET/QUANTITY VALUE CAN BE EXCEEDED ONLY ONCE
- ▶ C – SPLIT RELEASE ITEM WHEN THE TARGET QUANTITY IS EXCEEDED

Figure 6.24 shows the item category with the COMPLETION field.

The screenshot shows a configuration dialog for Item Category 'QCTR' (Quantity Contract). The dialog is divided into three main sections: Billing Data/Credit, Pricing Data, and Contract Data. The 'Billing Data/Credit' section includes fields for Bill. Relevance (Not Relevant for Billing), MilestoneBilling (No Specific Calculation Type), Int. Billing (External), Credit Group, and Valuatn Profile. The 'Pricing Data' section includes a checked 'Pricing-rel.' checkbox, Statist. Value (X No cumulation - Values cannot be used statistically), Pricing Indicat. (X Active), and Pricing Process (Standard). The 'Contract Data' section includes a Completion field set to 'Target/quantity value can be exceeded'.

Section	Field Name	Value
Billing Data/Credit	Item Category	QCTR
	Quantity Contract	Quantity Contract
	Bill. Relevance	Not Relevant for Billing
	MilestoneBilling	No Specific Calculation Type
	Int. Billing	External
Pricing Data	Credit Group	
	Valuatn Profile	
	<input checked="" type="checkbox"/> Pricing-rel.	
	Statist. Value	X No cumulation - Values cannot be used statistically
Contract Data	Pricing Indicat.	X Active
	Pricing Process	Standard
	Completion	Target/quantity value can be exceeded

Figure 6.24 Item Category Contract Data – Completion Field

6.3.2 Configuring Sales Contracts

In this section, we'll use an example to display the configuration steps for a typical sales contract in SAP CRM.

Define the Transaction Type

In our example, the quantity contract (contract transaction type: ZQCT) configuration shows the transaction type details and the business transaction categories assigned to it.

The contract TRANSACTION TYPE shown in [Figure 6.25](#) is similar to other business transactions in SAP CRM. Here, you assign the leading business transaction as a BUS2000121 SALES CONTRACT and configure the product determination, profiles, and number range assignment.

The QUANTITY/VALUE CONTRACT field specifies whether the contract is a quantity contract, value contract, or quantity and value contract. Because the example here is a quantity contract, the setting is A.

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Transaction Type: ZCTR Quantity Contract

General

Description: Quantity Contract

Leading Transaction Category: BUS2000121 Sales Contract

Quantity/Value Contract: A

Status Object Type: []

Inactive: []

Commitment Date: Commitment Date is Not Calculated

No Change Documents Postprocess. from: []

Territory Check Part. Process.Permitted:

Product Determination

Enter GTIN

Enter Partner Product

Create Product Order Number

Always Check Product ID Product Description/ID Search

Profile for Altern. Identif.: []

Product Substitution Proced.: []

Figure 6.25 Definition of Transaction Type: Quantity Contract

Price Agreement Configuration

The price agreement is a core function in the sales contract configuration because it determines the contract price on the release order. For this function to work, you need to assign the price agreement condition types to the sales contract. To assign the condition type as a price agreement to the sales contract, you need to assign the condition group to the contract transaction type. [Figure 6.26](#) shows the CONDITION GROUP ZMAINTGRP assigned to the sales contract. This enables you to add the condition types on the sales contracts within the PRICE AGREEMENT tab.

You still need to create the condition tables, access sequences, and condition types to make the appropriate assignments. After the condition type is set up, create the pricing procedure, and assign this condition type to the contract pricing procedure. After the pricing activities are done, assign these condition types to the condition techniques to form the basis for the condition group. You can configure the condition maintenance group in the configuration path, SPRO • CRM • TRANSACTION • SETTINGS FOR CONTRACT • PRICE AGREEMENTS AND CONFIGURATION.

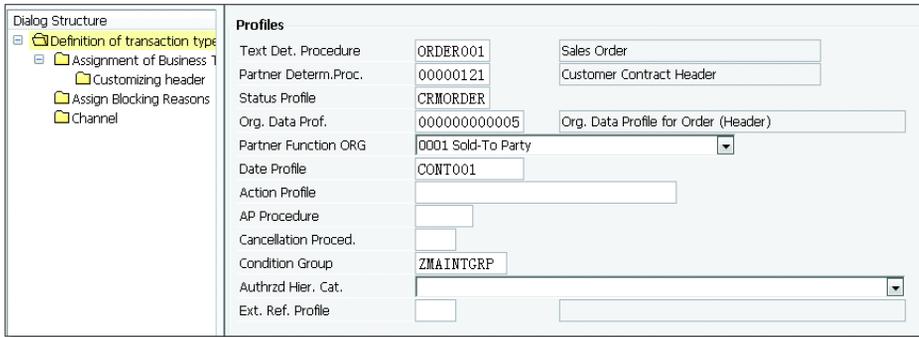


Figure 6.26 Contract Transaction Profiles

Only a limited number of business transaction categories are assigned to the sales contract transaction type; in this case, it's BUS2000115 SALES and BUS2000121 SALES CONTRACT (see Figure 6.27).

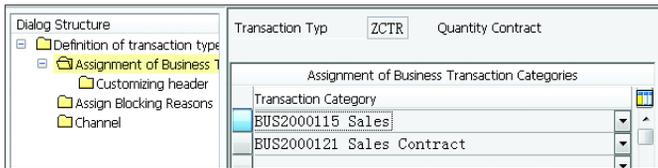


Figure 6.27 Business Transaction Categories

Figure 6.28 shows the business transaction category sales details, which consist of configuration around credit check data, pricing data, and payment data.

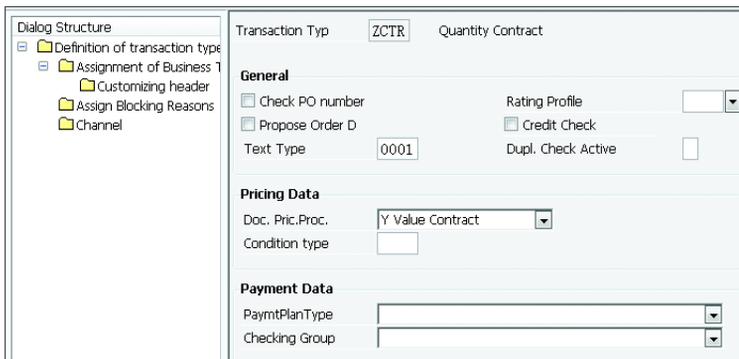


Figure 6.28 Customizing Sales Header

Contract Determination

To determine the contracts on the sales order, you also need to activate the CONTRACT DETERMINATION field in the sales order transaction type configuration. There are three options: NO CONTRACT DETERMINATION, E-ONLY AT ITEM LEVEL: ASSIGN IMMEDIATELY IF UNIQUE, AND F-ONLY AT ITEM LEVEL: ALWAYS WITH SELECTION OPTION. This flag isn't at the item category level and is only at the transaction level.

Item Category Configuration

When you add items to the contract transactions, you can have different controls at the item level versus at the header level. This relates to the profiles such as the date profile, action profile, partner determination procedure, and more. You can configure the item category profiles based on your business needs. The configuration logic and steps are already covered in [Chapter 3](#).

The object type for the contract item category should be BUS2000135 CRM Quantity/Value Contract Item. The most relevant data for the contract item category is the pricing and contract data (i.e., contract completion). [Figure 6.29](#) shows the BILLING DATA/CREDIT, PRICING DATA, and CONTRACT DATA sections.

Section	Field	Value
Billing Data/Credit	Item Category	QCTR Quantity Contract
	Bill. Relevance	Not Relevant for Billing
	MilestoneBilling	No Specific Calculation Type
	Int. Billing	External
	Credit Group	
Pricing Data	Valuatn Profile	
	<input checked="" type="checkbox"/> Pricing-rel.	
	Statist. Value	X No cumulation - Values cannot be used statistically
	Pricing Indicat.	X Active
Contract Data	Pricing Process	Standard
	Completion	Target/quantity value can be exceeded

Figure 6.29 Item Category Configuration

You'll need to activate the pricing, as shown in [Figure 6.29](#), under PRICING DATA and mark the completion settings based on your business scenario, that is, whether you want to exceed the quantity or not when creating the release order.

In general, Available to Promise (ATP) isn't activated at the contract document level because a business won't hold stocks while the contracts are being created. But, if there are any business scenarios that require the ATP check to trigger at the contract document, then you need to activate it at the item category.

Copy Control Header and Item

To determine the contracts on the sales order, you'll need to configure the copy controls at the header and item level. [Figure 6.30](#) shows the copy control setting at the transaction type, which can be configured based on your business needs via SPRO • CRM • TRANSACTIONS • BASIC SETTINGS • COPYING CONTROL FOR BUSINESS TRANSACTIONS • DEFINE COPYING CONTROL FOR TRANSACTION TYPES.

The screenshot shows the 'Transaction Type Copy Control' configuration screen. At the top, 'Source trans.' is set to 'ZCTR' and 'Quantity Contract' is selected. 'Tgt Trans. Type' is set to 'ZSRR' and 'Sales Order' is selected. Below this, there are two sections: 'General control' and 'Detailed data'. Under 'General control', there are checkboxes for 'Copy item number', 'Complete reference', 'Explosive Template Hierarchy', and 'Copy Price Agreements' (which is checked). There is also a dropdown menu for 'Copying routine'. Under 'Detailed data', there is a sub-section 'Sales' with a checkbox for 'Copy PO data'.

Figure 6.30 Transaction Type Copy Control

The following fields are found on this screen (see [Figure 6.30](#)):

- ▶ **COPY ITEM NUMBER**
This copies the item number from the sales contract to the sales order item. If this checkbox isn't selected, the item number is determined automatically in the sales order based on the numbering configuration.
- ▶ **COMPLETE REFERENCE**
This copies the entire transaction information from the source to the target transaction.

▶ **COPYING ROUTINE**

This is the field where you can assign the copy control BAdI implementation to achieve your specific business scenario during data copy from sales contract to the sales order. This setting is at the document level.

▶ **COPY PRICE AGREEMENTS**

This is checked when you want to copy the price agreement condition type from the sales contract to the sales order at the header level.

▶ **EXPLODE TEMPLATE HIERARCHY**

This option specifies whether the existing template hierarchies are to be expanded when they are copied.

▶ **COPY PO DATA**

The PO data is copied from the sales contract to the sales order when this checkbox is activated. The purchase order number and purchase order date are copied from the sales contract to the sales order.

The item category copy control is configured via the configuration path, SPRO • CRM • TRANSACTIONS • BASIC SETTINGS • COPYING CONTROL FOR BUSINESS TRANSACTIONS • DEFINE COPYING CONTROL FOR ITEM CATEGORIES. The following are some of the settings found there (see [Figure 6.31](#)):

▶ **COPYING ROUTINE**

This field is where you can assign the copy control BAdI implementation to achieve your specific business scenario during data copy from the sales contract to the sales order. This setting is at the item level, meaning the item data copied can be altered based on this routine.

▶ **COPY CONDITIONS**

If you're adding the condition type in the pricing procedure of the sales contracts when creating the sales contract, and you want to copy this condition to the sales order, then set this to C, D, or G based on your specific scenario. You can choose not to copy the condition as one of the options.

▶ **COPY CONFIGURATION**

This specifies whether the configured products are copied to, or newly determined in, the follow-up transaction.

▶ **FIX**

This dictates whether the configuration can be changed in the target transaction.

► **GENERATE PRODUCT MASTER DATA AGAIN**

If you set this indicator, all product master attributes are regenerated again in the target transaction. For example, the price reference material or units of measurement (UoM) is copied from the contracts transaction if this indicator isn't checked; otherwise, the price reference material or sales UoM will be picked up from the product master data instead of the contracts in the target transaction.

► **PRICE AGREEMENTS**

This should be checked when you want to copy the price agreement condition type from the sales contract to the sales order at the item level.

► **COPY SURVEY**

This specifies whether a survey that is linked to the source transaction should be copied into the target transaction.

Source Item Cat. QCTR
Target item cat. TAN

Copy Item Categories - General Control Data

Description Sales Item
Copying routine
Copy conditions Do not copy conditions
 Reexplode Structure/Free goods
Copy Configuration
 Fix
 Copy PO data
 Generate prod.master data again
CondCopier Type
 Price Agreements
 Copy Survey
Copy Campaigns

Figure 6.31 Item Category Copy Control

Business Scenarios

Let's look at a business example to better understand the sales contracts configuration cycle. In our business scenario, the furniture manufacturing Company FM1 has negotiated a price with Customer C1, who is a prime customer and a distributor of the furniture in the East Coast of the United States. Because the distributor has multiple warehouses categorized as ship-to parties, the distributor wants to set up the quantity contract price at the ship-to and material level. For this reason,

FM1 wants to set up the contract for a validity period of one year and creates a price agreement at the ship-to and material level.

To achieve the preceding business scenario, the following steps need to be taken to create the contract and configure it based on the customer's needs:

1. Configure the contract transaction type.
2. Configure the contract item category.
3. Maintain the copy control setting from the contract transaction to the sales order and from the contract item category to the sales order item category
4. Create a condition table at the ship-to and material level, and assign the table to the access sequence.
5. Create the condition type and assign the access sequence that consists of the table with ship-to and material fields.
6. Maintain the pricing procedure with the condition type assigned to it.
7. Maintain the price determination procedure for the contracts.
8. Maintain the same condition type that is added to the contract pricing procedure into the sales order pricing procedure.
9. Add this condition type to the maintenance condition technique (condition and condition technique).
10. Create the contract, and assign the price agreement.

[Figure 6.32](#) and [Figure 6.33](#) show the quantity contract created for a validity period of one year, with price agreements at the ship-to and material level at \$22 USD per UoM (SQ).

Actions	Item No.	Product ID	Description	Target Quantity	Target UoM	Release Quantity	Release UoM	Status
	10	423487	DEMO PRODUCT	100.000	SQ	0.000	SQ	Released

Figure 6.32 Quantity Contract

Quantity Contract Item: 10, DEMO PRODUCT, 423487

Back | New | Release Item | Print Preview

Dates Edit List

Date Type	Date	Time	Duration	Time Unit
Date of Canc. Receipt				
Contract Start Date	01/27/2014	00:00		
Cancellation Request				
Contract End Date	01/27/2015	00:00		
Cancellation Date				
Contract Validity Period	12 Month			

Price Agreements New Edit List

Actions	Status	Scale	Condition Type	Ship-To	Product ID	Amount	Crcy	Price Unit	Product Unit	Valid From	Valid To
	<input checked="" type="checkbox"/>	Not Available	Shipto/Material	3184219	423487	22.00	USD		1 SQ	01/27/2014	12/31/9999

Figure 6.33 Price Agreement Assigned with Ship-To and Product ID

The sales order is created with the same ship-to and material assigned in the sales contract price agreement. The popup for the contract appears, and it is selected to apply the contract price. Figure 6.34 and Figure 6.35 show the screenshot of the sales order created and the contract price applied.

Sales Order: 80235769, Demo Customer

Save | Cancel | New | Create Follow-Up | Trigger Output | More+

Pricing Date: 01/27/2014 Gross Value: 0.00 USD

Notes

Items Edit List

Actions	Item No.	Product ID	D	Qty	Unit	Net Value	Crcy	Delivery Status	Rejection Reason
	10	423487		0	12.000 SQ	264.00	USD	Not delivered	

Figure 6.34 Sales Order Created and Contract Linked to It

Back | New | Print Preview

Notes

Shipping

Shipping Transactions

Price Details

Actions	St...	Price Element	Price	Unit	Price Unit	UoM	End Value	Curre...	Price Element ID	Manually...	Statistical	Calculat. Type
	<input checked="" type="checkbox"/>	Contract Price	22.00	USD	1	SQ	264.00	USD	ZPRO	<input type="checkbox"/>	<input type="checkbox"/>	C
	<input checked="" type="checkbox"/>	Gross Value	22.00	USD	1	SQ	264.00	USD		<input type="checkbox"/>	<input type="checkbox"/>	C

Figure 6.35 Contract Price Applied to the Sales Order at Ship-To and Material Level

Similar to our previous example, you can have some scenarios where the sales contract's price agreements need to be set up at various levels (e.g., material, multiple ship-to parties, payer level, payer, shipping condition level, etc.). Based on the business scenario, you need to configure the condition tables and configure the condition techniques to drive the price agreements at different levels as mentioned in the example.

Contracts can also be used in the distributor claims and rebate processing. In a business scenario, if you want to do sales tracing to the distributor stock and track the dollar amount that is sold from the distributor to the end customer, you can use the distributor claims and rebate processing functionality. You can learn more about chargeback claims at SAP Help. Search for "Chargebacks and Distributor Rebates" on SAP Help and select the "Chargebacks & Distributor Rebates (SAP Library – Contract Management for Life Sciences)" in the results. Chargeback claim management in SAP CRM (document type: CBCD) functions like as so:

- ▶ Master data is set up (contract prices are loaded into the contract using contract type MC – Master Contract or CMIC – Individual Contract). This is where you set up the contracts to sell the product to the distributor. The prices set up in the contracts are used to compare with the claims receipt by the distributor.
- ▶ The claim (document type: CBCD) is received by the distributor.
- ▶ Validation (document type: CBCD) occurs in the claim document to compare the price from the contracts to the claims receipt.
- ▶ The claim (document type: CBCD) amount is then calculated.
- ▶ The credit memo/debit memo (credit memo request document type CMRC or debit memo request document type CMDM in SAP CRM) is created in SAP CRM.
- ▶ Payment (credit memo/debit memo creation in SAP ERP) is received by the distributor.
- ▶ The reconciliation report is run.

Contract management is categorized into quantity and value contracts. Based on your business needs, you can implement any of the contract functions discussed in this section.

6.3.3 Data Exchange

If the sales contracts are created in an SAP ERP system and the contract determination on the sales order occurs in an SAP CRM system, then the sales contracts are replicated from SAP ERP to SAP CRM.

You can run the initial load with the adapter object name SALES CONTRACT to load the contracts from SAP ERP to SAP CRM. After the initial load is carried out, the delta change to the sales contract flows automatically to the SAP CRM system. The following are prerequisites to loading the sales contract from SAP ERP to SAP CRM:

- ▶ The same contract type and item categories should exist in both systems.
- ▶ The copy control setting is set up the same way between the sales contract and sales order in both systems.
- ▶ Number ranges should be correctly defined in both systems.
- ▶ The same customer and product master data exist in both systems.
- ▶ The same organizational data must exist in both systems.

Uploading SAP CRM Contracts to SAP ERP

You can't upload SAP CRM contracts to the SAP ERP system. SAP has provided program CRM_CONTRACT_UPDATE_FROM_R3 in SAP CRM to download the contract from SAP ERP to SAP CRM and sync the information, that is, update released quantity/value and update missing document flow if any of the contracts are missing with this information in SAP CRM.

6.4 Quotations

A *quotation* is an agreement between a customer and an organization that is often referred to as a legally binding document for a specific product at a specific price and for a specified period of time. A quotation is a document that is marked with the item system status as a quotation. After the quotation is converted into a sales order, the system status of the quotation is changed to QUOTATION ACCEPTED.

Quotations are converted into sales orders, or they can be copied to create another quote. You can also create quotations from opportunities. In this section, we'll look at the different business functions and configurations that can be performed with quotations in SAP CRM.

6.4.1 Business Functions

Quotation functions are similar to sales orders with respect to their transaction structure and configuration. In addition, the transaction structure of the quotation consists of a header and an item like most of the SAP CRM transactions.

The following are some important quotation functions in SAP CRM:

▶ **Sales probability**

Sales probability refers to the probability of the sales order being created from the quotation. This information comes from the quotation item category. The success rate of the product can be entered manually in the quotation.

▶ **Validity**

A quotation has a validity period that can be configured via date management in SAP CRM. The validity period of a quotation states the period for which you can refer the quotation to create the sales order. You can configure the date profile and assign it to the quotation transaction type based on your business scenario.

▶ **Status**

Like any other transaction, a quotation has the system and user status at the header and item level. You configure the status profile and assign it to the transaction type and item category. Whenever the quotation is created, the line item system status is marked as QUOTATION. The system status then changes to QUOTATION ACCEPTED as soon as the quote is converted into a sales order. This is an exception in quotation versus any other transaction, and this is an out-of-the-box functionality.

▶ **Actions**

You can configure the action and assign it to the quotation transaction type for releasing the quote. According to your business scenarios, you can release a quote based on the dollar amount and schedule the condition based on the net value amount of the quote. For example, if the quotation is below \$500, you can release it automatically, and then send anything beyond \$500 for the approval process via workflow tasks.

▶ **Availability check**

You can carry out availability checks in a quotation just like in a sales order. The availability check offers the following options:

- ▶ You can assign an ATP profile to a quotation item category to carry out an availability check and block a stock when performing the availability check in a quote. An ATP check can either be from SAP ERP or SAP Supply Chain Management (SAP SCM) based on your system landscape.
- ▶ You can opt out of using the availability check by just not assigning the ATP profile in the quotation item category.
- ▶ You can carry out the availability check by assigning the ATP profile to the quote item category while not holding the stock. The quotation in this case is checked using simulation, and the configuration of the ATP profile is carried out in SAP SCM based on this specific scenario.

▶ **Alternative items**

When a quotation is created, alternative items allow you to offer the customer not just one particular product but a selection of similar products.

▶ **Accepting quote**

As soon as the quotation is released, it's available to create the sales order. After the sales order is created with reference to the quotation, the quote is accepted in one of various forms. For example, a sales order can be created from multiple quotes, or it can be created from one quote (this opens a quotation popup if one exists while creating the sales order). You can also create a sales order from a quotation as a follow-up document.

▶ **Completing quote**

A quotation is set to complete if the quantity within the quote is completely exhausted by creating the sales order or if the validity of the quote is expired.

▶ **Approving quote**

You can configure the approval process in the quotation document so that the quotation can be sent to the supervisor for approval based on a certain dollar amount. After the supervisor reviews the quote and approves it, the sales order can be created referencing the quote. SAP has provided a standard workflow template 10000279 (CRM: Release of Quotations) for quote approval, and this controls the release of the quotations. If you want to use the approval process in the transaction type AG (quotation), delivered as standard, you must assign the status profile CRMQUOTE to this transaction type.

► **Releasing a quote**

Quotations can be released automatically based on certain conditions; for example, if the quote net value is less \$500, then release the quote automatically. The workflow template WS10001068 (CRM_O_REL2) can be used to release the quote automatically. Conditions can be configured; for example, if the quotation net value is less than \$500, the workflow can be set to release it automatically.

6.4.2 Configuring Quotations

To better demonstrate the quotation process, we'll look at an example configuration.

Define the Transaction Type

The following is an example of a quotation (quotation transaction type: AG) configuration that shows the transaction type details and the business transaction categories assigned to it. Let's go through the configuration steps, including the item category configuration.

The TRANSACTION TYPE shown in [Figure 6.36](#) is similar to any business transaction in SAP CRM. Here, you assign the LEADING TRANSACTION CATEGORY as BUS2000115 SALES and have to configure the product determination, profiles, and number range assignment.

The contract determination, quotation determination, and agreement determination are configured in the sales document to determine the contract, quotation, and agreement when the sales order is created. If marked, the INACTIVE checkbox in [Figure 6.36](#) won't allow you to use this transaction in any of the SAP CRM applications. If you activate the NO CHANGE DOCUMENTS flag, the change history won't be updated in the quotation document.

[Figure 6.37](#) shows the quotation transaction profiles (text determination procedure, partner determination procedure, organization data profile, date profile, action profile, action determination procedure, object reference profile, and approval determination procedure). These procedures are used to overcome different business requirements on quotation transactions.

The screenshot shows the 'Definition of transaction type' dialog box for a Quotation. The 'Transaction Type' is 'AG' and the 'Description' is 'Quotation'. The 'Leading Transaction Category' is 'BUS2000115 Sales'. The 'Status Object Type' is empty. The 'Contract Determ.' field has a 'Search Auth. Partner' checkbox. The 'Quot. Determ.' and 'Agreement Determ.' fields are empty. The 'Inactive' field has a dropdown menu. The 'Commitment Date' field has a dropdown menu set to 'Commitment Date is Not Calculated'. There are checkboxes for 'No Change Documents', 'Postprocess. from', and 'Part. Process. Permitted'. The 'Template Type' field is empty. There are checkboxes for 'Territory Check' and 'Trans. Classification'. The 'Product Determination' section includes checkboxes for 'Enter GTIN', 'Enter Partner Product', 'Create Product Order Number', 'Always Check Product ID', and 'Product Description/ID Search'. There are also input fields for 'Profile for Altern. Identif.' and 'Product Substitution Proced.'.

Figure 6.36 Quotation Transaction Type Definition

The screenshot shows the 'Profiles' section of the 'Definition of transaction type' dialog box. It contains various profile fields: 'Text Det. Procedure' (ORDER001), 'Partner Determ. Proc.' (00000001), 'Status Profile' (empty), 'Org. Data Prof.' (000000000005), 'Partner Function ORG' (0001 Sold-To Party), 'Date Profile' (QUOTE001), 'Action Profile' (QUOTATION), 'AP Procedure' (empty), 'Obj. Ref. Prof.' (empty), 'Ext. Ref. Profile' (empty), and 'Aprv. Det. Procedure' (empty). The 'Transaction Numbering' section includes 'No. Range Object' (CRM_SALES), 'Int. No. Range No' (01), 'Ext. No. Range No' (14), and an 'Early No. Assgt' checkbox. The 'Item Numbering' section includes 'Increment Item' (10) and 'IncrementSubitm' (10).

Figure 6.37 Quotation Transaction Type Profiles

Only limited business transaction categories are assigned to the quotation transaction type; in this case, it's BUS2000115 SALES and BUS2000126 BUSINESS ACTIVITY (see [Figure 6.38](#)).

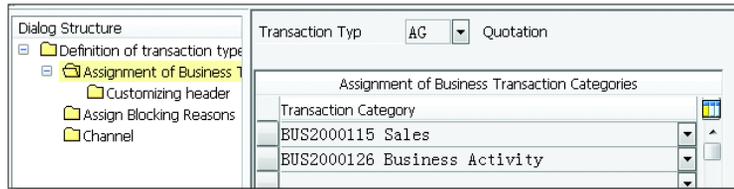


Figure 6.38 Assignment of Business Transaction Categories

Header Configuration

[Figure 6.39](#) shows the header customizing details with configuration options such as CREDIT CHECK, CHECK PO NUMBER, PRICING DATA, PAYMENT DATA, and EXTERNAL REFERENCE OBJECTS.

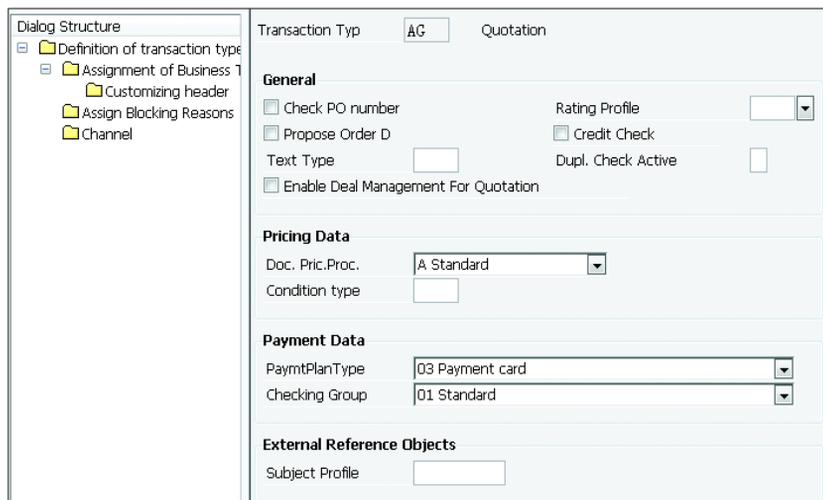


Figure 6.39 Quotation Header Customizing

Item Category Configuration

When you add items to the quotation transactions, you can have different controls at the item level versus at the header level. This relates to the profiles such as date profile, action profile, partner determination procedure, and so on. You can

configure the item category profiles based on your business needs. The configuration logic and steps are already covered in [Chapter 3](#).

The object type for the quote item category is the BUS2000131 CRM Sales Item. The most relevant data to configure the quotation item category is pricing data and quotation data. The following are definitions around the field configuration (see [Figure 6.40](#)):

- ▶ **BILL. RELEVANCE**
This field allows you to mark or unmark the item relevant for billing. There are different options available, such as EXTERNAL BILLING, DELIVERY RELATED BILLING, or TRANSACTION RELATED BILLING.
- ▶ **MILESTONEBILLING**
You can set this indicator if you want to activate the milestone billing.
- ▶ **INTER. BILLING**
You can activate intercompany billing with this field with a value via SAP CRM billing or external billing.
- ▶ **CREDIT GROUP**
To activate the credit management functionality within SAP CRM, you need to assign the credit group to the item category.
- ▶ **VALUATION PROFILE**
You can assign the valuation profile to the item category to activate the credit rating functionality within SAP CRM.
- ▶ **PRICING-REL.**
For pricing to be determined on the quote line item, it's imperative to mark the item category as price relevant.
- ▶ **STATIST. VALUE**
This option specifies whether the system takes into consideration the value of an item when determining the total value of a sales document.
- ▶ **PRICING INDICAT.**
Similar to price relevant, this field needs to be set as ACTIVE if you want to determine the price on the quotation line item.
- ▶ **PRICING PROCESS**
This option helps you distinguish whether the quotation is free of charge or the one that determines the price on the quotation line item. Free of charge will automatically determine 100% discount on the quote line item.

Dialog Structure

- Definition of Item Categories
 - Assignment of Business Transactions
 - Customizing Item

Item Category: Quotation Item

Billing Data/Credit

Bill. Relevance:

MilestoneBilling:

Int. Billing:

Credit Group:

Valuath Profile:

Pricing Data

Pricing-rel.

Statist. Value:

Pricing Indicat.:

Pricing Process:

Condition Type:

Quotation Data

Relevance for Quotation:

Subsequ. processing:

Order Probability %:

ATP profile: quot.:

Multiple References:

Fixed Qty

Rounding

Delivery Unit Minimum Quantity

Figure 6.40 Item Category Details

► **CONDITION TYPE**

Entering the condition type will allow you to display this condition type in the item overview screen of the IC WebClient UI. This can be edited manually, if you also assign the condition type to the transaction type.

► **RELEVANCE FOR QUOTATION**

This option drives the system status of the quotation line item regarding whether it should be a quote item or not. The system status will show a REQUEST FOR QUOTATION if the field is set to INITIALLY AN INQUIRY.

► **SUBSEQU. PROCESSING**

This option controls how further processing of the quotation should be carried out. The value in this field defines whether the item should be copied to an order item or should become a contract/order item by resetting the quotation status.

- ▶ **ORDER PROBABILITY %**
This is the probability that the sales order is initiated on the basis of the quotation. The order probability can be manually changed on the quotation.
- ▶ **ATP PROFILE: QUOT.**
You can activate the availability check functionality by setting the ATP profile on the quote item category.
- ▶ **MULTIPLE REFERENCES**
If the setting for this option is No, then you can refer one order to one quote; if the setting is Yes, you have multiple orders linked to one quote.
- ▶ **FIXED QTY**
If activated, the quantity can't be changed while the order is created from the quote document via the **CREATE FOLLOW UP DOCUMENT FROM QUOTE** button. The configuration option to the multiple reference field is automatically deactivated when **FIXED QTY** is activated.

6.4.3 Data Exchange

By default, a quotation created in SAP CRM isn't transferred to SAP ERP because document flow of the quotation isn't activated. The following sections look at the quotation data exchange from SAP CRM to SAP ERP and SAP ERP to SAP CRM.

Quotation Transfer from SAP CRM to SAP ERP

If the quote is transferred from SAP CRM to SAP ERP, the quote is then referenced in SAP ERP and can't be referenced in SAP CRM. The document flow is updated in both systems, and the combined business transaction isn't supported when transferring the quote from SAP CRM to SAP ERP. To activate the quotation transfer from SAP CRM to SAP ERP, you need to set the middleware parameter `QUOTATION_UPLOAD_ACTIVE`, and a system status (I1055) must be adapted.

Quotation Transfer from SAP ERP to SAP CRM

When transferring the quote from SAP ERP to SAP CRM, the quote can't be changed in SAP CRM and is available for display purpose only.

To reference the quote in the sales order, you also need to maintain the copy control settings for the transaction type and item category.

This section provided an overview of the quotation process and its determination on sales orders. It explained the overall quotation function, its processes, and the configuration steps required to set up a quotation. After the quotation is released, it's then referenced when creating a sales order, which we'll discuss next.

6.5 Sales Order

A *sales order* is a request made by a customer to an organization for buying certain goods to be delivered on a date specified by the customer. A sales order is a sales transaction that is tracked to determine the revenue of the company. It can be created with reference to documents such as sales contracts or quotations. Different sources can be used to create a sales order. These include the IC, mobile client, handheld device, Internet sales, SAP CRM, and SAP ERP.

A customer sends the request to an organization to buy a product. This request can be in the form of electronic data interchange (EDI), phone, fax, and email. After the order request is received, the sales order is created. The ATP check triggers to see if the product requested on the delivery date is available or not. If the product isn't available on the requested delivery date, then the date is pushed out based on its availability.

A credit check is also executed to see if the customer has an optimum credit history and that the credit limit of the customer is met. All other information on the sales order, such as organization data, text data, partner data, and more, is populated based on the master data and the determination procedure.

After the order is saved, it's replicated to the SAP ERP system for delivery and billing. Billing can be done either in an SAP ERP system or an SAP CRM system. The status on the SAP CRM sales order is updated when the delivery and billing happens for the sales order. The document flow is updated in both SAP CRM and SAP ERP.

6.5.1 General Business Functions

A sales order contains various elements such as organization data determination, content management, text management, partner processing, pricing, data profiles, and status management. There are general business functions within a sales order

that can be configured based on your business scenario, such as confirmations and actions triggered.

In the following sections, we'll look at a few of these business functions and their purpose in the sales order process.

Sales Order Checks

Sales order checks are validations that are useful when creating orders, helping customer service to take action accordingly. There are different checks that can be made within a sales order that must be taken into consideration. The following sections look at these various checks.

Checks for Duplicate Purchase Order Numbers

A purchase order number check verifies whether the purchase order number used by the sold-to party is already used in a different order from this partner. Doing this prevents the same order from being created several times in the system. You can configure the business partner group for purchase order number check and assign the transaction type to the business partner group designating check mode as either A – DUPLICATES PERMITTED FOR DIFFERENT TRANSACTION TYPES or X – DUPLICATES FORBIDDEN OR DUPLICATES PERMITTED. You then assign the business partner group to the business partner master data in the sales area data. To perform this function, use the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • CONFIGURE PURCHASE ORDER NUMBER CHECK.

Duplicate Checks

A duplicate check is used when you want to restrict the same product from being entered in the sales order multiple times. You receive the warning message when you activate the duplicate check. You can configure and activate the duplicate check via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES.

Quantity Checks

You have the capability to configure the system for a minimum order quantity, delivery unit, and a maximum order quantity. For example, if you require that a certain product has a minimum limit that the customer should order, you need to

enter the minimum quantity in the product master data under the SALES AREA tab and activate the MINIMUM QUANTITY check at the item category configuration.

Similarly, for a delivery unit, if you require the item to be ordered in multiple units, then you need to maintain the delivery unit in the product master data and activate the DELIVERY UNIT checkbox in the item category configuration. When you enter the quantity that isn't in the multiple of the delivery unit, the system will automatically round up to the next multiple of the delivery unit.

You can also carry the quantity checks for the maximum allowed quantity. This means that if you want customer service to be notified that customers should not be allowed to order a certain product beyond a specified quantity limit, then you need to implement the BAdI for Checking Maximum Quantity in Sales Transaction Items. The configuration path for this is SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • BUSINESS ADD-INS • BUSINESS ADD-IN FOR CHECKING MAXIMUM QUANTITY IN SALES TRANSACTION ITEMS.

You can create the set type and attribute in the product master in SAP CRM and maintain the max quantity limit and then implement the BAdI to cross check whether the item quantity entered in the sales order item is greater than the maximum limit maintained in the product master. If it's greater, you'll receive the warning message.

Credit Checks

A credit check on a sales order happens when saving the order. If you've activated the credit check at the transaction type level and have configured the credit group at the item category level, the credit check functionality is activated. More details on the credit checks and configuration is covered in [Section 6.5.2](#).

Partner/Product Checks

Partner product ranges (PPRs) identify the set of products that can be sold to a specific customer for a specific period of time. This can also be restricted at the sales organization level. In addition to this, PPR also allows you to prevent certain products from being sold to certain customers. Exclusion is controlled by the exclusion flag for a PPR. The exclusion flag indicates that the products contained therein can't be sold to the listed business partners during the validity period.

Listing Checks

A listing check is similar to the partner/product checks. With listing checks, you can configure the listing condition table based on your requirements and have the tables contain fields based on your business needs. Listing checks allow you to offer a certain product to a specific customer. You can configure a listing or exclusion via the configuration path, SPRO • CRM • MASTER DATA • LISTING.

The determination procedure is assigned via the configuration path, SPRO • CRM • MASTER DATA • LISTING • LISTING SETTINGS FOR APPLICATIONS • ORDER AND COMPLAINTS MANAGEMENT • ASSIGN DETERMINATION PROCEDURES.

Shipping and Scheduling Functions

Shipping and scheduling functions are used for delivering the goods to the customer. These functions are derived from the sales order fields related to the shipping data.

Proposing Requested Delivery Date

The REQUESTED DELIVERY DATE is entered at the sales order header and is configured within date management as one of the date types. You can enter the requested delivery date at the header manually and then confirm that the schedule lines are determined based on the requested delivery date entered at the header. You can configure the requested delivery date within the date type to assign the ship-to party as a reference object. This will take the goods receiving (GR) hours from the ship-to party to default the GR time and will give you the warning message if the requested delivery date doesn't fall in the days maintained in the ship-to GR hours. If this setting isn't maintained, then the system will take the local time zone.

Requested Delivery Date

Unlike SAP ERP, where you can have the first date different on each line item, the requested delivery date at the line item can't have a different date than at the header of the sales order. Because an SAP CRM sales order is a one-order object, the sales structure for the requested delivery date is the same at the header and line item. The schedule line structure gets the date from the header requested delivery date to calculate the product availability.

Delivery dates and the product scheduling dates in SAP CRM are in a ship-to time zone, whereas the SAP ERP schedule line dates, such as material availability date, goods issue date, transportation date, and loading date, are in a shipping point time zone.

Availability Checks

Availability checks are carried out based on whether the system middleware parameters are specified to be carried out in SAP ERP or in SAP SCM. After that is determined, you need to configure the item category by assigning the ATP profile to call either SAP ERP or SAP SCM for carrying out the availability check. More details on the availability checks and configuration is covered in [Section 6.5.2](#).

Schedule Lines

Based on the requested delivery date on the sales order header, an ATP call is made to SAP SCM to get the schedule line dates and quantity available for a particular line item on the sales order. The schedule line information consists of the delivery date when viewed on the WebClient UI and all the schedule line dates, such as material availability date, goods issue date, transportation date, loading date, and delivery group date, are stored in table CRMD_SCHEDLIN.

Committing Business Transaction Items for Delivery

This functionality determines the commitment date in the sales order schedule line. For example, if the commitment date is configured to be three weeks, and the customer orders a product with a requested date earlier than three weeks, and the confirmed date comes back as more than three weeks from the time the order was created, then the commitment to the customer for delivering the product isn't fulfilled. You can view the commitment date in the schedule line.

You can achieve this functionality by following these steps:

1. Configure the DATE TYPE to include duration DLVTIME. Configure the DURATION based on your business needs.
2. Configure the transaction type as stated in the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. [Figure 6.41](#) shows the COMMITMENT DATE field set to A ONLY AGREED DELIVERY TIME IS CONSIDERED. This is used for calculating commitment dates on sales transactions.

Transaction Type: TA Standard Order

General

Description: Standard Order

Leading Transaction Category: BUS2000115 Sales

Status Object Type: []

Contract Determin.: [] Search Auth. Partner: []

Quot. Determin.: []

Agreement Determin.: []

Inactive: []

Commitment Date: A Only Agreed Delivery Time is Considered

No Change Documents

Postprocess. from: []

Part. Process. Permitted:

Figure 6.41 Commitment Date Configuration Settings in the Transaction Type

Grouping Sales Order Items for Delivery

You can group sales order line items together and deliver them in one delivery document. You can control this functionality based on your customer master data setup. There are two fields in the customer master (sold-to)—DELIVERY CONTROL and DELIVERY CONTROL ITEM—where you determine whether you want partial delivery allowed or complete delivery on the sales order for this specific customer.

If the customer is set to B – COMPLETE DELIVERY at the DELIVERY CONTROL field and C – COMPLETE DELIVERY at the DELIVERY CONTROL ITEM field, then all the products in the sales order are grouped under one delivery. As a result, the delivery is created when all items are available to deliver. A delivery group date is determined when the delivery is created, and the customer is marked with the complete delivery flag. You can also make different settings such as ONE TIME DELIVERY at the DELIVERY CONTROL ITEM; this will allow you to just create one delivery at the delivery group date, which is derived based on the latest schedule line date on the sales order line item.

One additional functionality on grouping the subitems can be controlled via the item category configuration. This means if there is a main item that has subitems on the sales order, and you want to group main and subitems together on one delivery group date, you can configure the item category to achieve this functionality.

Definition of Route, Carrier, and Means of Transport

The transportation data on the sales order is determined by the system used for the ATP check. If the ATP check happens in an SAP ERP system, then the sales

order transportation data is derived from SAP ERP; if the ATP check happens from an SAP SCM system, then the transportation data on the SAP CRM Sales is derived from SAP SCM.

Carriers on the sales order can be configured as one of the partner functions. The MEANS OF TRANSPORT options are derived from ATP calling system. The ATP calling system uses the MEANS OF TRANSPORT to derive the route for scheduling the material schedule line dates. If you enter the MEANS OF TRANSPORT manually, then the sales order ATP check triggers again, and the manual data is used in the ATP check to schedule the product.

Creating Outbound Packing Instructions

You can configure notes to populate specific outbound packing instructions to the warehouse team. If there are customers or products that require special packing instructions, then these can be added to the master data notes and can be populated on the sales order when the sales order is created for the specific master data. You need to configure a text type within text management in the configuration.

Triggering Third-Party Orders from the Sales Order

You can configure the item category in SAP CRM to bypass the ATP check and configure the schedule line category for this item category to trigger the third-party process for creating purchase requisitions and POs from the sales order replicated in SAP ERP. Bypassing an ATP check on an SAP CRM item category can be done by simply not assigning the ATP profile to the item category in SAP CRM.

If you've activated the Service Parts Management functions, then the sales order in SAP CRM is assigned with the action profile CREATE_PREQ to the item category, which then creates the purchase requisition in SAP ERP from the SAP CRM sales order.

BADIs

Following are some of the BADIs that are useful while developing or accomplishing any business requirement that isn't delivered by SAP via configuration:

- ▶ ORDER_SAVE (BADI CRM Order Save)
- ▶ CRM_SALES_BADI (BADI to Process Sales)
- ▶ CRM_SHIPPING_BADI (BADI to Process Shipping)
- ▶ COM_PARTNER_BADI (BADI for Partner Processing)

6.5.2 Specialized Business Functions

Having looked at the general business functions within sales orders, let's now take a moment to walk through some of the more specialized business functions for sales orders.

Availability Check

An availability check is an important function within sales order processing. When a customer makes an order and receives a confirmation, it's important that an availability check is performed to ensure that enough stock is available. This allows a company to ensure not only that the product is available but that it will be delivered by the specified delivery date to the customer. Some organizations promise customers that their orders will be shipped on time but are often unable to fulfill this promise due to an availability issue.

In a typical IC scenario, a customer calls a customer service representative to place an order. The customer service representative then enters the product, quantity, and requested delivery date into the system. As soon as the customer service representative presses , the ATP check is performed, and SAP CRM gets the confirmed quantities back from either SAP Advanced Planning and Optimization (SAP APO) or SAP ERP. The orders created in the SAP CRM system undergo the ATP check to see if the ordered products are available. Based on the availability check, the requirements are transferred to the availability check leading system (SAP ERP or SAP SCM). After the order is saved, a confirmation is sent to the customer. You can configure the system to check ATP from the SAP ERP system, SAP SCM system, or any external system.

Some business scenarios require a location substitution based on the products available or product substitution. These can be handled through the rule-based availability check within SAP APO. SAP CRM calls BAPI_APOATP_CHECK to fetch the availability results from SAP APO.

Availability Check Using SAP APO

Companies using an SAP SCM system carry out an ATP check using SAP APO. SAP CRM is connected to SAP SCM. The BAPI calls are triggered to carry out ATP, shipment scheduling, and transportation scheduling on the sales order line items created from SAP CRM.

Using SAP APO compared to SAP ERP for triggering an ATP check has many advantages, one of which is the *rule-based availability check* where you can set some rules for product substitution and location substitution based on the product's availability.

The SAP APO ATP delivery proposal screen can be called from SAP CRM by clicking the AVAILABILITY CHECK button from the SAP CRM sales order.

SAP APO Settings

You need to maintain PARAMETER ID APO_ATP_PARA with PARAMETER VALUE 6 in your USER ID settings.

There are two possible options provided by SAP for an ATP check from SAP CRM using an SAP APO system:

► **Availability check and material requirements planning (MRP) in SAP APO**

In this specific scenario, a company creates the sales order in an SAP CRM system, and ATP and MRP are carried out in an SAP APO system. The order is replicated to an SAP ERP system, and there is no communication from SAP APO to SAP ERP. The ATP check and MRP in SAP APO requires the following steps:

1. Create an order from the IC or Web Channel. Enter the requested delivery date with products and quantity.
2. Press to call SAP APO. The quantities ordered reside in temporary quantity assignments (TQA) in the SAP APO system. The results come back to SAP CRM.
3. Save the order. MRP is passed to SAP APO as soon as the order is saved in SAP CRM, which releases the TQA in SAP SCM.
4. The order is then replicated to SAP ERP. There is no data transfer from SAP ERP to SAP SCM.

Stock and Planning in SAP APO

SAP strongly recommends using this method for confirming the stock and planning in an SAP APO system. SAP has provided BAdI CRM_CHANGE_DFLT_SCEN (Template for Changing the Valuation of Scenarios/Procedures) in case you want to execute planning in the SAP ERP system after the orders are replicated to SAP ERP.

► **Availability check in SAP APO and MRP in SAP ERP (triangle scenario)**

In this scenario, requirements are posted when the orders are created from SAP CRM. When the order is replicated to SAP ERP, MRP is executed from SAP ERP to SAP SCM. The ATP check and MRP use the following steps in SAP APO:

1. Create an order from the IC or Web Channel. Enter the requested delivery date with the products and quantity.
2. Press to call the SAP APO system. ATP/scheduling for quantities ordered takes place, and the TQA occurs in the SAP APO system. The results come back to SAP CRM. Save the order. The order is replicated to the SAP ERP system.
3. ATP triggers in SAP ERP, and the sales order in SAP ERP picks up the results from the TQA in SAP APO.
4. The order is saved in SAP ERP, and MRP is passed to the SAP APO system as soon as the order is saved in SAP ERP.

Following are the configurations required to set up an ATP call from SAP CRM to SAP APO for an availability check and MRP in SAP APO:

1. We first need to define the middleware parameters and have the availability check using SAP ERP (see [Figure 6.42](#)). Navigate to SAP CRM, and then follow BASIC FUNCTIONS • AVAILABILITY CHECK • AVAILABILITY CHECK USING SAP ERP • DEFINE MIDDLEWARE PARAMETERS: AVAILABILITY CHECK USING SAP ERP.



Figure 6.42 Middleware Parameters: Availability Check Using SAP ERP

2. Next, define the ATP PROFILE, as shown in [Figure 6.43](#).
3. Configure the item category to assign the ATP profile configured in the preceding step (see [Figure 6.44](#)).

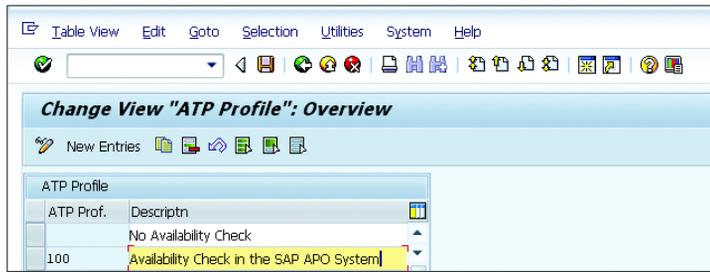


Figure 6.43 ATP Profile

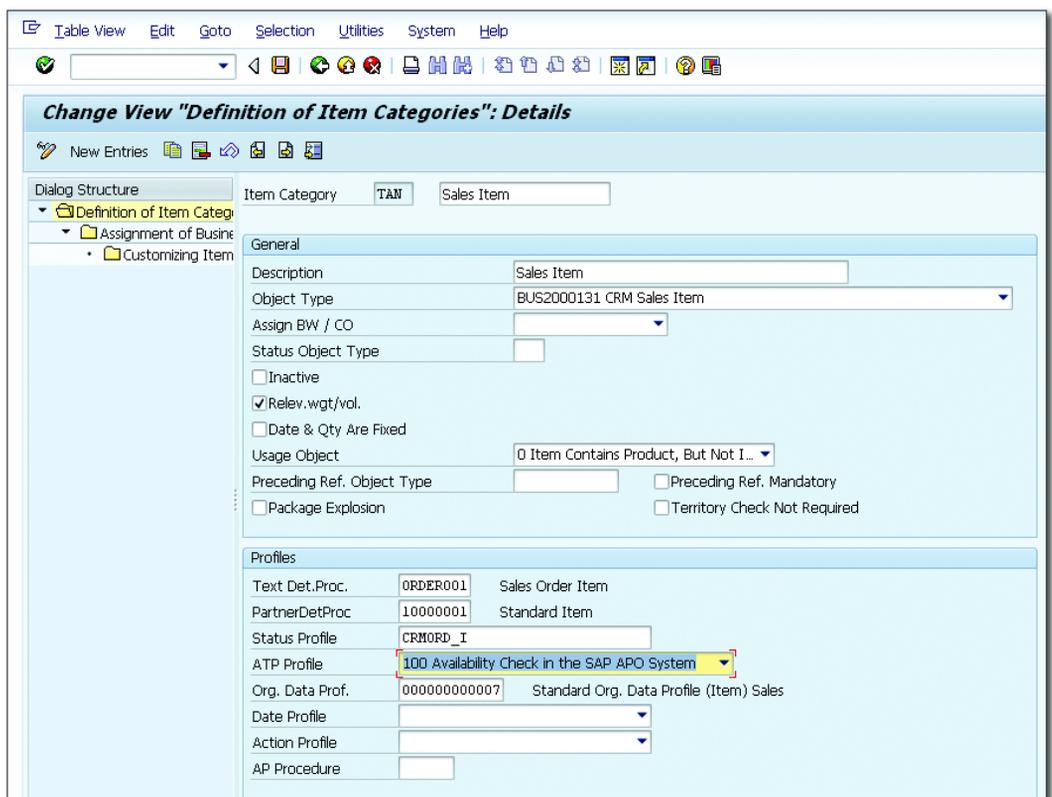


Figure 6.44 Assigning the ATP Profile to the Transaction Type

- Now configure the requirements profile (see Figure 6.45). On the SAP EASY ACCESS screen, navigate to SPRO • ADVANCED PLANNING AND OPTIMIZATION • GENERAL SETTINGS • REQUIREMENTS PROFILE • MAINTAIN REQUIREMENTS PROFILE.

Change View "Maintain Requirements Profile (ATP)": Details

New Entries

Reqmts prfl: 100 **CRM ATP Check**

Maintain Requirements Profile (ATP)	
Category	BM
Order Header Cat.	<input type="checkbox"/>
Check Mode	<input type="checkbox"/>
Business Event	A
Assignment Mode	No assignment
TQA Type	E Write both internal and external temporary objects
Validity TQAs	<input type="text"/>
Tech. Scenario	<input type="checkbox"/>
Business Trans.	<input type="checkbox"/>
RS for Initial Locat.	<input type="text"/>
Scheduling Ind.	A Execute Scheduling
Preselection Substns	<input type="checkbox"/>
RS for Supplier C.Loc.	<input type="text"/>

Figure 6.45 Requirements Profile

Location Determination

The default location determination for the orders created in SAP CRM can occur in the SAP SCM system based on the rule strategy for initial location function (RS FOR INITIAL LOCAT. field in [Figure 6.45](#)) in SAP SCM, or you can determine the default location from the partner determination procedure in SAP CRM and pass the location information in the field catalog for the ATP check.

A rule-based availability check is carried out in SAP APO. This is mainly configured for cases where you need to substitute a plant or products while creating sales orders in SAP CRM. The condition techniques for the rule-based availability checks are configured in an SAP SCM system, with the master data for rule maintenance created in SAP SCM. A prerequisite for a rules-based availability check is that the MRP is carried out in the SAP APO system, and the requirements are passed on to SAP APO by the sales transaction in the SAP CRM system.

Some organizations might want to substitute a location if the default location doesn't have the products available. This process is referred to as *location substitution*. An organization might like to keep the location and substitute the product based on the availability. In each of these cases, a rule-based availability check plays a vital role.

For rules-based availability checks to take place for an item, it's important to configure the item category. This needs to be done in both the SAP CRM system and in SAP APO:

► SAP CRM

There are two item category usages:

- APO1 (RBA main item) to determine the item category of the main item.
- APO2 (RBA item) to determine the item category of the subitem.

Under ITEM CATEGORY DETERMINATION, an entry for the main item and an entry for the subitem are defined for the transaction type. The standard version of the system includes the following examples:

- Transaction type TA, item category usage RBA main item
- Transaction type TA, item category usage RBA item

You define ITEM CATEGORY DETERMINATION in Customizing for SAP CRM under TRANSACTIONS • BASIC SETTINGS • MAINTAIN ITEM CATEGORY DETERMINATION.

Figure 6.46 shows the ITEM CATEGORY DETERMINATION configuration of the main item TAPA item category and the subitem TAN item category.

Trans.type	Desc. Tran...	ItemCtyGrp	Item usage	MainitmCty	Desc. itm ...	Item Cat.	Desc. ItemCty	Alt. IC 1	Desc. alt. IC
TA	Standard Or...	NORM Sales Item		TAQ	Pric.at Head...	TAE	Sales Explanation		
TA	Standard Or...	NORM Sales Item	AP01 RBA Main Item	TAQ		TAPA	CRM Rule-Based ATP		
TA	Standard Or...	NORM Sales Item	AP01 RBA Main Item	KIT	Kit Header I...	TAP2	CRM Rule-Based ATP		
TA	Standard Or...	NORM Sales Item	AP01 RBA Main Item	02N	1-to-N Head...	TAPA	CRM Rule-Based ATP		
TA	Standard Or...	NORM Sales Item	AP02 RBA Item	TAP2	CRM Rule-Ba...	KOMP	Kit Component Item		
TA	Standard Or...	NORM Sales Item	AP02 RBA Item	TAPA	CRM Rule-Ba...	TAN	Sales Item		

Figure 6.46 Item Category Determination

► **SAP APO**

You define the settings for rules-based availability checks in the IMG of the SAP APO system under **ADVANCED PLANNER AND OPTIMIZER (APO) • GLOBAL AVAILABLE-TO-PROMISE (GLOBAL ATP CHECK) • RULES-BASED AVAILABILITY CHECK**.

In the requirements profile, which is assigned to an item category as an ATP profile in the SAP CRM system, the following attributes are relevant for rules-based availability checks:

- Technical scenario
- Business transaction
- Action type, which is transferred by the SAP CRM Online application with the possible values of A (create) and B (change)

Condition records must be created to fulfill the business objective that serves as the master data and will have the location substitution or product substitution rules assigned. Rule maintenance is carried out in SAP APO and forms a basis of the master data record, which is created via the SAP EASY ACCESS screen under **ADVANCED PLANNING AND OPTIMIZATION • MASTER DATA • RULE MAINTENANCE**.

Now, let's say you want to have the option with an SAP CRM sales order to select either a location substitution or product substitution in the rule criteria. You can control that from the rule criteria, which can be accessed via SAP CRM under **CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • AVAILABILITY CHECK • AVAILABILITY CHECK USING SAP APO • RULES-BASED AVAILABILITY CHECK • DEFINE RULE CRITERION 1**.

A rules-based availability check uses the condition technique and must be set up in SAP APO. This includes the following:

- A condition type that uses the **RULE CRITERION 1** field (**CRMT_ATP_SUBST_EXCL**) in its key.
- One or more condition records for this condition type. The condition record has the field value for an ATP exclusion that is entered here in the IMG (e.g., A = no product substitution). This condition record should contain a rule that reflects the purpose of this field; for example, in this case, it contains only a location determination procedure.

As an example, if you create a sales order with **RULE CRITERION 1** set to A activated on the sales order, the ATP call to SAP APO will look for the location substitution

only and will bypass the product substitution. In this step, you enter the field values that can be used in the RULE CRITERION 1 field in the sales transaction as stated:

- ▶ A (no product substitution)
- ▶ B (no location substitution)

The entries that you maintain here are used for input help in the RULE CRITERION 1 field:

- ▶ In the business partner master record under SALES AREA DATA on the ATP tab
- ▶ In the sales transaction header on the HEADER OVERVIEW tab, ATP section
- ▶ In the sales transaction item on the SCHEDULE LINES tab

For a more specific search, you can configure RULE CRITERION 2, which can be used to determine the product or location at the granular level. The configuration step is similar to RULE CRITERION 1.

Note

The item categories configuration in SAP CRM and SAP ERP should always be in sync to avoid any functionality issues.

Availability Check Using SAP ERP

Companies can carry out an availability check in SAP ERP when they don't use an SAP APO system. In this case, the ATP check and MRP happen in SAP ERP.

When you enter the line item for the SAP CRM sales order, the remote function call (RFC) to SAP ERP happens, and the ATP check is performed. The reservation of stock is performed with transportation and shipping scheduling. SAP ERP transfers the results back to SAP CRM. Some of the ATP trigger points are change quantity, change requested delivery date, change the schedule line, and remove the cancelling reason code when the order is created from SAP CRM.

Following are the configuration steps required to set up the ATP call from SAP CRM to SAP ERP:

1. In SAP ERP, you must activate the Business Transaction Events (BTEs) for the AVAILABILITY CHECK USING SAP ERP. To set this flag in SAP ERP, do the following:

- ▶ Enter Transaction "FIBF".
 - ▶ Choose SETTINGS • IDENTIFICATION • SAP APPLICATIONS.
 - ▶ Enable the CRMATP application.
2. In SAP ERP, the material must not be relevant for the availability check with SAP APO. [Figure 6.47](#) shows activating the BTE for CRMATP.

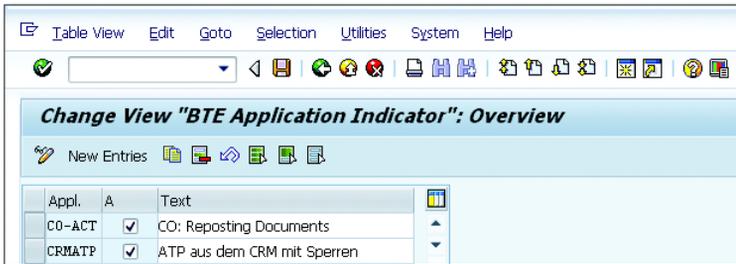


Figure 6.47 Business Transaction Event Application Indicator

3. In an SAP CRM system, the configuration is required to activate the ATP call from SAP CRM to SAP ERP. To do so, navigate to SAP CRM under BASIC FUNCTIONS • AVAILABILITY CHECK • AVAILABILITY CHECK USING SAP ERP • DEFINE MIDDLEWARE PARAMETERS: AVAILABILITY CHECK USING SAP ERP.
4. Enter the middleware parameters as follows:
- ▶ KEY: R3A_COMMON
 - ▶ PARAMETER 1: CRM_DEFAULT_DESTINATION
 - ▶ PARAMETER 2: CRM_R3MATERIAL_AVAIL
 - ▶ RFC DESTINATION: <RFC destination>
 - ▶ CONTROL INFORMATION: X=R/3<x.yz>; for example, "X=R/36.10". <x.yz> stands for the SAP ERP release. In the example, the SAP ERP release is 6.10. If you omit the "X", then SAP ERP isn't activated.

Scheduling Dates

The scheduling dates in an SAP CRM sales order refer to a ship-to time zone, whereas the scheduling dates in SAP ERP refer to a shipping point time zone. For more details regarding time zones, refer to SAP Note 705087.

Backorder Processing

Backorder processing can be executed in either SAP ERP or SAP APO based on your system setup. In backorder processing, you receive a list for a material with all relevant receipts and dispatches for the availability check and the option of processing shortfall quantities.

You have the following processing options in backorder processing:

- ▶ Open requirements can be reconfirmed, for example, if the stock has increased since the last availability check, another receipt has occurred, and so on.
- ▶ Quantities that have already been confirmed can be redistributed by partly or completely reducing quantities allocated to confirmed requirements, and instead assigning them to other more urgent requirements.

Allocation

Allocation helps a company distribute the stock based on the customer requirement, which means if sufficient stock isn't available, and the company doesn't want to block the stock for one big order for a specific customer, then you can allocate a limited quantity based on distribution channels, geographic region, customer groups, or a strategic customer. This situation may arise when the product availability is limited, the product is seasonal, or the product is in high demand requiring longer lead times.

Allocation helps a company allocate stock based on the customers in a proportionate amount and maintain good customer relationships.

This is widely used in the manufacturing environment, and most of the time allocation takes precedence over ATP check. This means that even if the stock available is more than the ordered quantity, and the allocate quantity for that customer is less than the ordered quantity, the confirmed quantity on the order shows only what is allocated and not what is available in stock.

SAP Credit Management

SAP Credit Management is an important function in understanding the credit standing for any customers. Customers are assigned with certain payment terms. When they buy any products, they have to settle with company accounting the terms of payment assigned to them. It's a loss to the company if a customer doesn't settle the account by the specified period. For this reason, SAP

has introduced the Credit Management function that allows companies to understand the credit rating of a customer and deliver the products only if the customer's credit limit has not been exceeded.

SAP Credit Management helps minimize the financial risk of any organization. The *credit control area* maintained in SAP ERP determines the rules to undergo the credit check for a specific customer. The credit control area is an organizational unit that is assigned to the company code.

There are different ways of assigning the credit control area to a company code in SAP ERP. You can either assign one company to a credit control area, or you can assign multiple company codes to a credit control area. Whenever an order is placed for a customer, the company code is determined based on the sales organization. The credit control area is determined by the company code. If the credit control area is assigned to one company code, the customer can be assigned with different credit limits per company code. If you assign multiple company codes to one credit control area, then the customer is assigned with one credit limit across multiple company codes.

Within SAP CRM, you can connect to one of the following credit management applications:

- ▶ SAP Credit Management (FI-AR-CR, SD-BF-CM) in SAP ERP
- ▶ SAP Credit Management (FIN-FSCM-CR) in SAP ERP; the connection is established using SAP Exchange Infrastructure (SAP XI)
- ▶ An external credit management system connected using SAP XI

The intent of this section is to cover credit management with SAP Credit Management (FI-AR-CR) in SAP ERP.

Configuring SAP Credit Management

In an IC application, a customer sales representative gets a call from a customer whose credit rating is at risk and whose credit limit is already reached.

Note

Credit check is based on the payer.

Customer service creates an order by entering the customer requested date, line item, and quantity, and then saves it. After the order is saved, the credit check

is executed. SAP CRM then calls the credit check and sends the information to SAP ERP.

The response from SAP ERP depends on the payer's credit standing. In this case, because the credit limit for the customer is already exhausted, the result comes back as "Credit Check, Not OK." Customer service, in response, changes the customer's credit status to match this. The customer service representative then makes a call to determine whether the credit needs to be released for the payer or not. He can release the credit either from SAP CRM or SAP ERP to initiate the delivery and billing.

Number of Credit Checks

The number of credit checks depends on the number of item categories in the sales order. Because the credit group is assigned at the item category in SAP CRM, the credit calls are based on the number of the item categories on the sales order.

Follow these steps to configure SAP Credit Management:

1. To manage the credit group in SAP CRM, under CUSTOMER RELATIONSHIP MANAGEMENT, go to BASIC FUNCTIONS • CREDIT MANAGEMENT • GENERAL SETTINGS • MAINTAIN CREDIT GROUP. This will take you to the screen shown in [Figure 6.48](#).



Figure 6.48 Maintaining a Credit Group

This screen has the following columns:

- ▶ **REDUCE CONFIRMED QTY:** This check within the MAINTENANCE OF CREDIT GROUPS configuration is for reducing the confirmed quantity after a negative credit check, that is, if the credit check fails. Set this indicator if you want the system to carry out the following actions automatically after a negative credit check (status: CREDIT CHECK NOT OK) for the corresponding items:

- Reduce confirmed quantity to the quantity already delivered.
- Block further ATP checks by setting status ATP BLOCK; this status is displayed in the document.
- Don't update the corresponding credit value.

After the item has been released or another credit check has been performed with a positive result (status: CREDIT CHECK OK), the system automatically removes the status ATP BLOCK and carries out a new ATP check to recompile the confirmed quantities.

► **CREDIT QUANTITY:** This indicator is used for identifying the relevant quantity for the credit check. Set this indicator to define which quantity should be drawn upon for the credit check. You can define the following quantities as credit-relevant for the credit check:

- **REQUESTED QUANTITY:** If you choose to make the requested quantity credit-relevant, it's included in the credit check regardless of the result of an ATP check.
- **CONFIRMED QUANTITY:** If you choose to make the confirmed quantity credit-relevant, the credit check only calculates values that are based on the confirmed quantity.

2. Navigate to SAP CRM under CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CREDIT MANAGEMENT • GENERAL SETTINGS • ASSIGN CREDIT GROUP TO ITEM CATEGORY. Here you'll assign the credit group to the item category, as shown in [Figure 6.49](#).

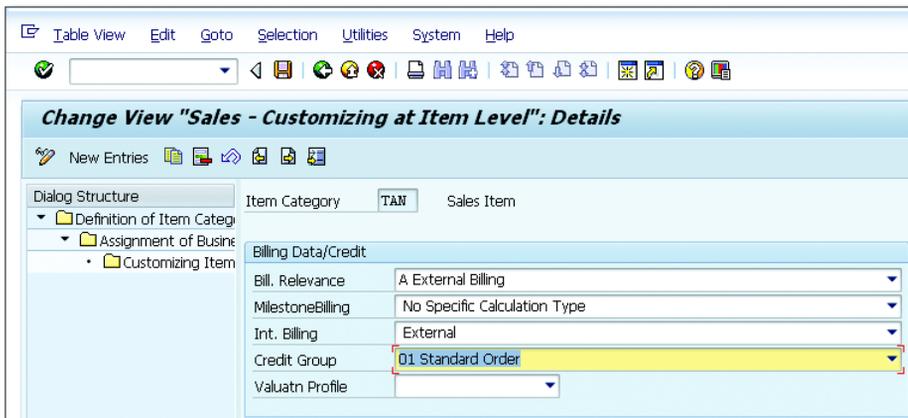


Figure 6.49 Credit Group Assignment to the Item Category

3. Activate the credit check in the transaction by navigating to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CREDIT MANAGEMENT • GENERAL SETTINGS • ACTIVATE CREDIT CHECK IN TRANSACTION (see [Figure 6.50](#)).

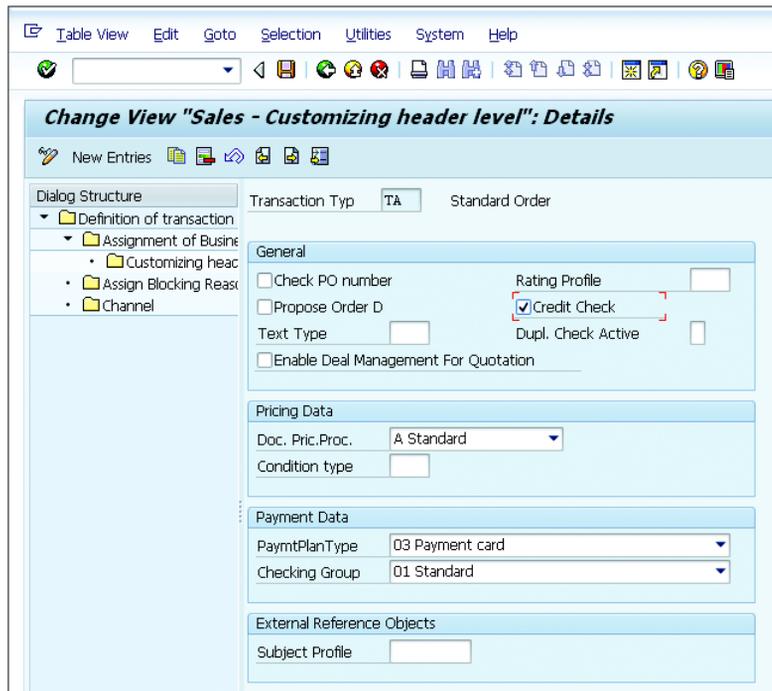


Figure 6.50 Activating the Credit Check in the Transaction Type

BAdI CRM_CREDIT_CHECK

The use of BAdI CRM_CREDIT_CHECK is to implement rules that control how the system performs credit checks. For example, you can implement rules that allow SAP Credit Management in SAP CRM to communicate with systems other than SAP Credit Management (FIN-FSCM-CR). BAdI CRM_CREDIT_CHECK is called when saving a sales order in SAP CRM.

The standard system contains the following implementations:

- ▶ Implementation for rule 01, which accesses the automatic credit check in SAP Credit Management (FI-AR-CR)
- ▶ Implementation for rule 02, which accesses the automatic credit check in SAP Credit Management (FIN-FSCM-CR)

Use rule 01 as an example when implementing a new rule. The main steps in rule 01 are as follows:

1. The interface to the external credit check is filled with data from the structure CT_ORDER_DATA. This structure contains SAP CRM data that is required for the credit check. As part of this process, the payer in SAP CRM is mapped to the customer in SAP ERP, and the SAP CRM organizational data is mapped to the organizational data in SAP ERP.
2. The external credit check is called up.
3. The structure CT_ORDER_DATA is filled with data from the interface to the external credit check. This data includes the result of the check as an error or warning message.

If you want to use SAP Exchange Infrastructure (XI) to link to an external credit management system, use rule 02 as an example when implementing a new rule. The main steps in rule 02 are as follows:

1. The interface to the external credit check is filled with data from the structure CT_ORDER_DATA. This structure contains SAP CRM data required for the credit check. As part of this process, the payer in SAP CRM is mapped to the business partner, and the sales organization is mapped to the credit segment in SAP Credit Management (FIN-FSCM-CR).
2. The external credit check is called up using SAP XI.
3. The structure CT_ORDER_DATA is filled with data from the interface to the external credit check. This data includes the result of the credit check as an error or warning message.

Rating Procedure and Credit Rating Check in SAP CRM

An organization has the capability to store the credit ratings of the customer (payer) in SAP CRM. This is one way of reducing the risk for the customer that doesn't have a good credit standing.

A given business partner rating can trigger the following actions:

- ▶ Writing a message to the application log as information for the employee
- ▶ Setting a system or user status at the header or item level
- ▶ Executing a customer-developed program (BAdI implementation), for example, a workflow

Say you want to set up some ratings for a potentially high-risk customer and inform the customer service representatives of the same. The following are configuration steps to achieve this functionality:

1. First, define the rating procedure. In SAP CRM, go to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CREDIT MANAGEMENT • CREDIT RATING CHECK IN SAP CRM • DEFINE RATING PROCEDURE (see [Figure 6.51](#)).

The screenshot shows the SAP CRM 'New Entries: Details of Added Entries' dialog. The 'Rating Procedure' field is set to 'ZCRETITRA'. The 'Rating Procedure' section contains the following fields:

Differentiation	2 With and Without Differentiation
BP Role	CRM003
<input type="checkbox"/> Entry Required	
<input type="checkbox"/> Standard Procedure	
Description	Customer CRDT Rating
Function Module	
Term	02 Short-term
<input type="checkbox"/> Accepted	
Description	Customer Credit Rating
<input type="checkbox"/> Internal	
<input type="checkbox"/> Rating Calculated	

Figure 6.51 Rating Procedure

[Figure 6.52](#) shows defining the rating and assigning it to the rating procedure.

The screenshot shows the SAP CRM 'New Entries: Details of Added Entries' dialog. The 'Rating Procedure' field is set to 'ZCRETITRA'. The 'Rating' field is set to 'ZRATING'. The 'Ratings' section contains the following fields:

Rank	03
Description	Potential Risk
Description	Potential Risk

Figure 6.52 Ratings Assignment to the Rating Procedure

Calculate Rating

The function for storing a function module to define special rating rules in the rating procedure is obsolete. SAP recommends implementing BAdI Calculate Rating instead of storing the function module. This BAdI is SAP's future solution for calculating ratings.

- In this step, you create a rating profile. In a rating profile, you can choose the required rating procedures and define the sequence in which the system should access the rating procedure. Go to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CREDIT MANAGEMENT • CREDIT RATING CHECK IN SAP CRM • CREATE RATING PROFILE. Figure 5.53 and Figure 5.54 show the valuation profile created and the valuation procedure assigned to the valuation profile respectively.

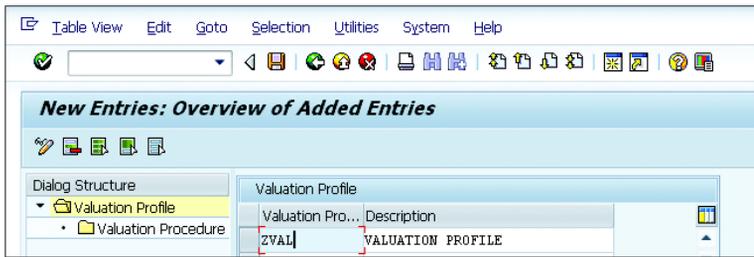


Figure 6.53 Valuation Profile



Figure 6.54 Rating Procedure Assignment to the Valuation Profile

- In this step, you can link the ratings of a business partner with a message, user statuses, a system reaction, and BAdI filter values for a BAdI implementation. In the credit rating check, you can automatically set user statuses at the header

or item level of the transaction regardless of the rating of the business partner. You can also issue messages that contain information on the rating and also set up system reactions for particular ratings. These reactions are controlled by the system status. In SAP CRM, go to CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • CREDIT MANAGEMENT • CREDIT RATING CHECK IN SAP CRM • DEFINE HANDLING OF RATINGS (see [Figure 6.55](#)).

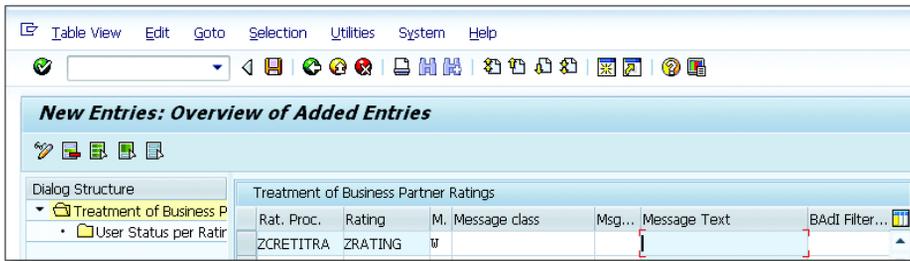


Figure 6.55 Treatment of the Business Partner Ratings

[Figure 6.56](#) shows the configuration around assigning the user status per rating. This configuration defaults the user status on the transaction when this configuration is set.

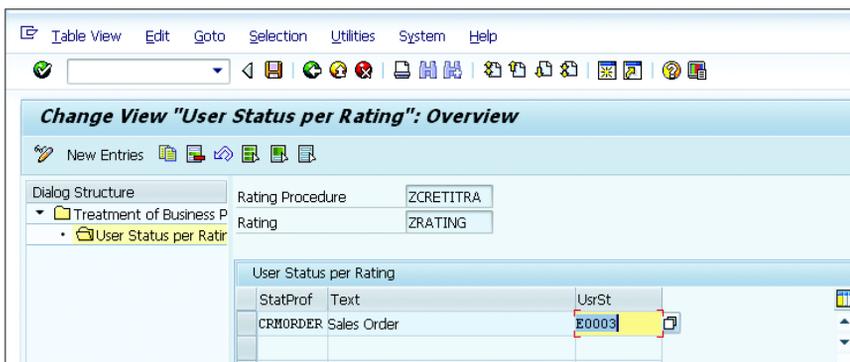


Figure 6.56 User Status Assignment per Rating

- In this step, assign the ratings profile to the transaction type. In SAP CRM, go to CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPE. Within this step, you assign the rating profile to the transaction type, which activates the rating check functionality for the transaction (see [Figure 6.57](#)).

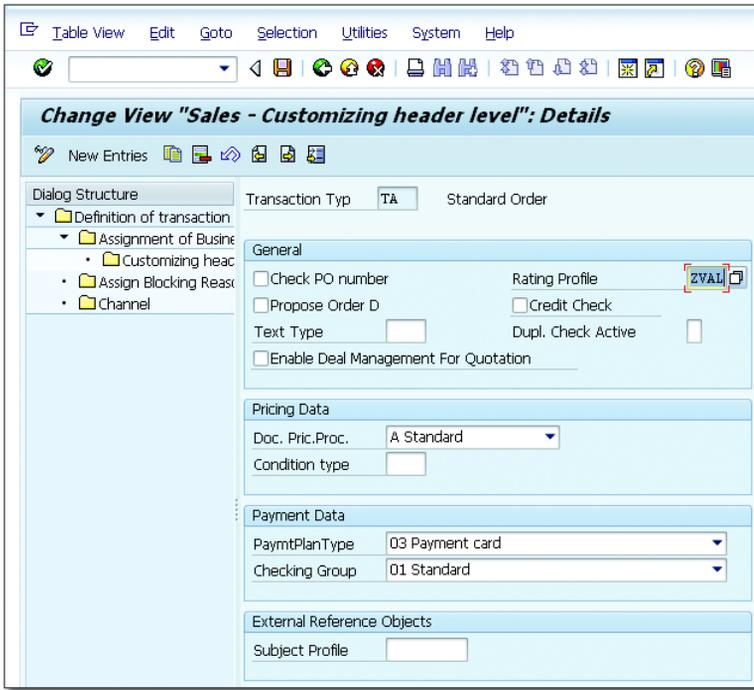


Figure 6.57 Rating Profile Assignment to the Transaction Type

5. Assign the rating procedure to the customer at risk in the business partner master data via Transaction BP, as shown in [Figure 6.58](#).

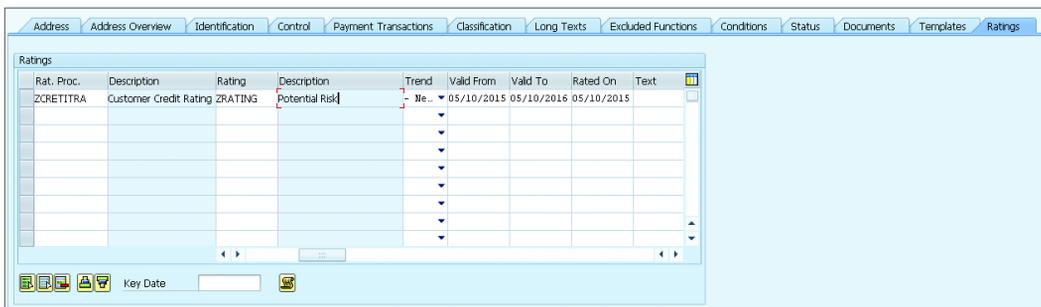


Figure 6.58 Rating Procedure Assignment to the Business Partner

6. Create the order with the same master data, and you'll see the CUSTOMER AT RISK is flagged with CREDIT RATING CHECK NOT OK (see [Figure 6.59](#)).

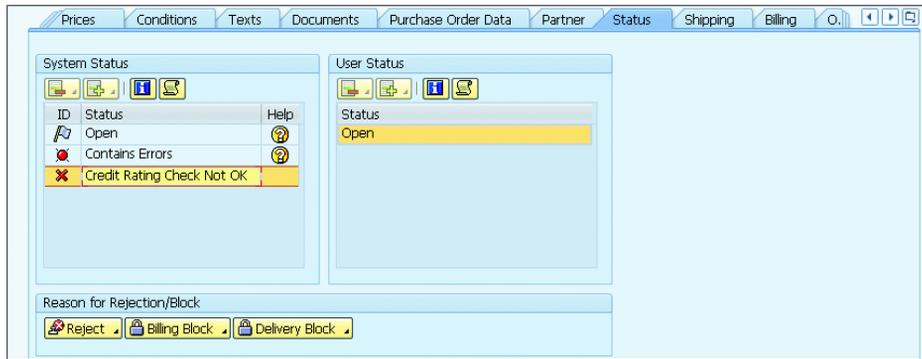


Figure 6.59 Order Status Showing Credit Rating Check Not OK

Assuming that the rating procedure and rating profile are already configured in the system (covered in the previous section), payer A is assigned with the rating profile as a potential risk customer. This customer never pays on time and always exceeds the credit limit.

We want to make sure that customer A is set to credit block as soon as the order is created for this customer. A customer calls to create an order, the customer service representative enters the order, and as the order is created and saved, the rating profile is determined from the transaction type.

The rating procedure is determined from the rating profile, which checks the business partner master data to determine if this procedure is assigned as a high-risk customer. The system determines that the customer is assigned as a potential risk customer, which is set with CREDIT RATING CHECK NOT OK. The order gets the credit status as ITEMS HAVE A RATING NOT OK, and the user status is set to the one configured, for example, customer credit evaluation. You can map and configure the user status to set the system status. After the credit block is set, the workflow triggers the supervisor to check the credit history for this customer and take necessary action whether to release credit from SAP CRM or not.

Note

You can trigger the workflow to send a document to a supervisor when a credit check for a transaction result has the status CREDIT CHECK NOT OK. Using the organizational data model, the system determines the supervisor of the employee who created the transaction and sends a workflow task to his inbox.

In Customizing, choose CUSTOMER RELATIONSHIP MANAGEMENT • BASIC FUNCTIONS • SAP BUSINESS WORKFLOW • PERFORM TASK-SPECIFIC CUSTOMIZING • SAP • CRM • CRM-BF • CR-BF-CM.

You've activated the linkage for the event Credit Check To Be Processed for Workflow WS 10000246.

Payment Card Processing

Payment card processing allows the organization to assign the credit card to the sales order and bill the customer based on the credit card being accepted from the clearinghouse.

For example, let's say a customer calls to create a sales order, and this customer is set with the payment card information in the master data. The sales order is created, and the payment card data is copied from the master data to the PAYMENT METHOD tab. You can run the preauthorization check based on the configuration. You can also enter the token number instead of the card number for security purposes.

Token Information

To get the token information, you have to run the credit card into a third-party tool such as *Paymetric*.

After the information regarding the credit card, CVV, and expiration date is added to the PAYMENT METHOD tab, the order is then saved.

On save, the system authorizes the payment card transaction with the clearinghouse. The clearinghouse sends the information back to the SAP CRM sales order in the form of denied or approved. If approved, the order is replicated to SAP ERP for further processing to create the delivery and invoice.

You can process the blocked documents using the Credit Analyst workbench. You can check and further process sales transactions that were blocked as a result of the credit limit check and credit rating check, as well as display both blocked and released sales orders in an overview list.

6.5.3 Configuring a Sales Order

The following is an example of a sales order (sales order transaction type: TA) configuration that shows the transaction type details and the business transaction categories assigned to it. Let's go through the configuration steps, including the item category configuration.

Define the Transaction Type

The sales order transaction type definition shown in [Figure 6.60](#) is similar to any business transaction in SAP CRM. Here, you can assign the LEADING TRANSACTION CATEGORY as BUS2000115 SALES and configure the product determination, profiles, and number range assignment.

The following options are available to configure for contract, quotation, and agreement determination (see [Figure 6.60](#)):

- ▶ **CONTRACT DETERM**
You can determine contracts based on the settings maintained in this field. The following options are available:
 - ▶ NO CONTRACT DETERMINATION
 - ▶ E – ONLY AT ITEM LEVEL: ASSIGN IMMEDIATE IF UNIQUE
 - ▶ F – ONLY AT ITEM LEVEL: ASSIGN WITH SELECTION OPTION
- ▶ **QUOT. DETERMIN.**
Similar to CONTRACT DETERM, you can determine the quotation if one exists with the following options:
 - ▶ NO QUOTATION DETERMINATION
 - ▶ E – ONLY AT ITEM LEVEL: ASSIGN IMMEDIATE IF UNIQUE
 - ▶ F – ONLY AT ITEM LEVEL: ASSIGN WITH SELECTION OPTION
- ▶ **AGREEMENT DETERMIN.**
This specifies whether the system should automatically find a sales agreement, and makes an assignment when you create a sales transaction. Following are the available options:
 - ▶ NO AGREEMENT DETERMINATION
 - ▶ E – ONLY AT ITEM LEVEL: ASSIGN IMMEDIATE IF UNIQUE
 - ▶ F – ONLY AT ITEM LEVEL: ASSIGN WITH SELECTION OPTION

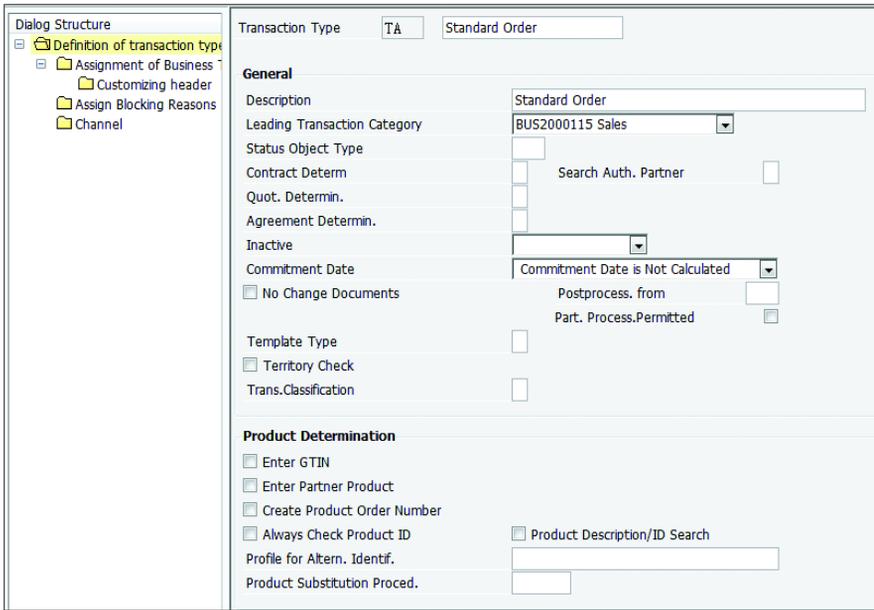


Figure 6.60 Sales Transaction Type TA

Only limited business transaction categories are assigned to the sales transaction type; in this case, it's BUS2000115 SALES and BUS2000126 BUSINESS ACTIVITY (see Figure 6.61).

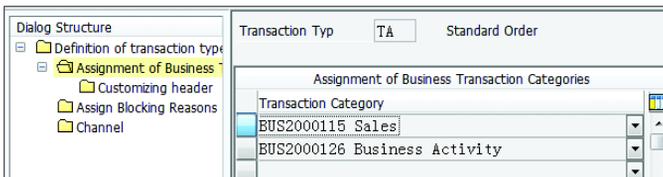


Figure 6.61 Business Transaction Categories

Header Configuration

The sales order header has the following configurable fields (see Figure 6.62):

► CHECK PO NUMBER

The CHECK PO NUMBER option helps to determine whether the same PO number exists for multiple orders. You'll receive the warning message on the sales order when the same PO number exists for multiple orders.

- ▶ **PROPOSE ORDER D**
This flag will determine the purchase order date as the order creation date. You can change the date if necessary.
- ▶ **RATING PROFILE**
This determines the rating procedure assigned to the business partner and checks whether the customer is a high-risk customer while the orders are being created. It checks the credit rating check of the payer of an order.
- ▶ **CREDIT CHECK**
If you activate this checkbox, the credit check is performed on the sales order when the order is saved. The complete credit check functionality will work if the item category settings are appropriately configured by assigning a credit group to the item category.
- ▶ **TEXT TYPE**
This field is used in the Web Channel environment where you want to populate the text type assigned in this field on the Web Channel application.
- ▶ **DUPL. CHECK ACTIVE**
This specifies whether a product can only be entered once in a sales transaction. When the same product is entered several times, you receive a warning message.
- ▶ **ENABLE DEAL MANAGEMENT FOR QUOTATION**
If you set the indicator, you can use SAP Price and Margin Management to check existing pricing and agreement data when preparing price quotations for approval in deals.
- ▶ **PRICING DATA**
The document pricing procedure is used to determine the pricing procedure on the sales order, whereas the condition type field on the pricing data is used when you want to display a specific condition type on the **WEBCIENT (IC WEBCIENT) ITEM OVERVIEW** screen.
- ▶ **PAYMENT DATA**
If you want to use the payment functionality via payment card or cash on delivery, then you need to populate this setting accordingly.
- ▶ **SUBJECT PROFILE**
This is used to configure the reason for the status on the sales order. For example, if the sales order is rejected, you can populate the reason for the rejection status.

The screenshot shows the 'Transaction Type TA Header Details' dialog box. On the left, the 'Dialog Structure' tree is expanded to 'Definition of transaction type' > 'Assignment of Business' > 'Customizing header'. The main area is divided into several sections:

- Transaction Type:** TA, Standard Order
- General:**
 - Check PO number
 - Propose Order D
 - Text Type: []
 - Enable Deal Management For Quotation
 - Rating Profile: ZVAL
 - Credit Check
 - Dupl. Check Active: []
- Pricing Data:**
 - Doc. Pric.Proc.: A Standard
 - Condition type: []
- Payment Data:**
 - PaymtPlan Type: 03 Payment card
 - Checking Group: 01 Standard
- External Reference Objects:**
 - Subject Profile: []

Figure 6.62 Transaction Type TA Header Details

Item Category Configuration

When you add items to the sales order transactions, you can have different controls at the item versus the header level. The OBJECT TYPE for the sales order item category should be BUS2000131 CRM SALES ITEM (see [Figure 6.63](#)).

The screenshot shows the 'Item Category Definition' dialog box. On the left, the 'Dialog Structure' tree is expanded to 'Definition of Item Categories' > 'Assignment of Business' > 'Customizing Item'. The main area is divided into several sections:

- Item Category:** TAN, Sales Item
- General:**
 - Description: Sales Item
 - Object Type: BUS2000131 CRM Sales Item
 - Assign BW / CO: []
 - Status Object Type: []
 - Inactive
 - Relev.wgt/vol.
 - Date & Qty Are Fxed
 - Usage Object: 0 Item Contains Product, But Not Individu
 - Preceding Ref. Object Type: []
 - Package Explosion
 - Preceding Ref. Mandatory
 - Territory Check Not Required
- Profiles:**
 - Text Det.Proc.: ORDER001, Sales Order Item
 - PartnerDetProc.: 10000001, Standard Item
 - Status Profile: CRMORD_I
 - ATP Profile: No Availability Check
 - Org. Data Prof.: 0000000000007, Standard Org. Data Profile (Item) Sales
 - Date Profile: []
 - Action Profile: []
 - AP Procedure: []

Figure 6.63 Item Category Definition (1)

As shown in [Figure 6.63](#), the following fields need to be configured:

- ▶ **RELEV. WGT/VOL.**
If the relevant weight and volume checkbox is activated, the system will calculate the product weight and volume on each line item.
- ▶ **DATE & QTY ARE FIXED**
You can mark this option if you don't want to change the ATP result you received when creating the sales order. For example, if a customer orders a certain product, and ATP comes back with the available quantity and date, and these quantities and dates are fixed at the schedule line, then the dates and quantity remain unchanged even after triggering another ATP check. When you run a backorder processing job, these orders won't be picked up to reschedule the line items because these are fixed.
- ▶ **ATP PROFILE**
This determines whether you want to carry out the availability check or not. If the ATP check happens in SAP SCM, then the same ATP profile is configured as a requirement profile with different configuration attributes assigned to it based on your specific business requirement.

Next, define the structure of the item category. The following fields must be configured (see [Figure 6.64](#)):

- ▶ **STRUCTURE SCOPE**
SAP CRM allows a bill of materials (BOM) to explode and is limited to a single-level explosion. If an item consists of a product with a structure, you can specify whether this structure should be exploded automatically in the business transaction as a main item with one or more subitems.
- ▶ **DELIVERY GROUP**
This helps you group the main and subitems in one delivery document.

Structure	
Structure scope	Do not explode material structure
Delivery Group	Do not Create Delivery Groups
Configuration Data	
Var. matching	Variant matching not allowed
Var.match.act.	No replacement
Print Filter ID	<input type="checkbox"/>
Default Config.	Maintain Configuration on User Interface

Figure 6.64 Item Category Definition (2)

Further, you must also configure the billing, pricing, and quotation data for the item category as well. Configure the following important fields (see [Figure 6.65](#)):

▶ **BILLING DATA/CREDIT**

If you're using the SAP CRM billing functionality, then configure the billing data fields to be relevant for billing, and populate the values based on your business needs. You have options of configuring the MILESTONEBILLING and INT. BILLING whether it's an external or SAP CRM billing relevance.

▶ **CREDIT GROUP**

This field is used to activate the credit check in the business transaction. After the credit group is configured, you can assign the credit group to the item category. CREDIT CHECK functionality is covered earlier in this chapter under SAP Credit Management.

▶ **PRICING DATA**

Pricing data is used to determine and activate the price in any business transaction. The configuration details were covered [Section 6.4](#) on quotations, and the functionality is similar in all SAP CRM business transactions.

▶ **DELIVERY UNIT**

When a quantity is entered at the item level, the system checks whether the quantity is a multiple of the delivery unit. With this indicator, you specify that this quantity should be rounded to the next suitable multiple. The delivery unit for rounding is maintained in the sales area data of the product master.

▶ **MINIMUM QUANTITY**

This specifies whether the system automatically increases a quantity if it falls short of the minimum quantity defined in the product master data.

Item category determination is based on the transaction type, item category group, and item category usage. This will determine the main item category, and you can add an alternate item category based on your business needs. Use the following path mentioned to configure the item category determination: SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORY DETERMINATION.

Item Category	
Item Category	TAN Sales Item
Billing Data/Credit	
Bill. Relevance	A External Billing
MilestoneBilling	No Specific Calculation Type
Int. Billing	External
Credit Group	
Valuatn Profile	
Pricing Data	
<input checked="" type="checkbox"/> Pricing-rel.	
Statist. Value	System will copy item to header totals
Pricing Indicat.	X Active
Pricing Process	Standard
Condition Type	
Quotation Data	
Relevance for Quotation	3 Initially a Sales / Service Transaction
Subsequ. processing	Quotation status is reset
Order Probability %	70
ATP profile: quot.	No Availability Check
Rounding	
<input type="checkbox"/> Delivery Unit	<input type="checkbox"/> Minimum Quantity

Figure 6.65 Customizing the Item Category

6.5.4 SAP ERP Sales Order

An SAP ERP sales order is an order that is created in an SAP CRM system but doesn't get saved in an SAP CRM database. The order is instead saved directly in the SAP ERP system. An SAP ERP sales order uses Lean Order (LORD) APIs to create and save the order in an SAP ERP system.

If your company has made a significant investment in an SAP ERP system and wants to leverage SAP CRM functionality keeping SAP ERP intact, then the SAP ERP sales order makes more sense. Consider the following points when choosing SAP ERP sales orders over SAP CRM sales orders:

- ▶ If the order in your business scenario doesn't have many line items, for example, orders less than 10 line items, then consider using the SAP ERP sales order functionality.
- ▶ If the functionality on the sales order you need is very lean in nature and doesn't require any major development or change in the SAP standard behavior, consider using the SAP ERP sales order functionality.

- ▶ If the manual order creation or change volume isn't very high, consider using the SAP ERP sales order functionality. Transaction volume like this should be considered when making your decision.
- ▶ If sales representatives want to access marketing and sales functionality from one screen, and your sales order is created in SAP ERP, then consider using the SAP ERP sales order functionality.

SAP ERP Sales Order Functionality

Refer to SAP Note 1236015 – ERP Sales Document in SAP CRM, which states the functionality provided and the limitations of using the SAP ERP sales order functionality.

Figure 6.66 shows a diagram of the lead to cash process flow for SAP ERP.

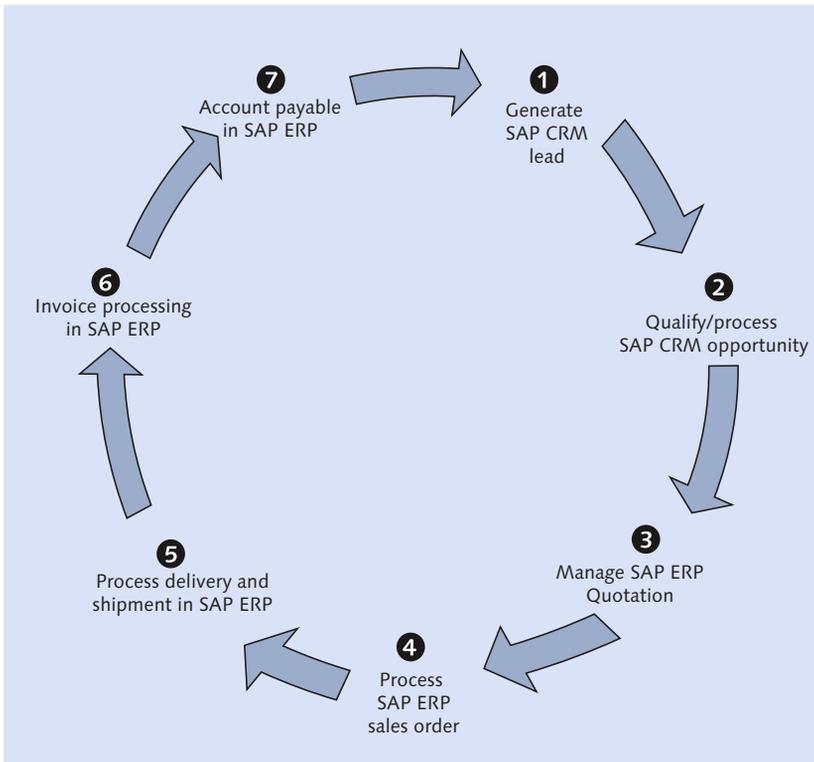


Figure 6.66 Lead to Cash Process Flow

The SAP CRM lead and opportunity are linked to the quotation and sales order in SAP ERP. This is followed by fulfillment and invoicing in SAP ERP. The SAP ERP quote and sales order are created from SAP CRM.

The following configuration steps are required to set up an SAP ERP sales order:

1. Navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SALES TRANSACTIONS • DEFINE PROFILES FOR ERP SALES TRANSACTIONS.
2. Assign the SAP ERP sales order profile with the RFC trusted connection to the SAP ERP system, and assign it to the SAP ERP document types that you want to create from SAP CRM.
3. Maintain the linkage, or create SAP ERP transactions from an SAP CRM opportunity. To activate this, you need to maintain cross-system copying of the sales transaction and item categories in the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR ERP TRANSACTIONS MAINTAINED VIA CRM • CROSS-SYSTEM COPYING OF TRANSACTION TYPES.
4. Configure the settings necessary to activate the connection between the SAP CRM opportunity and the SAP ERP quotation. You can do this by navigating to the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR ERP TRANSACTIONS MAINTAINED VIA CRM • CROSS-SYSTEM COPYING OF ITEM CATEGORIES.
5. Activate the SAP ERP sales order work center in the business role that you're using based on your business needs.

6.5.5 Data Exchange

A sales orders created in SAP CRM can be replicated to the backend of SAP ERP, which allows you to process further downstream processes such as delivery, shipment, and invoices. The system status for delivery and invoicing is then replicated back to SAP CRM sales orders.

You must complete the basic configuration around the transaction type and item category in both SAP CRM and SAP ERP to make the replication or data transfer successful. Specifically, there are three different data exchange scenarios that can be used based on your system release. The following sections look at these in closer detail.

Standard Data Exchange Scenario

The standard scenario corresponds to the delivered data exchange scenario. If no different scenario is activated in table `CRMPAROLT`, the standard scenario is active by default. Following are some key points to consider if you keep the system settings as they are and don't enter any scenarios in SAP CRM table `CRMPAROLT`:

- ▶ You can transfer sales transactions from SAP CRM Enterprise to the SAP ERP system using SAP CRM middleware.
- ▶ The orders created in the SAP CRM system replicate to the SAP ERP system. If you change this order in SAP ERP, which is created in SAP CRM, then the changes won't replicate back to the SAP CRM system. This may cause inconsistency in the transaction data between SAP ERP and SAP CRM.
- ▶ You can create sales orders with reference to quotations and trigger subsequent processes for orders in the SAP ERP system.
- ▶ You can create quotations and sales orders in the SAP ERP system that are transferred to SAP CRM. The documents are only displayed in the SAP CRM system and can't be edited. Any further changes to the orders created in the SAP ERP system are replicated to the SAP CRM system, which can be viewed but can't be edited in the SAP CRM system.
- ▶ You can use the distribution status in the transaction to check whether the transfer to the SAP ERP system was successful. Error messages regarding the transfer are displayed in the application log.

Interdependent Changes

In the interdependent change scenario, you can create, edit, and change the orders in both the SAP ERP system and the SAP CRM system. Interdependent changes are also commonly referred to as Scenario A. This scenario is delivered by SAP from ERP release 4.7 and SAP CRM release 4.0.

The following settings need to be performed to activate the interdependent change scenario:

- ▶ Settings in SAP CRM Enterprise: table `SMOFPARSFA`
 - ▶ Key: `R3A_SALES`
 - ▶ Parameter name 1: `INT_CHANGE_ORDER`

- ▶ Parameter name 2: <sales document type>; for example, TA
- ▶ Parameter value 1: A for activating the scenario for interdependent changes for <sales document type>
- ▶ Parameter value 2: A for SAP APO activation
- ▶ Settings in the SAP ERP system: table CRMPAROLTP
 - ▶ Parameter name: CRM_SCENARIO
 - ▶ Parameter name 2: INT_CHANGE_ORDER
 - ▶ Parameter name 3: <sales document type>; for example, TA
 - ▶ Parameter value: A for activating scenario A for <sales document type>

Certain restrictions apply when you activate Scenario A. Consider the following points before activating this functionality:

- ▶ Billing is only possible in an SAP ERP system and not with SAP CRM billing.
- ▶ The use of rebate conditions isn't supported.
- ▶ The use of objects isn't supported.
- ▶ Credit approval and rejection, as well as new credit checks, can only take place in one system—either the SAP CRM or the SAP ERP system.
- ▶ An availability approval from SAP CRM with SAP APO isn't supported. Therefore, a rules-based availability check in SAP APO isn't possible either. You can only perform an availability check in the SAP ERP system.
- ▶ Maintenance of combined business transactions (quotation and order items in one transaction) isn't supported by the SAP ERP system. You can only transfer business transactions that contain either only order items or only quotation items.

As of SAP CRM release CRM2007, only the data exchange scenario A (interdependent changes) is supported in addition to the standard data exchange scenario.

Interdependent Change Scenario

The interdependent change scenario activates the ATP triangle scenario in the SAP CRM system. For further details see SAP Note 642944 – Interdependent Changes in Sales Orders, and SAP Note 889051 – Scenario A: Overview and Settings.

Defining SAP ERP as the Leading System

The data exchange scenarios X, Y, and Z allow you to define your SAP ERP system as the leading business system and make changes to sales transactions there only.

The name of scenarios X, Y, and Z is based on the corresponding parameter values that must be maintained in table `CRMPAROLT` for the activation of the individual scenarios (See SAP Note 520045 – Change of CRM Documents in the R/3 Backend System, Part 2, and SAP Note 541113 – Data Exchange Scenarios for Orders [CRM–R/3]).

Table 6.1 is the tabular form of the scenarios and SAP ERP/SAP CRM release applicable. For SAP CRM 4.0 SP04 release or higher and SAP ERP 4.7, you can't use data exchange Scenarios X, Y, and Z.

Release	ERP 4.0B	ERP 4.5B	ERP 4.6B	ERP 4.6C	ERP 4.7	ERP 5.0	ERP 6.0
CRM 3.0	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z
CRM 3.1	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z
CRM 4.0	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	A	A	A
CRM 5.0	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	A	A	A
CRM 5.1	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	A	A	A
CRM 5.2	X, Y, Z	X, Y, Z	X, Y, Z	X, Y, Z	A	A	A
CRM 6.0	–	–	–	–	A	A	A

Table 6.1 Data Exchange Scenarios with SAP CRM and SAP ERP Releases

The include `CRM_SCENARIO_CON` identifies 10 possible scenario types at different field positions that are shown in the scenario identity of table `CRMD_ORDERADM_H` when the order is created in SAP CRM. You can identify the scenarios based on the following information whether the ATP is a direct update scenario or a triangle scenario and whether the order is originated in SAP CRM or SAP ERP (see [Figure 6.67](#)).

[Figure 6.68](#) shows the `SCENARIO` field in the SAP sales order header table. This helps show whether the order is originated from SAP CRM or SAP ERP.

Dictionary: Display Table

Transp. Table: CRMD_ORDERADM_H Active

Short Description: Business Transaction

Attributes | Delivery and Maintenance | Fields | Entry help/check | Currency/Quantity Fields

Srch Help | Predefined Type | 1 / 118

Field	Key	Incl...	Data element	Data Type	Length	Decl...	Short Description	Group
.INCLUDE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CRMT_OBJECT_KEY	STRU	0		One Order: Key Fields	
CLIENT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3		Client	
GUID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CRMT_OBJECT_GUID	RAW	16		GUID of a CRM Order Object	
.INCLUDE	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_ORDERADM_H	STRU	0		General Header Data - Structure of External Fields	
OBJECT_ID	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_OBJECT_ID	CHAR	10		Transaction ID	
PROCESS_TYPE	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_PROCESS_TY	CHAR	4		Business Transaction Type	
POSTING_DATE	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_POSTING_DA	DATS	8		Posting Date for a Business Transaction	
DESCRIPTION	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_PROCESS_DE	CHAR	40		Transaction Description	
DESCR_LANGUAGE	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_PROCESS_DE	LANG	1		Language Key of Description	
LOGICAL_SYSTEM	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_LOGSYS	CHAR	10		Logical System	
CRM_RELEASE	<input type="checkbox"/>	<input type="checkbox"/>	SAPRELEASE	CHAR	10		SAP Release	
SCENARIO	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_SCENARIO	CHAR	10		Scenario Identity	
TEMPLATE_TYPE	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_TEMPLATE_T	CHAR	1		Template Type of CRM Transaction	
.INCLUDE	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_ORDER_EDIT	STRU	0		Time and User of Last Transaction Processing	
CREATED_AT	<input type="checkbox"/>	<input type="checkbox"/>	COMT_CREATED_AT	DEC	15		Created At (Output in User Time Zone)	
CREATED_BY	<input type="checkbox"/>	<input type="checkbox"/>	CRMT_CREATED_BY	CHAR	12		User that Created the Transaction	

Figure 6.67 Order Header Table Showing the Scenario Identity Field

Table Entry | Edit | Goto | Settings | Environment | System | Help

Table CRMD_ORDERADM_H Display

Check Table...

CRM RELEASE	BBPCRM 710
SCENARIO	AAX

Figure 6.68 Business Scenario Field in the SAP CRM Order Header Table

The SCENARIO field in the order header table identifies the ATP scenario and identifies whether the sales order was originally created in SAP CRM or SAP ERP. The field length is 10 and program CRM_SCENARIO_CON helps to explain each position definition and identify the business scenario.

By default, SAP CRM is configured to use direct update in the ATP scenario. Based on the standard data exchange scenario, you can create the sales order in either SAP ERP or SAP CRM.

Figure 6.69 shows the program name and details around the SCENARIO field.

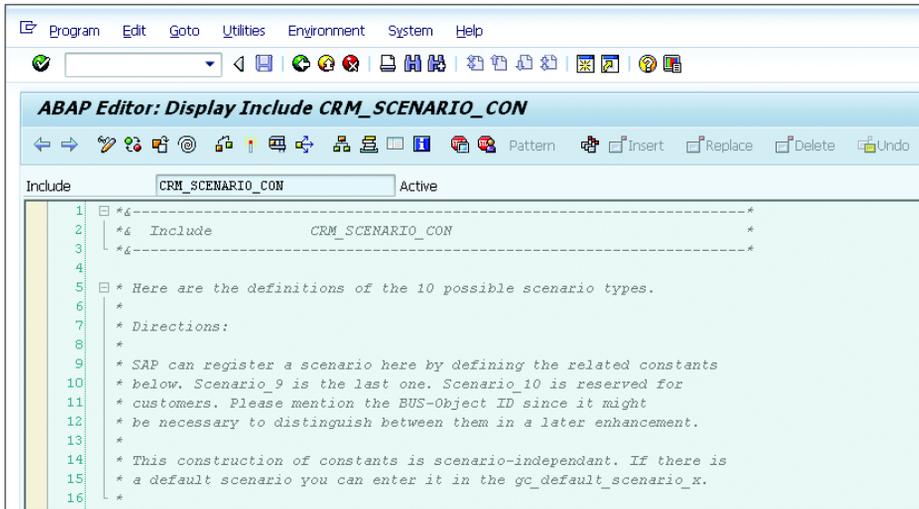


Figure 6.69 Include CRM_SCENARIO_CON Details

The following information found on the screen in [Figure 6.69](#) provides you with the definition of each character within the SCENARIO field shown previously in [Figure 6.68](#):

- ▶ NUMBER 1 = ATP
 - ▶ APO-ATP scenarios: BUS2000115
 - ▶ Triangle is the scenario used until 2.0C or if the user has activated the flag for the old scenario.
 - ▶ Direct update is the new scenario used in 3.0A.
 - ▶ DIRECT_UPD_FC is for the FC-system—no triangle scenario is possible.
 - ▶ A stands for direct update scenario.
 - ▶ Blank stands for triangle scenario.
- ▶ NUMBER 2 = ORIG

To differentiate where a sales document was originally created:

 - ▶ A: Document is created in SAP CRM.
 - ▶ B: Document was created in Sales and Distribution/Financial Accounting (SD/FI).
 - ▶ C: Document was created in SAP CRM mobile client.

The following are only for inter-usages for SAP CRM 3.1:

- ▶ D: Order split scenario.
- ▶ E: Order split won't be executed.
- ▶ F: There exists a back office adapter.
- ▶ NUMBER 3 = MAINTAIN

To differentiate if the CRM_ORDER_MAINTAIN will be called or not:

 - ▶ YES: Maintain is called.
 - ▶ NO: Maintain isn't called.
- ▶ NUMBER 4 = SD CHANGED

To mark an SAP CRM order that has been changed in SD—no further maintenance in SAP CRM is possible.
- ▶ NUMBER 5 = USED BY INDUSTRIAL SOLUTIONS

Number 6 to Number 9 haven't yet been used, and Number 10 is reserved for customer purposes.

After the order is replicated to SAP ERP, the ORIGINAL SYSTEM field on the VBAK order header table will show you the information with the release and transaction control (see [Figure 6.70](#)).



Group description	Cell Content...
Original system	CRMS00AA
Indicator	

Figure 6.70 SAP ERP Sales Order with Release and Transaction Control Information

The information on this field shown in [Figure 6.70](#) includes the following:

- ▶ **Position 1 – 3**
Source system (e.g., SAP CRM)
- ▶ **Position 4 – 6**
Source system release
- ▶ **Position 7**
Indicator for controlling availability check and handling of requirements:
 - ▶ (Blank): This corresponds to the triangle scenario where the ATP triggers in SAP ERP, and the temporary confirmation is released from the SAP APO system.

- ▶ Value "A": This corresponds to the direct update scenario where the sales order requirements aren't saved in SAP ERP.
- ▶ **Position 8**
This position isn't used.
- ▶ **Position 9**
This position isn't used.

Data Exchange between SAP CRM On-Premise and SAP CRM Mobile

Sales transactions such as quotations and sales orders can be replicated back and forth from SAP CRM Mobile to SAP CRM on-premise. If you've implemented SAP CRM Mobile, then it becomes easy to access the sales information about a specific customer anytime and anywhere.

An important prerequisite on activating the data exchange between SAP CRM on-premise and SAP CRM Mobile is to activate the mobile bridge for the sales document when setting up SAP CRM Mobile Sales. Every change made to a transaction is exchanged between systems.

This section gives you a good understanding of the different key functionality available with SAP CRM for sales orders. In a real business scenario, this topic will help you differentiate the SAP ERP sales order from the SAP CRM sales order and will help you decide which one to use based on your business needs. Data exchange for sales orders were also covered in this section, where we described different data exchange scenarios to understand the system capability and behavior when it comes to the sales order replication and updates from SAP CRM and SAP ERP.

6.6 Summary

This chapter discussed the sales process flow with examples of contracts, quotations, and sales orders. The chapter also covered the sales process within SAP CRM Sales for Activity Management, Opportunity Management, sales contracts, quotations, and sales orders. In the next chapter, we'll cover the SAP CRM Service module.

Maintaining and fostering customer relationships is essential in staying competitive as a company. In this chapter, we'll discuss SAP CRM Service and the service-based functionalities it provides.

7 Service

It's critical for every company to retain existing customers and grow their database with new customers. Social media and the Internet have made it possible for customers to contact companies in real time for any product/company information, demands, or complaints. This connectivity has caused the service industry to grow at a rapid pace.

To address this growth, SAP CRM Service provides a range of functionalities to use the complete service cycle in one solution. This includes the initial creation of warranties and service contracts, followed by service quotations, service orders, complaints and returns, and service confirmations. In this chapter, we'll discuss the SAP CRM Service processes and functionalities that can be implemented in various verticals of an organization.

7.1 Installed Base Management

An *Installed Base* (commonly referred to as *IBase*) represents the number of objects installed at a customer's location. This can be in the form of machinery, software, or any other device that a customer purchased from an organization. An IBase is a hierarchical structure that imitates the installation of a purchased device at the customer site, with each of the components under the IBase tree/hierarchical structure and additional details assigned at each of the component levels. *Component levels* include the address, service contracts, qualification requirements, service transactions, service levels, and service cases.

IBase components include products, text, objects, and structure gaps. [Figure 7.1](#) is a diagram of an IBase in SAP CRM.

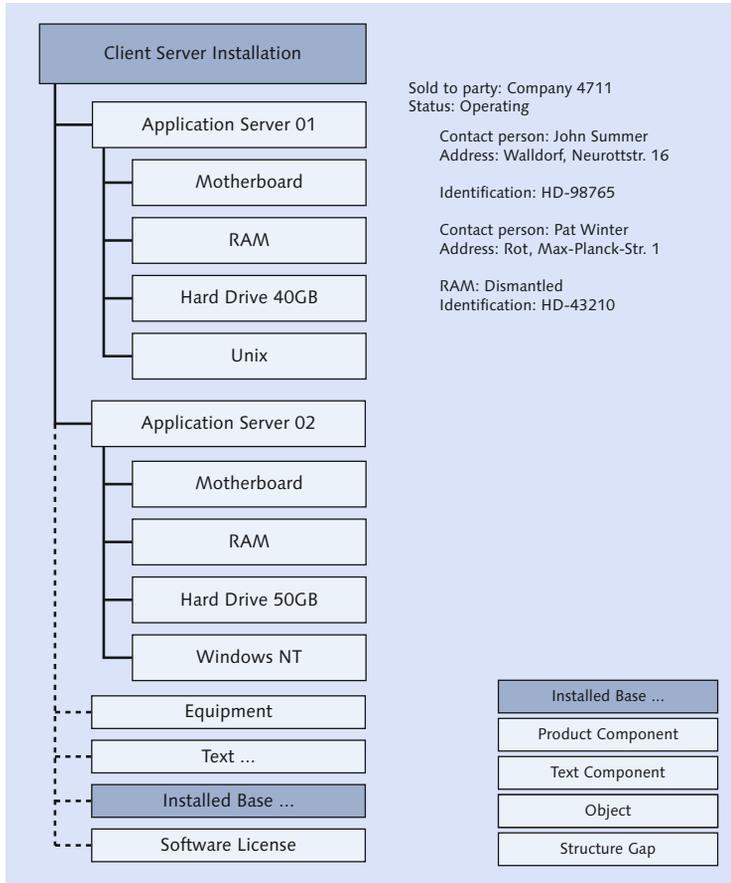


Figure 7.1 Installed Base

Because an IBase is managed by an organization, the product requirement from the customer needs to be understood beforehand. Managing customer repositories gives more information on customer needs. Organizations work hard to achieve maximum customer satisfaction. To do this, companies are taking a more proactive approach in their services. An IBase provides an organization with a 360-degree view of their products from a customer's location. This allows an organization to track its service footsteps. Additionally, maintaining the IBase in an SAP CRM system helps the service manager assign a service technician with the parts needed to fix any kind of problem with the product being sold. This reduces the turnaround time with customer satisfaction. An IBase can be anything as small as a computer or printer to bigger machinery such as an airplane.

To create an IBase in SAP CRM, you can either replicate the equipment from SAP ERP to SAP CRM or create the IBase manually in SAP CRM. The following sections discuss the various IBase components, configuration steps, assigned objects, and technical object replication procedures in SAP CRM Service.

7.1.1 Components

When creating an IBase in SAP CRM, you should have a thorough understanding of each of the parts and components that have been sold to the customer. As part of the planning phase for IBase, you must decide the following:

- ▶ How you'll maintain the tree structure for IBase
- ▶ How many components are involved in building the IBase
- ▶ What kind of information is needed to enter in the IBase (i.e., parties involved, name and address, etc.)

Determining the correct object family from a list of objects used in the IBase is important. When you have this information ready, you can start building an IBase.

The following are different types of components within an IBase:

- ▶ **Product components**
You can add information such as name and address, parties involved, warranties, and so on to the product component.
- ▶ **Text components**
To designate the IBase structure at different levels, it's important to add the text to understand the flow. Like product components, you can assign various relationships to the text components.
- ▶ **IBase**
You can assign another IBase to the same IBase you're building.
- ▶ **Objects**
Objects are unique identifiers to IBase components. You can't assign the same objects at multiple levels within the same IBase component. A typical example of an object is an IP address for a computer.
- ▶ **Structure gap**
An IBase can be dismantled for repairs or exchanged. Even though the IBase

components are dismantled, you can still use the structure gaps to keep information about characteristics and placement in the structure of an IBase component.

Figure 7.2 shows the IBase header details, which consist of different IBase relationships and components. The IBase header has relationships such as parties involved, customer name and address, service contract, attachments, qualification requirement, service transaction, change history, and service level. The information maintained in the relationship provides more information on the customer site IBase.

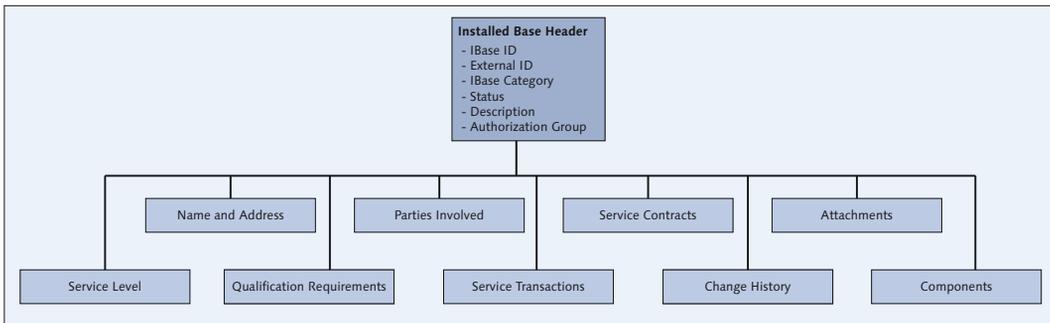


Figure 7.2 Installed Base Details

Figure 7.3 is another example of an IBase created directly in the SAP CRM system. In this example, the IBASE CATEG. is INSTALLED BASE, and the tree structure consists of TEXT COMPONENTS to which a product component and an object are assigned.

Function	ID	Name	Address	Main...
Sold-To Pa...	1004418	Demo Customer	7160 Chadwood Lane \4323...	

Item	Sort String	Text
		Computer
		Copier

Figure 7.3 Installed Base Example

The SOLD-TO PARTY is assigned at the highest node. You can create the tree structure based on the product you're selling, and you can assign various relationships to it such as service contracts, attachments, qualification requirements, service levels, and so on.

Just like an account fact sheet, an IBase fact sheet is also available out of the box with SAP CRM, providing information on service transactions such as service contracts, open service items, latest closed service orders, knowledge articles, and parties involved.

You can also assign warranties to the IBase, product component, or object. For assigning warranties, you need to create the warranty product, define the warranty category, and assign the warranty set types to the warranty category (see [Figure 7.4](#)).

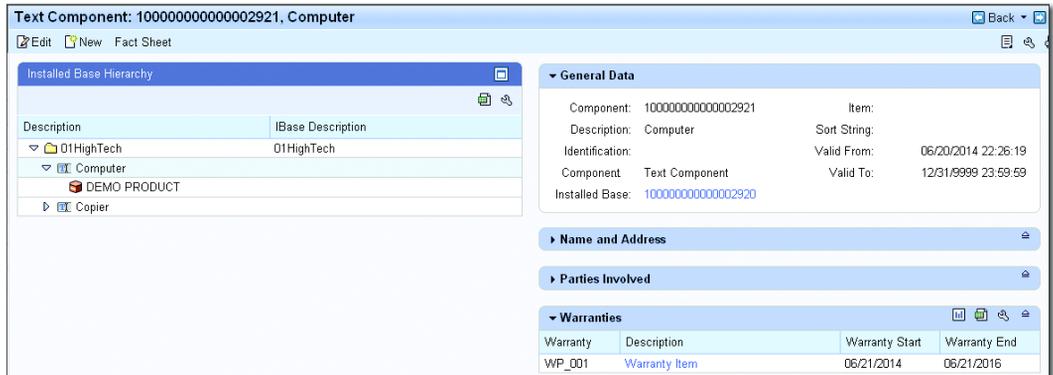


Figure 7.4 Warranty Assigned to the IBase

You also need to assign the warranty hierarchy to the product type warranty via the configuration path, SPRO • CROSS-APPLICATION COMPONENTS • SAP PRODUCT • PRODUCT CATEGORY • ASSIGN CATEGORY HIERARCHIES TO APPLICATIONS.

When the warranty item is created after undergoing the configuration steps, you create the warranty item and assign it to the IBase, as shown in [Figure 7.4](#).

7.1.2 Configuring an Installed Base

In this section, we'll discuss the different steps involved in configuring an IBase.

Define Installed Base Category and Installation Rules

To configure an IBase, you first need to define the IBASE CATEGORY and INSTALLATION RULES, as shown in [Figure 7.5](#). SAP-delivered IBase categories include the following:

- ▶ 01: IBase
- ▶ 02: Variant configuration
- ▶ 03: Object structure
- ▶ CM: Case Management
- ▶ EQ: Equipment downloaded from SAP ERP
- ▶ FL: Functional locations downloaded from SAP ERP
- ▶ IT: Telephone numbers in the telecommunications industry
- ▶ IU: Technical objects for IS-U

To define the IBase category and installation rules, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • INSTALLED BASE • INSTALLED BASE CATEGORY • DEFINE INSTALLED BASE CATEGORY AND INSTALLATION RULES.

Change View "IBase Category": Overview

Dialog Structure: IBase Category, Permitted Components, Installation Rules

IBase Category	Maint.	Chge.doc	Type description
01	Maintenance Allowed Using Ir...	✓	Installed Base
02	B No Display/Maintenance Us...	✓	Configuration
03	Maintenance Allowed Using ...	✓	Object Structure
CM	Maintenance Allowed Using ...	✓	Classif. Catalog for Cases
EQ	Maintenance Allowed Using ...	✓	IBase Category for Equipment
FL	Maintenance Allowed Using ...	✓	Functional Location
IT	Maintenance Allowed Using ...	✓	IS-T Telephone Numbers
IU	A Only Display Allowed Usin...	✓	Technical Objects for IS - U

Figure 7.5 IBase Category

For each of the IBase categories, you can define the PERMITTED COMPONENTS to determine which components can be assigned to which IBase category (see [Figure 7.6](#)).

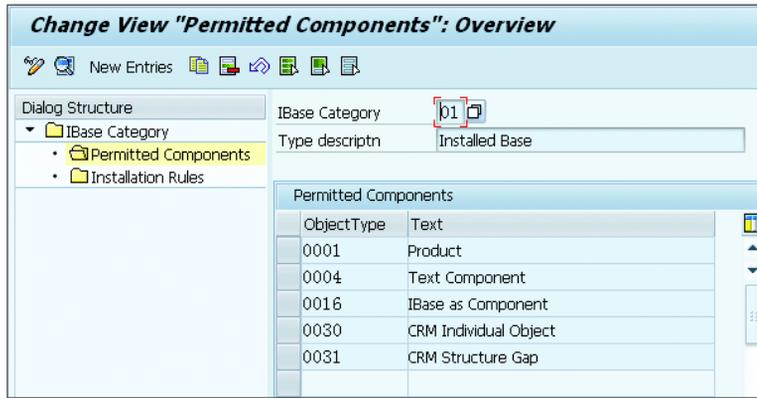


Figure 7.6 Permitted Components

Activate Partner and Address Inheritance

Next, we need to activate the partner and address inheritance. Follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • INSTALLED BASE • INSTALLED BASE CATEGORY • ACTIVATE PARTNER AND ADDRESS INHERITANCE.

If the PINHERIT. (partner inheritance) and ADRINHERIT (address inheritance) checkboxes are active, then the partner and address added at the IBase header is inherited to the lower levels in the tree structure. You can confirm the account by searching the IBase in those cases where you've assigned the partner to the IBase header (see Figure 7.7).

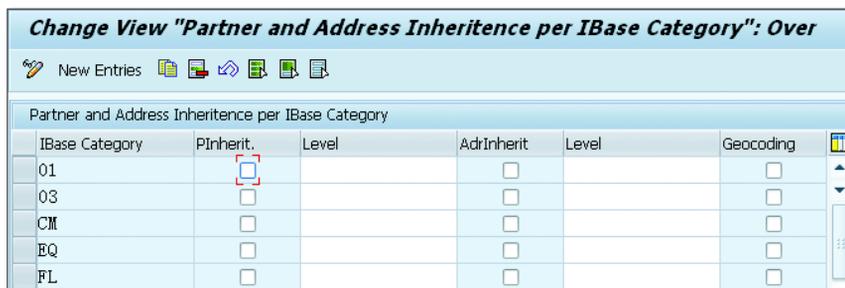
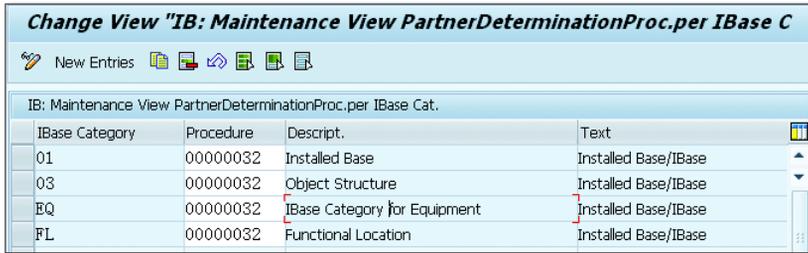


Figure 7.7 Partner and Address Inheritance per IBase Category

Assigning a Partner Determination Procedure to an Installed Base Category

You can assign a specific partner determination procedure to the IBase category by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • INSTALLED BASE • ASSIGN PARTNER DETERMINATION PROCEDURE TO INSTALLED BASE CATEGORY. This allows you to choose specific partners while assigning the partner to the IBase (see [Figure 7.8](#)).



Change View "IB: Maintenance View PartnerDeterminationProc.per IBase C"				
IB: Maintenance View PartnerDeterminationProc.per IBase Cat.				
IBase Category	Procedure	Descript.	Text	
01	00000032	Installed Base	Installed Base/IBase	
03	00000032	Object Structure	Installed Base/IBase	
BQ	00000032	IBase Category for Equipment	Installed Base/IBase	
FL	00000032	Functional Location	Installed Base/IBase	

Figure 7.8 Assigning a Partner Determination Procedure to the IBase Category

7.1.3 Objects Overview

The unique identification of a product is referred to as an *object*; for example, a computer IP address or a license plate of a car. These are SAP CRM objects that were formerly known as individual objects. Like IBases, objects can have various relationships such as parties involved, cases, service contracts, open service items, closed service orders, counters and readings, warranties, and knowledge articles. You can access an object fact sheet to verify the relationship.

When an object is assigned to a product, it forms a unique identification to that product. Additionally, it can also be a service location identification of where it's performed. You can assign only one specific object to the IBase tree structure, whereas you can assign the same products multiple times within the IBase structure.

[Figure 7.9](#) and [Figure 7.10](#) show the object fact sheet with all the relationship assignment blocks.

Object Details

Details		Contact	
Object ID	CM3004	Description	
Object Description	Copier 1	Function	
Alternative ID		Street	
Alternative ID Type		City	CITYnot bound
Object Family ID	0401	City Code	CITY_NOnot bound
Object Family	Equipment	Fax Country	COUNTRYFAXnot bound
Base Category ID	MAT_EQPT	Phone	TEL_NOTELnot bound
Base Category	Equipment	Mobile	TEL_NOMOBnot bound
Reference Product ID		Fax	FAX_NOFAXnot bound
Reference Product		E-Mail	
Installed Base ID	10000000000002920	Location	
Installed Base	D1HighTech	Street	
		City	
		Postal Code	
		Floor	
		Room Number	

Figure 7.9 Object Fact Sheet (1)

Fact Sheet For Equipment: CM3004, Copier 1

- Parties Involved**: No result found
- Open Product Service Letter Items**: No result found
- Cases**: No result found
- Service Contracts**: No result found
- Open Service Items**: No result found
- Last Closed Service Orders**: No result found
- Counters and Readings**: No result found
- Warranties**: No result found
- Knowledge Articles**: No result found

Figure 7.10 Object Fact Sheet (2)

Each object is assigned to the object family, which can have specific attributes based on the products. This means that you can categorize a list of objects based on the different object families. Certain types of objects will belong to specific object families (e.g., household appliances).

Object Configuration

The following steps are required to configure customer-specific objects:

1. In this step, you create the custom object family and assign the same to the IBase category. [Figure 7.11](#) shows a standard object family with 0401 EQUIPMENT assigned to IBASE CATEGORY 01.

Change View "IBase Maint. View: Assign Object Families to IB category"

New Entries

Typ	Family	Object Family Desc	IBase Category Desc
01	0301	LAM: Leasing Template for Contract x	Installed Base
01	0311	LAM: Individual Object	Installed Base
01	0401	Equipment	Installed Base
01	0404	IT Item	Installed Base
03	0401	Equipment	Object Structure
03	0404	IT Item	Object Structure
EQ	0401	Equipment	IBase Category for Equipment
EQ	0404	IT Item	IBase Category for Equipment
FL	0401	Equipment	Functional Location
FL	0403	Functional Location	Functional Location
IT	0298	GSM Prices	IS-T Telephone Numbers
IU	0101	IS-U Connection Objects	Technical Objects for IS - U
IU	0102	IS-U Points of Delivery (PODs)	Technical Objects for IS - U

Figure 7.11 Assigning Object Families to an IBase Category

2. You then need to create the attribute and the set types to assign it to the category under the product hierarchy. In our example, we're using standard product set types, as shown in [Figure 7.12](#).

Set Type	Description	Inherited	Position	View ID	View Description	Template	Templ.Desc
COMM_PR_MAT	Basic Data for ...	<input checked="" type="checkbox"/>	10	MATERI...	Material		
COMM_PR_UNIT	Units of Measure	<input checked="" type="checkbox"/>	20	MATERI...	Material		
COMM_PR_GTIN	Global Trade It...	<input checked="" type="checkbox"/>	30	MATERI...	Material		
COMM_PR_LGTEX...	Basic Texts	<input checked="" type="checkbox"/>	40	MATERI...	Material		
COMM_PR_SHTEXT	Descriptions	<input checked="" type="checkbox"/>	30	BASIC	General		
CRMM_PR_TAX	Product Taxes	<input checked="" type="checkbox"/>	50	BASIC	General		

Figure 7.12 Product Set Types

- Next, create the product CATEGORY within the product hierarchy, as shown in [Figure 7.13](#).



Figure 7.13 Creating a New Category

- After the CATEGORY is created, assign the OBJECT FAMILY and the set types to the category so that you can create the object with the object category EQUIPMENT (see [Figure 7.14](#)).

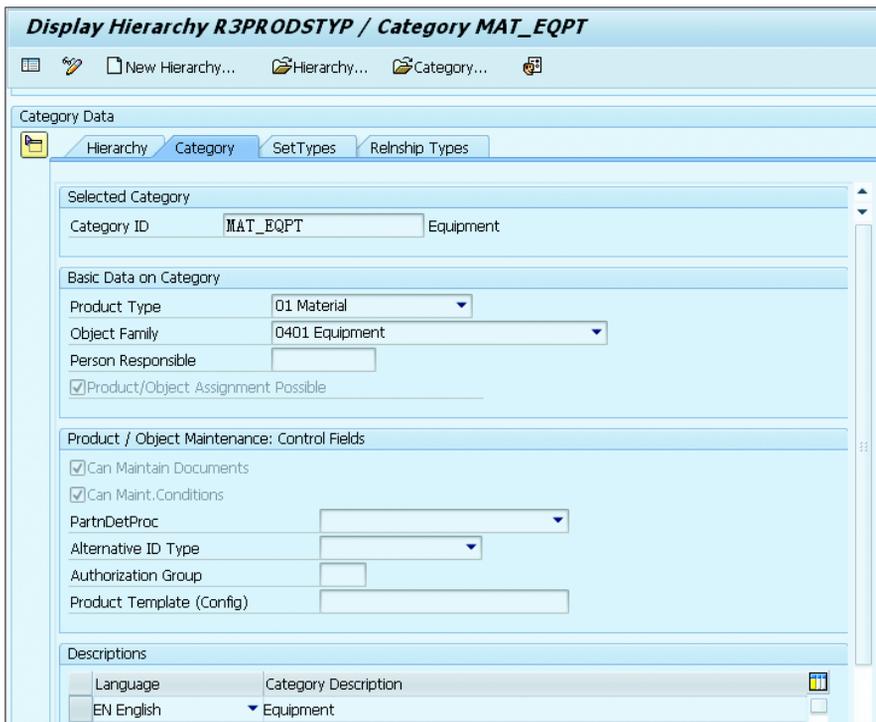


Figure 7.14 Object Family Assignment to the Product Category

5. After the configuration steps are completed, you can then create the object and assign the CATEGORY ID, as shown in [Figure 7.15](#).

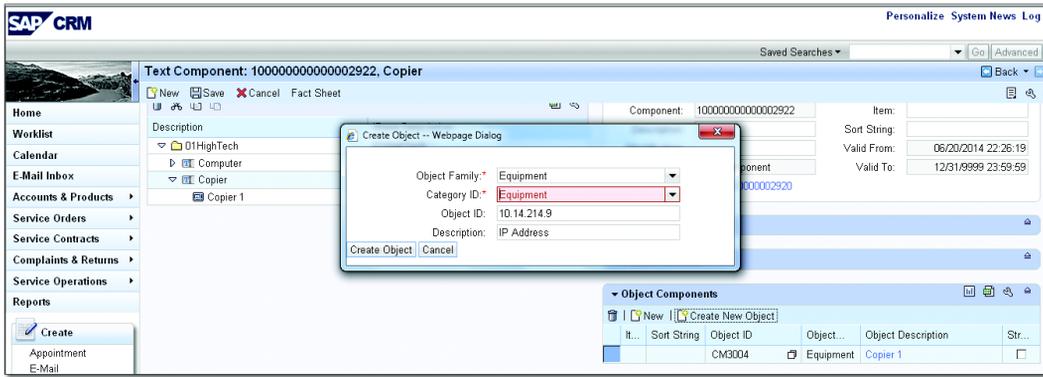


Figure 7.15 Creating the Object

Technical Object Replication

SAP CRM Service provides you with the functionality to bring technical objects from SAP ERP to SAP CRM. These technical objects include the *equipment* and the *functional location*. Changes to these technical objects are bidirectional—meaning if you change the equipment in SAP CRM, the changes are replicated back to SAP ERP.

The next two sections look at both the equipment and function location replication processes from SAP ERP to SAP CRM.

Equipment Replication

As illustrated in [Figure 7.16](#), the equipment in SAP ERP represents the object components of the IBase in SAP CRM.

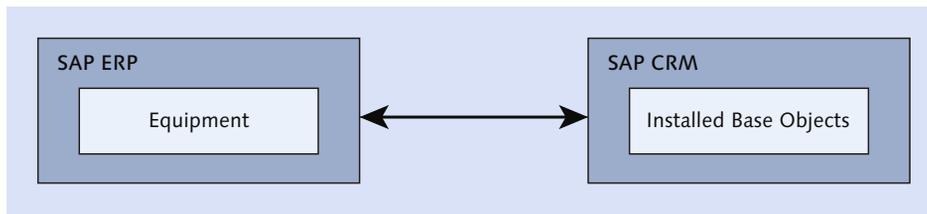


Figure 7.16 Equipment Download

As previously stated, equipment data exchange is bidirectional. So, if you've maintained a tree-like equipment structure in SAP ERP, then the same tree structure is loaded to SAP CRM as an IObject.

The following data is exchanged between SAP CRM and SAP ERP:

- ▶ Description
- ▶ Hierarchy
- ▶ Serial number
- ▶ Business partner
- ▶ Address
- ▶ Status
- ▶ Manufacturer
- ▶ Object type
- ▶ Variant configuration

Before downloading the equipment, it's critical that the master data be loaded from SAP ERP to SAP CRM. The product hierarchy download should be up to date, and the hierarchy data should be in sync between the two systems.

After this is completed, it's time to define the default settings for replicating the equipment. Follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • INSTALLED BASE • REPLICATION OF TECHNICAL OBJECTS FROM SAP ERP • DEFINE DEFAULT SETTINGS FOR REPLICATION OF EQUIPMENT.

Once there, you'll need to configure the SITE NAME and map it to the IBASE CATEGORY/OBJECT FAMILY/CATEGORY ID so that the two systems map these. When the equipment is loaded, it will go under OBJ.FAMILY 0401 and CATEGORY ID 0401 (see [Figure 7.17](#)).

New Entries: Overview of Added Entries				
Customizing for Equipment Download				
Site Name	IBase Category	Obj.Family	Category ID	Delta Load
R/3	EQ	0401	0401	<input checked="" type="checkbox"/>

Figure 7.17 Equipment Download Customizing

Access Transaction R3AS, and load the equipment configuration object EQUI_CONFIG before loading the actual equipment (see [Figure 7.18](#)).

Start Initial Load

Object

Load Object: EQUI_CONFIG

Data Flow

Source Site (Sender): R/3

Destination Site (Receiver): CRM

Figure 7.18 Equipment Configuration Download

Equipment Filters

Before loading the equipment configuration, make sure to activate the object and match the equipment filters with the EQUI_CONFIG filters.

If you want to activate the filters for the equipment configuration delta download, make sure that you have the CRM_FILTERING_ACTIVE entry, as shown in [Figure 7.19](#), in table CRMPAROLT in the SAP ERP system.

Change View "CRM OLTP Parameters": Details

New Entries

Parameter name: CRM_FILTERING_ACTIVE

Param. Name 2: EQUI_CONFIG

Param. Name 3: EQUI_CONFIG

User: CRM

Param. Value: X

Param. Value 2:

Figure 7.19 Activating Filters for the EQUI_CONFIG Adapter Object

Now, activate BAdI CRM_EQUI_LOAD ([Figure 7.20](#)).

After the BAdI is activated, activate the equipment download object, and start the initial load (see [Figure 7.21](#)).

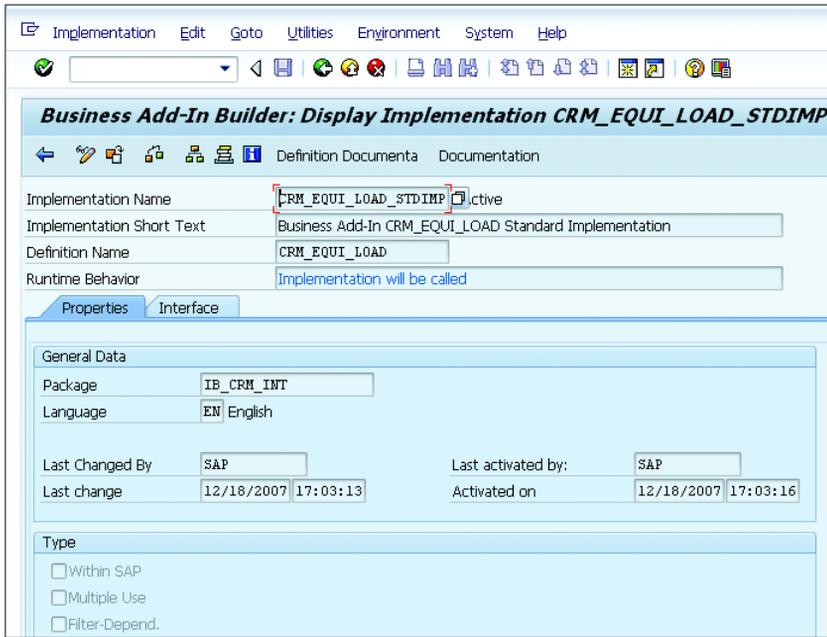


Figure 7.20 BAdI CRM_EQUI_LOAD

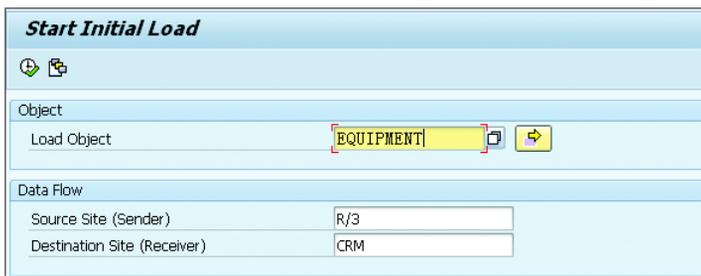


Figure 7.21 Object Load – Equipment

Functional Location Replication

Similar to equipment, the functional location is where the equipment is installed, and it can also be downloaded from SAP ERP to SAP CRM (see [Figure 7.22](#)). However, the functional location can't be replicated back from SAP CRM to SAP ERP, except for the assignment piece. This means that the assignment of the location to the equipment is replicated back to SAP ERP.

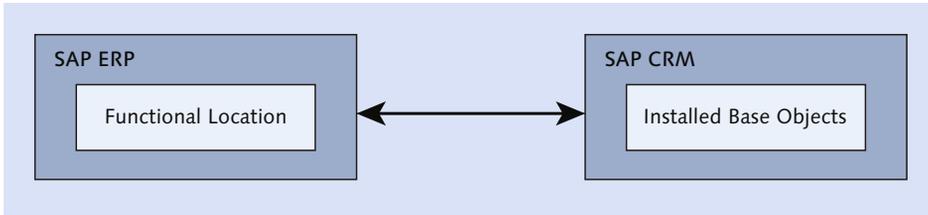


Figure 7.22 Functional Location

To download the function location from SAP ERP to SAP CRM, first define the default settings for replicating the functional locations by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • INSTALLED BASE • REPLICATION OF TECHNICAL OBJECTS FROM SAP ERP • DEFINE DEFAULT SETTINGS FOR REPLICATION OF FUNCTIONAL LOCATION.

Within this step, you create the entry for the SITE NAME (SAP ERP) and maintain IBASE CATEGORY, OBJECT FAMILY, and CATEGORY ID, as shown in [Figure 7.23](#).

Change View "Customizing for Functional Location Download": Details

New Entries

Site Name: R/3

Customizing for Functional Location Download

IBase Category	01
Object Family	0401
Category ID	0403

Figure 7.23 Functional Location Download Configuration

Now, activate BAdI `CRM_FUNCLOC_LOAD` to start the initial load for the adapter object FUNCLOC ([Figure 7.24](#)).

Start Initial Load

Object

Load Object: FUNCLOC

Data Flow

Source Site (Sender)	R/3
Destination Site (Receiver)	CRM

Figure 7.24 Object Load – Functional Location

Before moving on to any of the service transactions, it was important to understand the IBase master data setup and the core concepts of where it can be used. We covered how an IBase is created and what its different components are. Additionally, this section explained the technical object concept and the steps for downloading and configuring the equipment and functional location from SAP ERP to SAP CRM. Next, we'll look at Warranty Management.

7.2 Warranty Management

Warranty Management plays an important role in providing optimum service to customers. A warranty is a commitment by an organization to continue providing services for a product sold to a customer or the replacement of any nonworking parts of a product for a specific period of time after the goods are sold. During this period, the customers aren't billed for services rendered. Warranty claims are triggered after the warranty determination to settle the account with the customer.

Warranties can be an important aspect to a customer buying a product. For example, if a customer goes to buy a camera and finds that one of the camera brands is offering a longer period of warranty than another brand, the customer may be attracted to the camera with the longer warranty period. From a selling point of view, this can be helpful for marketing.

In the next two sections, we'll look at the warranty types and uses, as well as the steps involved in creating and configuring a warranty.

7.2.1 Types and Usage

Warranties are categorized into two types:

► **Customer warranty**

The manufacturer sells the machinery parts to the customer and gives the customer a warranty for a specific period of time. If the machinery part stops working within the warranty period, the manufacturer replaces the product or repairs it.

► **Vendor warranty**

The manufacturer buys the machinery parts from a vendor. The manufacturer uses the machinery as a part of its IBase. The vendor provides a certain warranty period to the manufacturer, so that if the machinery parts stop working

within the warranty period, the vendor is liable to conduct the repairs or replace the machinery parts.

A warranty can be assigned to products, objects, and IBases. Within the services process, warranties are determined on the service order or service confirmation based on its assignment to the products, objects, and IBase. A customer warranty is referred to as an *inbound warranty*, and a vendor warranty is referred to as an *outbound warranty*. These two categorizations entail the following

► **Inbound warranty**

An inbound warranty is the warranty claim sent by the customer to the dealer the customer bought the product from. The inbound warranty claim is created from the service order or the service confirmation. If the system finds that the warranty is assigned to the parts from the service order, warranty claims can be created automatically or manually. After the warranty claim is created, the organization sends the credit to the customer. The following is true when dealing with inbound warranties in SAP CRM Service:

- The transaction type provided by SAP CRM Service for an inbound warranty is CRMW (Inbound Warranty Claim).
- The item category that can be used for inbound warranty is COMP (Complaints).

► **Outbound warranty**

An outbound warranty is the warranty claim sent to the vendor, as shown in [Figure 7.25](#) in the next section. After the warranty claim is sent to the vendor, it's evaluated and accepted by the vendor. The claim results in a debit memo being sent to the vendor. The following is true when dealing with outbound warranties in SAP CRM Service:

- The transaction type provided by SAP CRM for an outbound warranty is CLMA (Outbound Warranty Claim).
- The item category provided by SAP CRM for an outbound warranty is CLMP (Outbound Warranty Claims Item).

Outbound Warranty

An outbound warranty is a leading transaction category BUS2000255 Warranty Claim, and an inbound warranty is a leading transaction category BUS2000120 Complaints.

7.2.2 Process Overview

Figure 7.25 shows the warranty claims process flow. The flow shows the vendor wherein the claim is sent to the vendor when the product malfunctions.

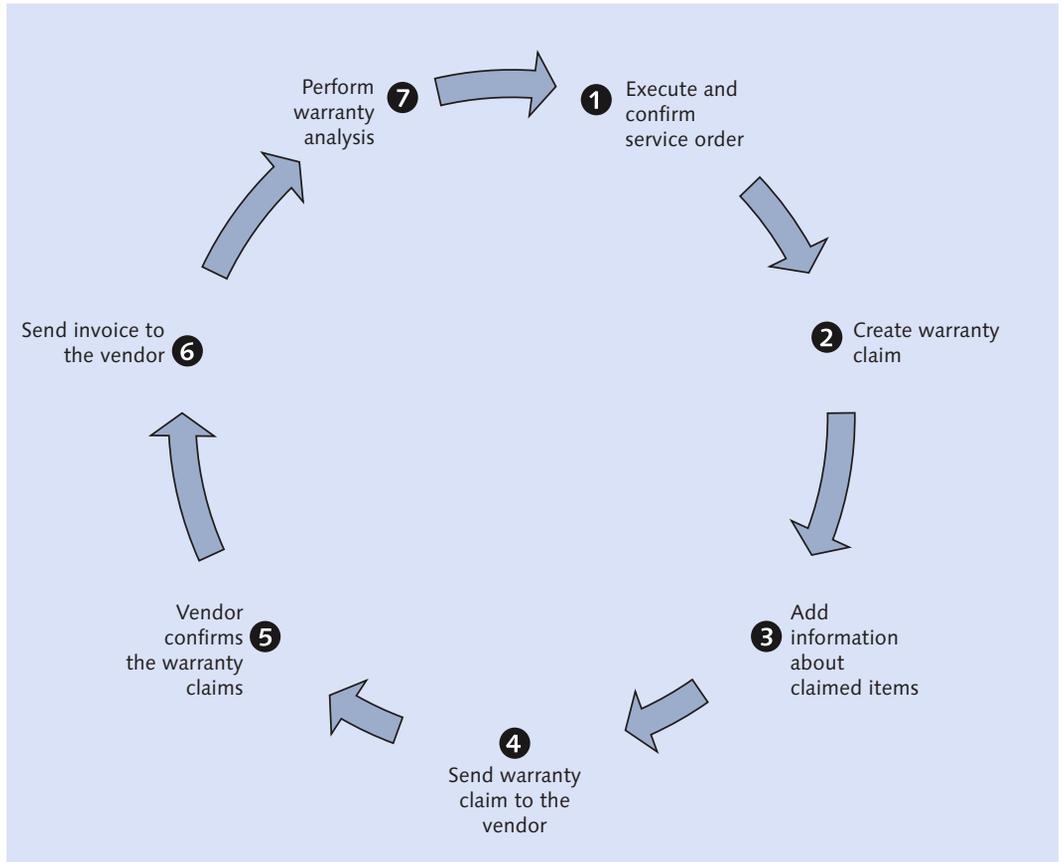


Figure 7.25 Warranty Claim Process

In Figure 7.25, we see the following processes at work:

- 1 A service order is created for a customer to conduct services and execute by creating the service confirmation. While confirming the service orders, the warranty is determined on the service transaction.

- ② A warranty claim transaction is created; in this case, the warranty is an out-bound warranty.
- ③ The items are added to the warranty claim, which can be parts of the services to be performed.
- ④ The warranty is then sent to the vendor to get an approval by the vendor.
- ⑤ The vendor confirms the warranty claim and accepts. The information comes back to the warranty claim transaction, and the status of the claim is changed to ACCEPTED BY THE VENDOR.
- ⑥ The debit memo subitem is created from the warranty claim, which is then sent to the vendor to claim the amount.
- ⑦ A warranty analysis is done for the vendor to get the details of the claim for a specific period of time.

7.2.3 Configuring Warranties

In this section we will look at the configurations for the warranty transaction type and item category.

Transaction Type Configuration

The following are steps to create, configure, and use warranties in service transactions:

1. In this step, the warranty hierarchy is created prior to creating any warranty products in SAP CRM. Access COMM_HIERARCHY to create the warranty hierarchy WARRANTY01 and warranty CATEGORY ID WRT_PRDT, as shown in [Figure 7.26](#). Here, the PRODUCT TYPE is 05 WARRANTY.
2. Assign the warranty set types, as shown in [Figure 7.27](#).
3. To assign the warranty hierarchy to the product type, follow the configuration path, SPRO • CROSS-APPLICATION COMPONENTS • SAP PRODUCT • PRODUCT CATEGORY • ASSIGN CATEGORY HIERARCHIES TO APPLICATIONS. Enter the fields as shown in [Figure 7.28](#).

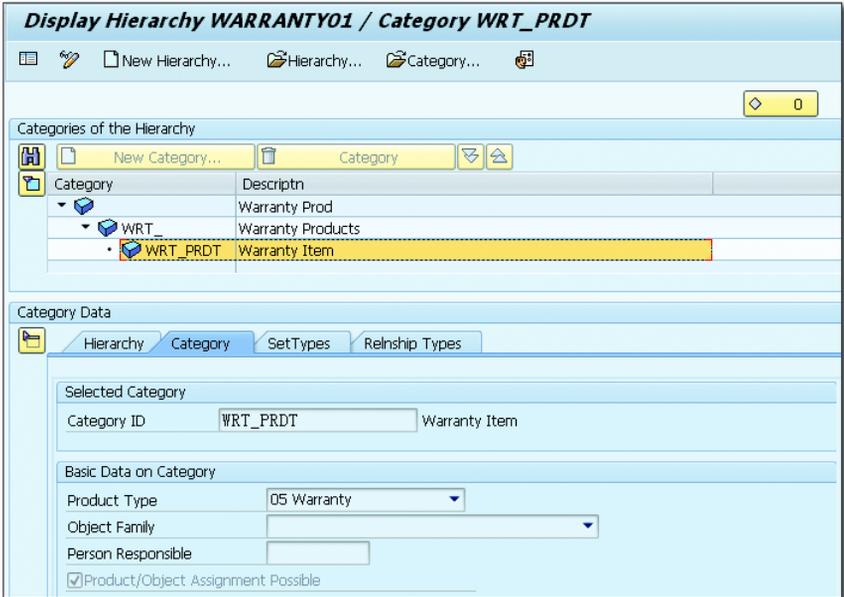


Figure 7.26 Warranty Hierarchy

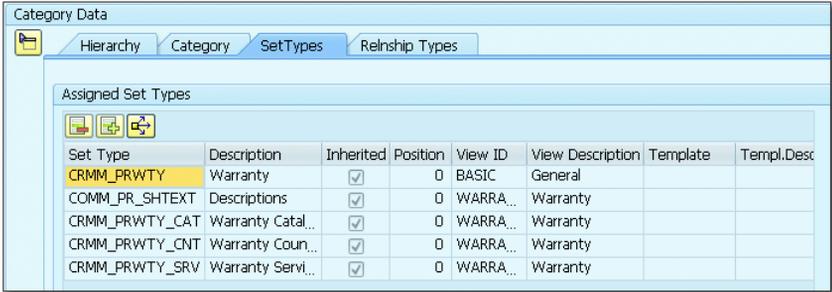


Figure 7.27 Warranty Set Types

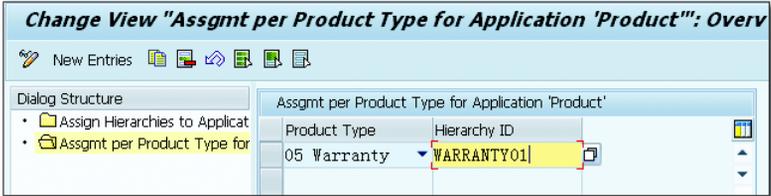


Figure 7.28 Product Type Assignment for Product Hierarchy

4. Access the WebClient UI, business role – SERVICEPRO, to create the warranty product. Enter the WARRANTY PERIOD, START DATE RULE, and END DATE RULE (see [Figure 7.29](#)).

The screenshot shows the SAP CRM WebClient interface for creating a warranty item. The title bar indicates 'Warranty: WP_001, Warranty Item'. The left sidebar contains navigation options like Home, Worklist, Calendar, and Reports. The main content area is split into two columns: 'General Data' and 'Processing Data'.

General Data		Processing Data	
Warranty ID:	WP_001	Date Profile:	Date Profile: Warranty Processing
Warranty:	Warranty Item	Warranty Period:	3 Month
Base Category:	WRT_PRODT Warranty Item	Start Date Type:	Warranty Start
Type:	Customer Warranty	Start Date Rule:	Today's Date
Warranty Basis:	Time-Dependent	End Date Type:	Warranty End
Accounting Indicator:	General Accounting Indicator	End Date Rule:	Warranty Start + Warranty Period
		Status	
		Current Status:	
		New Status:	

Figure 7.29 Creating the Warranty Item

5. Assign the warranty product to the IBase, as shown in [Figure 7.30](#).

The screenshot shows the SAP CRM WebClient interface for assigning a warranty to a product component. The title bar indicates 'Product Component: 100000000000002923, DEMO PRODUCT'. The left sidebar is the same as in Figure 7.29. The main content area shows the 'Installed Base Hierarchy' on the left and configuration details on the right.

Installed Base Hierarchy:

Description	IBase Description
01HighTech	01HighTech
Computer	
DEMO PRODUCT	
Copier	

General Data:

Component:	100000000000002923	Item:	
Description:		Sort String:	
Identification:		Valid From:	06/20/2014 22:26:19
Component:	Product	Valid To:	12/31/9999 23:59:59
Installed Base:	100000000000002920		

Product Component Specific Details:

Product ID:	423487	Description:	DEMO PRODUCT
Quantity:	1.000	Base Unit:	PC
Logical Syst.:	EBXCLNT100	Product Type:	Material

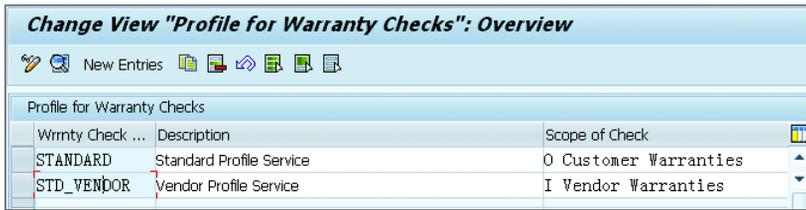
Warranties:

Warranty	Description	Warranty Start	Warranty End
WP_001	Warranty Item	06/29/2014	09/29/2014

Figure 7.30 Assigning the Warranty to the IBase

6. To determine the warranty on the service transaction, you have to define the warranty check profile and assign it to the service transaction. To configure the warranty check profile, follow the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR COMPLAINTS • DEFINE

PROFILE FOR WARRANTY CHECK. [Figure 7.31](#) and [Figure 7.32](#) shows the SAP-delivered warranty check profiles.



Warranty Check ...	Description	Scope of Check
STANDARD	Standard Profile Service	O Customer Warranties
STD_VENDOR	Vendor Profile Service	I Vendor Warranties

Figure 7.31 Warranty Check Profile (1)

7. Enter the fields as shown in [Figure 7.32](#):

- ▶ **SCOPE OF CHECK:** This field defines whether the warranty is a vendor warranty or a customer warranty.
- ▶ **SEQUENCE:** This field specifies whether the object from the reference object data should be used first for the warranty check in the complaint or whether the product from the complaint item should be first.
- ▶ **FIX AT RELEASE:** If this checkbox is set, then the item on the service transaction will be set to the WARRANTY CHECK FIX status when the item is released. This means that no new warranty check will be performed for that item on the service transaction after the status WARRANTY CHECK FIX is set.
- ▶ **FIX AT COMPLETION:** Just like FIX AT RELEASE, FIX AT COMPLETION on the service transaction item status is set after the item is complete, and no new warranty check happens thereafter.
- ▶ **REFERENCE DATE:** Specifies the *date type* that should be used as the reference date for the warranty check.



Warranty Check: STANDARD

Profile for Warranty Checks

Description: Standard Profile Service

Scope of Check: O Customer Warranties

Sequence: O First Reference Object, Then Complaints Item

Fix at Release

Fix at Completion

Reference Date: SRV_START Notification Receipt

Figure 7.32 Warranty Check Profile (2)

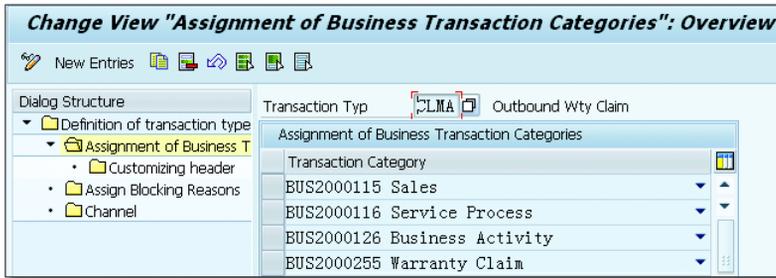


Figure 7.34 Assignment of the Business Transaction Categories

11. Within the service process details, you assign the warranty check profile, as shown in [Figure 7.35](#). In this example, it's a vendor warranty profile (i.e., STD_VENDOR). You can assign the SUBJECT PROFILE and SLA PROF. DET. PROC. fields as well.

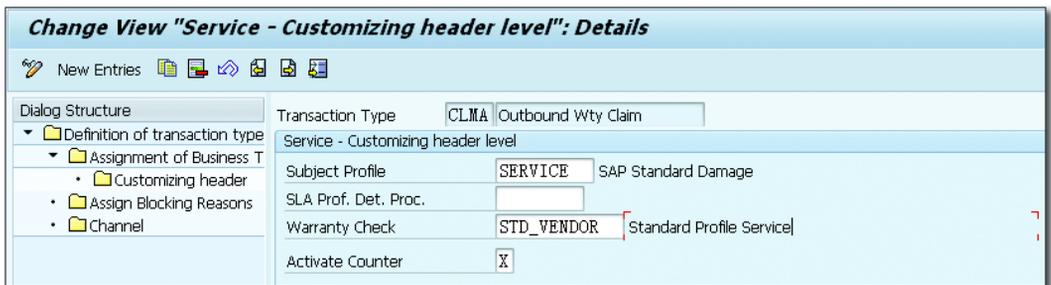


Figure 7.35 Service Process Header Customizing

12. After you've configured the warranty claim and assigned it to the warranty check profile, you need to assign the same to service transactions such as the service order and confirmations. To do this, follow the configuration path for TRANSACTION TYPE SRVC via SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. This will determine the warranty assigned to the IBase, products, or objects while executing service transactions. [Figure 7.36](#) shows the assignment of the warranty check profile to the service confirmation. Similarly, you can assign the warranty check profile to the service order transaction type to determine the warranty within service orders.

Change View "Service - Customizing header level": Details

New Entries

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Transaction Type: SRVC (Confirmation)

Service - Customizing header level

Subject Profile: SERVICE SAP Standard Damage

Questionnaire: []

SLA Prof. Det. Proc.: []

Warranty Check: STD_VENDOR

Activate Counter:

Figure 7.36 Assigning the Warranty Check Profile to the Service Confirmation

Item Category Configuration

The item category configuration is similar to the transaction type configuration as you can control different behaviors at the item level versus at the header level based on your business needs.

SAP provides the CLMP – OUTBOUND WARRANTY CLAIM standard warranty claim item category for an outbound claim. The OBJECT TYPE for the outbound warranty item is BUS2000191 WARRANTY CLAIM ITEM CRM. The item category profiles are similar to transaction type CLMA and can be configured based on business requirement (see [Figure 7.37](#)).

Change View "Definition of Item Categories": Details

New Entries

Dialog Structure

- Definition of Item Categories
 - Assignment of Business T
 - Customizing Item

Item Category: CLMP Outbound Wty Claim

General

Description: Outbound Warranty Claim Item

Object Type: BUS2000191 Warranty Claim Item CRM

Status Object Type: []

Inactive

Relev.wgt/vol.

Date & Qty Are Fixed

Usage Object: 0 Item Contains Product, But Not Individ...

Preceding Ref. Object Type: [] Preceding Ref. Mandatory

Territory Check Not Required

Profiles

Text Det.Proc.: CLMAITEM Warranty Claim Item

PartnerDetProc.: 00000071 SAP Warranty Claim Item

Status Profile: []

ATP Profile: No Availability Check

Org. Data Prof.: 000000000020 SAP Service Item Service

Date Profile: BILLING Date Profile for Invoice Data

Action Profile: GARANTIE_ANSPRUCH_POSITION Acti...

AP Procedure: []

Figure 7.37 Warranty Claim Item Category

Proceed with the following steps:

1. As shown in [Figure 7.38](#), actions assigned in the action profile for the warranty item category creates the debit memo as a subitem if the claim is approved. This is then processed further for billing. To begin defining the item categories, follow the menu path SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORIES.



Figure 7.38 Business Transaction Category Assigned to the Warranty Item Category

2. [Figure 7.39](#) shows the business transaction category details for the service process where you can assign the SERVICE TYPE, VALUATION TYPE, and SUBJECT PROFILE.

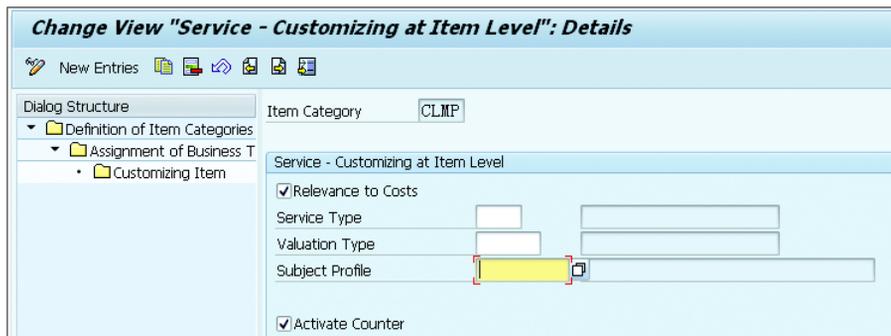


Figure 7.39 Service Customizing at the Item Level

3. Similar to an outbound warranty claim configuration, you can also configure the inbound warranty claim TRANSACTION TYPE – CRMW INBOUND WTY CLAIM and assign the warranty check profile STANDARD (CATEGORY – CUSTOMER WARRANTY) to the service transactions.

In this section, we discussed the different types of warranties and the Warranty Management process for a vendor warranty. In addition, we looked at how to configure warranties in SAP CRM Service.

7.3 Service Contract Management

A *service contract* is an agreement between an organization and a customer to provide specific services or spare parts for a specific period of time. A service contract consists of the price and agreement for services. As soon as a service order is created from the service contract, the price on the contract is applied in the service order for the services to be performed. To maintain a relationship with a customer, an organization should abide by the service level agreement (SLA) in the service contract.

Additionally, organizations can also apply certain discounts or special pricing to the customers for the services they provide to gain a competitive advantage and further foster customer relationships.

The next sections look at the different service contract functions, processes, and configuration steps.

7.3.1 Business Functions

Like any other SAP CRM transaction, a service contract has header and item data. As shown in [Figure 7.40](#), the header data applies to the whole service contract transaction, whereas the item data consist of the service items for which the contract is set up.

Target and Value Contracts

If you're working on the target or value contract scenario then you can make use of the standard transaction type SC Contract (Value/Qty). SC and SCC are the standard transaction types for service contracts provided by SAP. Service contracts aren't transferred to SAP ERP.

The following are some of the most important service contract functions found at the header and item level.

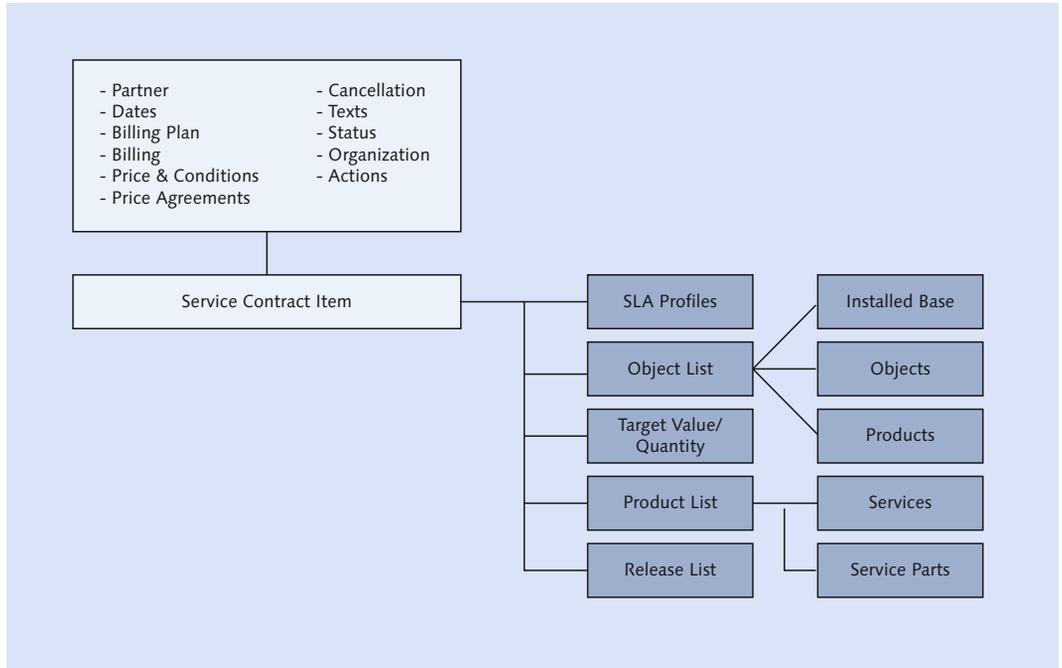


Figure 7.40 Service Contract Structure

Price Agreements

A service contract *price agreement* is an agreement between a customer and an organization pertaining to a specific price for a specific product. These are condition records that are assigned to the contract as a part of price agreements.

A prerequisite to maintaining the price agreement is the condition maintenance technique, which is assigned as a condition group to the item category or the contract transaction type. You can configure price agreements via the menu path, SPRO • CRM • TRANSACTION • SETTINGS FOR CONTRACT • PRICE AGREEMENTS AND CONFIGURATION.

Actions

Actions can be configured in contract documents to better service the customer and take some proactive steps in cases where contracts are nearing the expiration

date. This is done by creating notifications of when this date is coming, allowing a company to reach out to the customer to seek renewal.

You can assign an action profile to the service contract transaction type or to the item category based on your business scenario.

Cancellations

You can configure a *cancellation rule* and *cancellation reason* for the contracts being created in SAP CRM. You can set up a functionality based on your business needs to notify and cancel the contract by a specific partner function if required. You create the cancellation rule and assign it to the cancellation procedure, which is then assigned to the service contract transaction type. After a cancellation is complete, you won't be able to create any service orders referencing the contract.

To set up the cancellation procedure, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR CONTRACTS • CANCELLATION.

Billing Plan

The *billing plan* triggers the periodic billing and sends the billing request to SAP CRM billing after the service contract is accepted and approved. This initiates the billing request based on the item category configuration for periodic billing and SAP CRM billing configuration.

SLA Profile

A service contract can be assigned with certain service agreements by defining the response time or the availability time at the service product level. This means that if certain services are needed at stipulated times with a response to be initiated within certain hours, then you can define those in the service contract.

Object, Product, and Release Lists

Object lists are IBases, IBase components, objects, or products. You can assign an object list to the service contract. These are then determined on the service orders based on the contract validity period.

A *product list* contains service items for which the service contract is being set up. Similar to a sales contract, you can assign products to the product list and

determine the service contracts in the service orders when the services are going to be performed.

A *release list* shows the list of service products consumed from the contract or the parts being claimed from the service order that reference the service contracts.

7.3.2 Process Overview

Service contracts play an important role just like sales contracts. Within the service cycle, service contracts are created for prime customers to attract these customers to stay with an organization. This is the first step in the process of Service Contract Management.

Using the SAP CRM Service functionality, you can manage the service contract lifecycle efficiently by monitoring the internal processes and providing services to customers. Service Contract Management consists of various service capabilities such as service agreements, Service Level Management, service plans, and usage-based contracts apart from contract management and contract renewal. Key benefits of Service Contract Management include SLA compliance, meaning you can assign SLAs to the service contracts, offering different types of services and entitlement checks, and driving recurring revenue streams.

The Service Contract Management cycle starts by creating or managing service contracts. Within service contracts, a company then negotiates the terms and conditions and then sets up the contracts. A customer calls for the services to be performed, and the SLAs are monitored and assigned to the service contract. After the service execution is completed, a customer is billed based on the contract's terms and conditions.

Figure 7.41 shows the service cycle, which includes the placement of the service contract quotation and the service contracts.

As illustrated in Figure 7.41, the service contract cycle is broken down into various steps with the following elements:

❶ Service agreement

As the first step in the service cycle, a *service agreement* consists of the price agreements and conditions agreed upon with the customers. These conditions are valid for the service contracts and service orders created in the service cycle. Service agreements aren't replicated to SAP ERP.

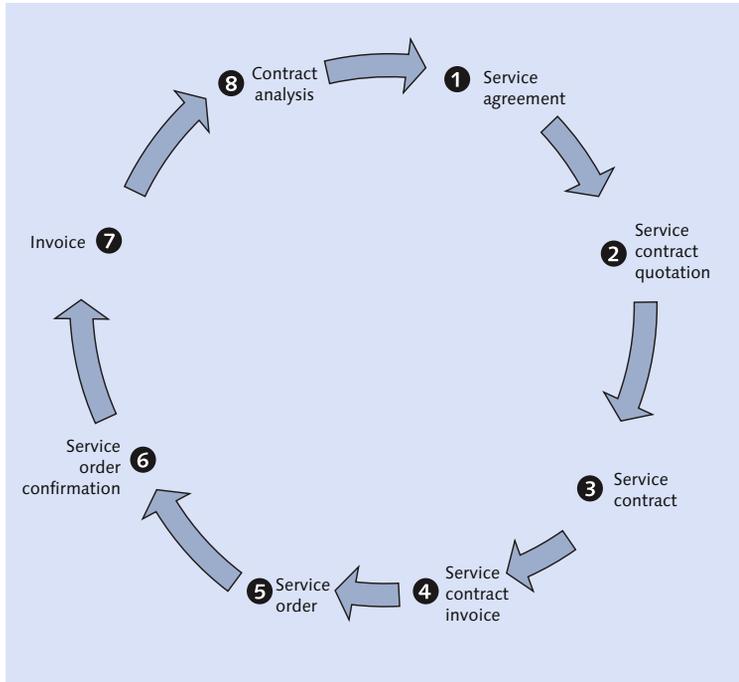


Figure 7.41 Service Cycle Using Service Contracts

2 Service contract quotation

A *service contract quotation* is a legally binding offer made to the customer with respect to the services or spare parts at specific price agreements. The service contract quotation provides an opportunity for the customer to accept the service quotation. After the service quotation is accepted, it's converted into a service contract.

3 Service contract

A service contract is a legally binding price agreement for products with the assigned SLA accepted by the customer. There are various features within service contracts such as the SLA, price agreement, billing plan, release history, and so on. Refer to [Section 7.3.1](#) for further information on these processes.

4 Service contract invoice

After the service contract is accepted, and the services are performed, you can perform the service contract invoice. It can be a milestone billing based on the services performed at regular intervals. You can either use SAP CRM billing or SAP ERP billing.

5 Service order

A service order is created with reference to the service contract. The price agreements or discounts are applied to the service orders, and the services are performed accordingly.

6 Service order confirmation

A service confirmation is followed by the service order. The services are accepted, confirmed, and then integrated with the SAP ERP system to settle the agreed price and conditions.

7 Invoice

After the services are accepted and performed, any additional amount to be settled is performed as a next step by creating an invoice.

8 Contract analysis

The last step within the service cycle using service contracts is the contract analysis. You can analyze the contracts for acceptance and rejection.

In the next section, we'll look at the steps involved in configuring service contracts in SAP CRM Service.

7.3.3 Configuring Service Contracts

In this section we will look at the steps involved in configuring services contracts for a transaction type and item category. We will also look at the configuration for the item category determination, copy control settings, and contract determination.

Transaction Type Configuration

For this example, we'll look at the service contract configuration steps for transaction type ZSC.

To begin configuring the service contract for transaction type ZSC, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. The transaction type shown in [Figure 7.42](#) and [Figure 7.43](#) is similar to any business transaction in SAP CRM. Here you assign the leading business transaction as BUS2000112 SERVICE CONTRACT and configure the product determination, profiles, and number range assignment. The QUANTITY/VALUE CONTRACT field isn't relevant for service contracts and is only used for sales contracts.

Change View "Definition of transaction types": Details

New Entries

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Transaction Type: ZSC [Service Contract]

General

Description: Service Contract

Leading Transaction Category: BUS2000112 Service Contract

Quantity/Value Contract:

Status Object Type:

Inactive:

Commitment Date: Commitment Date is Not Calculated

No Change Documents

Postprocess. from:

Part. Process.Permitted:

Template Type:

Product Determination

Enter GTIN

Enter Partner Product

Create Product Order Number

Always Check Product ID

Product Description/ID Search

Profile for Altern. Identif.:

Product Substitution Proced.:

Figure 7.42 Service Contract Transaction Type (1)

Change View "Definition of transaction types": Details

New Entries

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Profiles

Text Det. Procedure: ORDER001 Sales Order

Partner Determ.Proc.: 00000041 Service Contract (Header)

Status Profile:

Org. Data Prof.: 000000000008 SAP Service Org. Data Profile (Header)

Partner Function ORG: 0001 Sold-To Party

Date Profile: CONT002

Action Profile: SERVICE_CONTRACT_PRINT

AP Procedure:

Cancellation Proced.: 0001

Condition Group:

Transaction Numbering

No.Range Object: CRM_SALES CRM Sales Trans.

Int.No.Range No: 01

Ext.No.Range No:

Early No. Assgt

Item Numbering

Increment Item: 100

IncrementSubltn: 100

Figure 7.43 Service Contract Transaction Type (2)

Only limited business transaction categories are assigned to the service contract transaction type. In this case, it's BUS2000115 SALES and BUS2000112 SERVICE CONTRACT (see [Figure 7.44](#)).



Figure 7.44 Assignment of Business Transaction Categories

[Figure 7.45](#) shows TRANSACTION TYP ZSC business transaction category for sales where you can configure CREDIT CHECK, PRICING DATA, and PAYMENT DATA. The configuration is similar to sales transaction.



Figure 7.45 Customizing the Contract Header

Item Category Configuration

When you add items to the service contract transactions, you can have different controls at the item level versus the header level. This relates to the profiles such as the date profile, action profile, product determination procedures, and more.

To configure the item categories for the service contracts, follow the path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORIES (see [Figure 7.46](#)).

The configuration logic and steps are already covered in [Chapter 3](#) for profiles such as text determination procedure, partner determination procedure, status profile, action profile, and so on. The OBJECT TYPE for the SERVICE CONTRACT item category should be BUS2000137 CRM SERVICE CONTRACT ITEM.

The screenshot shows the SAP SPRO configuration screen titled "Change View 'Definition of Item Categories': Details". The interface includes a "Dialog Structure" tree on the left, a "New Entries" toolbar, and a main configuration area. The "Item Category" is set to "ZSCN" and "Service Contract".

General

Description	Service Contract
Object Type	BUS2000137 CRM Service Contract Item
Quantity/Value Item	Value and Quantity C...
Assign BW / CO	
Status Object Type	
<input type="checkbox"/> Inactive	
<input type="checkbox"/> Relev.wgt/vol.	
<input type="checkbox"/> Date & Qty Are Fixed	
Usage Object	0 Item Contains Product, But Not Individ...
Preceding Ref. Object Type	
<input type="checkbox"/> Preceding Ref. Mandatory	
<input type="checkbox"/> Territory Check Not Required	

Profiles

Text Det.Proc.	ORDER001	Sales Order Item
PartnerDetProc	10000041	Service Contract (Item)
Status Profile		
ATP Profile	No Availability Check	
Org. Data Prof.	000000000020	SAP Service Item Service
Date Profile	CONT002 Date Profile for Service Contr...	
Action Profile		
AP Procedure		
Cond. Group	1300	

Figure 7.46 Item Category Definition

Similar to the transaction type, you configure the business transaction category for the item category, as shown in [Figure 7.47](#).



Figure 7.47 Assignment of Business Transaction Categories

Figure 7.48 displays the item category details, including the BILLING DATA/CREDIT, PRICING DATA, and CONTRACT DATA sections.

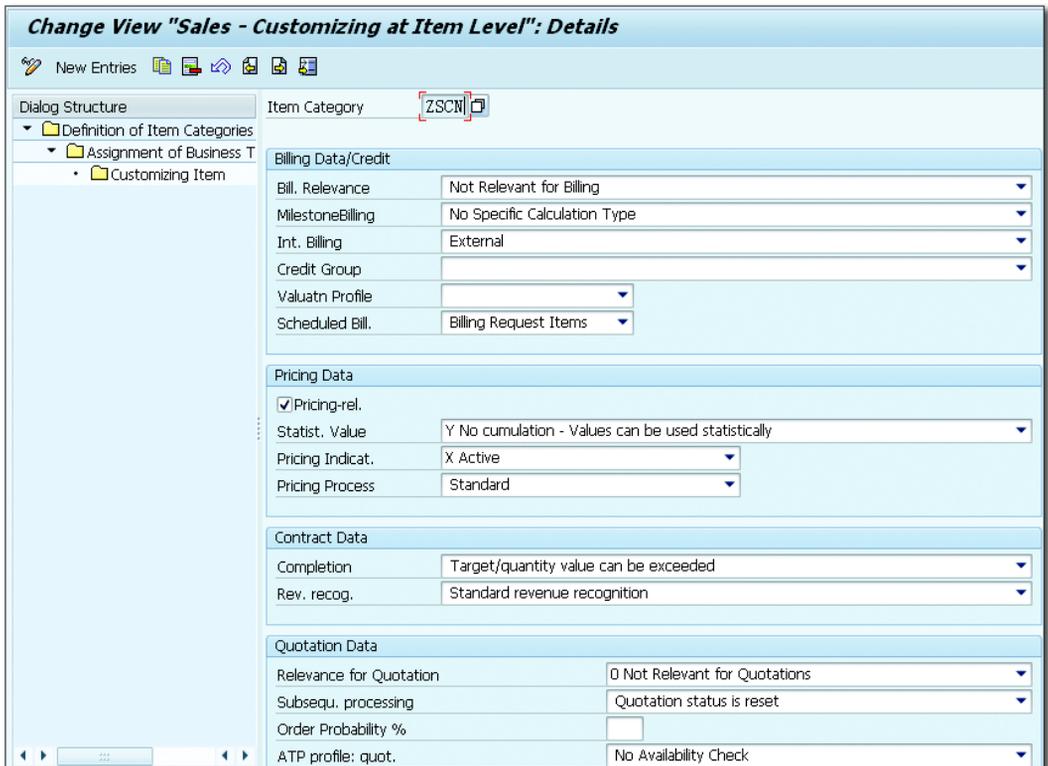


Figure 7.48 Customizing at the Item Level

You'll need to activate the pricing, as shown in [Figure 7.48](#), and mark the completion settings based on your business scenario, that is, whether you want to exceed the quantity or not when creating the release order. This is relevant when you're using the SCC service contract type.

Item Category Determination

After you've defined the transaction type and item category, you need to define the item category determination so that the correct item category is determined based on the service item added to the service contracts.

Follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORY DETERMINATION.

[Figure 7.49](#) shows the ITEM CATEGORY DETERMINATION screen settings for transaction type ZSC. Add the entry for ZSC in the TRANS. TYPE, ITEMCTYGRP, and ITEM USAGE fields to determine the relevant item category.

Change View "Item Category Determination": Overview

Trans.type	Desc.TransT...	ItmCtyGrp	Item usage	MainItmCty	Desc. itm cat.	Item Cat.	Desc.ItmCty	Alt. IC 1	Desc. alt. IC 1
ZSC	Service Contr...	NORM Sales Item			ZSCN	Service Contract	SCNC	Value/Qty Contract	
ZSC	Service Contr...	NORM Sales Item		SCN	Service Contr...	SPLA	Service Plan		
ZSC	Service Contr...	NORM Sales Item	SERV Service Bill...	SCN	Service Contr...	FAPP	BRI		
ZSC	Service Contr...	NORM Sales Item	SERV Service Bill...	SCNC	Value/Qty Co...	FAPP	BRI		
ZSC	Service Contr...	SPLA Serv. Plan P...				SPLA	Service Plan		
ZSC	Service Contr...	SPLA Serv. Plan P...		SCN	Service Contr...	SPLA	Service Plan		
ZSC	Service Contr...	SRVP Service prod...				SCN	Service Contract	SCNC	Value/Qty Contract
ZSC	Service Contr...	SRVP Service prod...		SCN	Service Contr...	SPLA	Service Plan		
ZSC	Service Contr...	SRVP Service prod...	SERV Service Bill...	SCN	Service Contr...	FAPP	BRI		
ZSC	Service Contr...	SRVP Service prod...	SERV Service Bill...	SCNC	Value/Qty Co...	FAPP	BRI		

Figure 7.49 Item Category Determination

Copy Control Configuration

You need to configure the copy control settings for copy service contract data to the service order transaction. There are two types of copy control settings: the transaction type level and the item category level.

For the transaction type copy control, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • COPYING CONTROL FOR BUSINESS TRANSACTIONS • DEFINE COPYING CONTROL FOR TRANSACTION TYPES.

Field Level

Field level definition on the copy control configuration is covered in [Chapter 5, Section 5.3](#).

[Figure 7.50](#) shows the copy control settings for SERVICE CONTRACT ZSC at the transaction type level. Similarly, perform the same activity for the item category.

Change View "Copy Transaction Types - General Control Data": Overview

New Entries

Copy Transaction Types - General Control Data					
Src Trans. Type	Tgt Trans. Ty...	Short Description	Copy item no.	CompRef	Copying routine
ZSC	SCQ	Contract Quotation	<input type="checkbox"/>	<input type="checkbox"/>	
ZSC	SCT	Srv. Ctr. Template	<input type="checkbox"/>	<input type="checkbox"/>	BR0001
ZSC	SRVO	Service Order	<input type="checkbox"/>	<input type="checkbox"/>	
ZSC	ZSC	Service Contract	<input type="checkbox"/>	<input type="checkbox"/>	

Figure 7.50 Copying Transaction Types

To configure the item category copy control, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • COPYING CONTROL FOR BUSINESS TRANSACTIONS • DEFINE COPYING CONTROL FOR ITEM CATEGORIES.

[Figure 7.51](#) shows the copy control for item categories where you can configure different fields based on your business requirements. This setting is required to determine the contract on the subsequent documents.

Change View "Copy Item Categories - General Control Data": Details of

New Entries

Source Item Cat.

Target item cat.

Copy Item Categories - General Control Data

Description

Copying routine

Copy conditions

Reexplode Structure/Free goods

Copy Configuration

Fix

Copy PO data

Generate prod.master data again

CondCopier Type

Price Agreements

Copy Survey

Copy Campaigns

Figure 7.51 Item Category Copy Control Setting

Contract Determination

Contract determination is based on the configuration settings in the document where you want to determine the service contract. In the service cycle, this configuration is set on the service order.

There are six options that you can set on the service order for contract determination (see [Figure 7.52](#)):

- ▶ (Blank): No contract determination
- ▶ C: HEADER AND ITEM (REF. OBJ.), ASSIGN IMMEDIATELY WHEN UNIQUE
- ▶ D: HEADER AND ITEM (REF. OBJ.), ALWAYS WITH SELECTION OPTION
- ▶ E: ONLY AT ITEM LEVEL: ASSIGN IMMEDIATELY IF UNIQUE
- ▶ F: ONLY AT ITEM LEVEL: ALWAYS WITH SELECTION OPTION
- ▶ G: MANUALLY

The screenshot shows the SAP Change View for the 'Definition of transaction types' for transaction type SRVO (Service Order). The 'Contract Determ.' field is set to 'D', which corresponds to the configuration option 'D: HEADER AND ITEM (REF. OBJ.), ALWAYS WITH SELECTION OPTION' mentioned in the text. Other visible fields include 'Description' (Service Order), 'Leading Transaction Category' (BUS2000116 Service Process), and 'Commitment Date' (Commitment Date is Not Calculated).

Figure 7.52 Service Contract Determination Setting

[Figure 7.53](#) shows the CONTRACT/AGREEMENT ASSIGNMENT popup on the service order based on the configuration settings shown in [Figure 7.52](#).

Selection Criteria

You can include your own selection criteria or limit the selection criteria to determine the service contract by implementing BAdI CRM_SERVICE_CONTRACT (Business Add-In for Service Contract Determination).

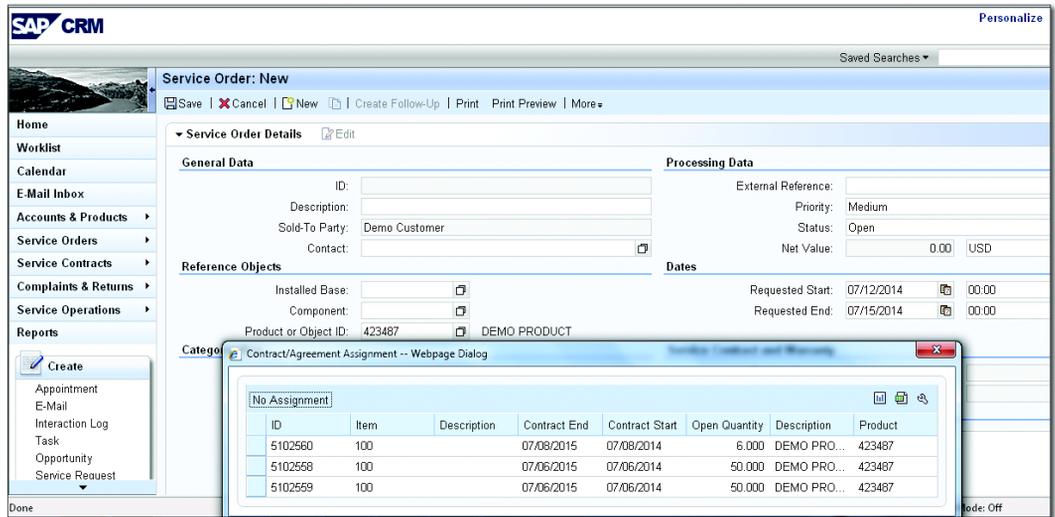


Figure 7.53 Contract/Agreement Assignment Popup on the Service Order

7.3.4 SAP CRM Service Contract and SAP ERP Controlling Integration

SAP CRM provides the SAP ERP Controlling integration with SAP CRM Service Contract Management. This means that you can post revenue to SAP ERP Financials based on the posting period and independent of billing a service contract. For example, if an organization wants to recognize revenue when the services are performed and not wait till the billing happens, they post the revenue to SAP ERP Financials as soon as the services are performed. SAP CRM provides that functionality to post the revenue in SAP ERP Financials from SAP CRM service contracts.

Revenues are determined on a periodic basis or on an individual event basis. Based on the item category configuration, you have three options: standard revenue recognition, time-based revenue recognition, and service-based revenue recognition. Only service-based revenue recognition is based on an event; the other two are based on periods.

To configure the integration of the service contract to SAP ERP Financials, follow the menu path in SAP ERP to SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • CONTROLLING INTEGRATION.

Similar to sales contracts, service contracts play an important role in achieving customer satisfaction and also attracting long-term customers. This section covered the service contract process and its various functions.

7.4 Service Order Management

A *service order* is a specific, agreed-upon service to be performed by a provider for a recipient. Service Order Management consists of capabilities such as service order quotations, service order processing, service confirmations, and financial and logistic integration. Just like a sales order, a service order is a document that confirms the services to be performed between the customer and the service provider.

In this section, we'll look at the different service quotation, order, and confirmation functions within Service Order Management. Then, we'll see the overall service order process before jumping into the configuration steps.

7.4.1 Business Functions

Service Order Management provides a number of valuable functions that can be divided into the following categories: service quotation functions, service order functions, and service confirmation functions. The following sections look at these functions in detail.

Service Quotation Functions

A *service quotation* is the starting point within the service process. A customer sends an inquiry regarding the services from the organization or a service provider. The company then documents the inquiry from the customer and adds the price conditions to the services or delivery of the spare parts required.

After the customer agrees to the services within specific pricing conditions, the service quotation can be converted to a service order. All of the information from the service quotation is copied to the service order, including the agreed-on price conditions. Service quotations are created for a specific validity period, and they expire when the validity period is over and are completed when the complete services are consumed from the service quotation.

The standard service quotation transaction type provided by SAP is SRVQ, with the following item categories included:

- ▶ SRQP for service items
- ▶ SRQM for service part items
- ▶ SRQS for sales items
- ▶ SRQE for expense items
- ▶ SRQT for tool items

You can create a copy of this transaction type and the item categories to achieve your specific business needs. In addition, you need to maintain the item category determination settings and the copy control settings from the service quotation to the service order at the transaction type and item category level.

Service Order Functions

A service order provides various functions that can accomplish most of an enterprise's business needs. These functions help the service provider with various options and help to effectively manage the customers. Essentially, all information that is needed to execute the service by a service technician is available in the service order.

The following functions are available with service orders:

- ▶ **Credit check**

A credit check is performed on the service order if the setting for credit check is active at the order level. The credit check functionality works similarly to a sales order credit check. You can release the credit block on the service orders, which then triggers the subsequent function to create the assignment with the resource planning tool.

- ▶ **Warranty check**

A warranty check is performed automatically when creating the service order. If any warranties exist for the products entered in the service order, those are determined accordingly. You can trigger the warranty claim process after the service order determines the warranty.

- ▶ **Contract determination**

Contract determination is another check in the service order that is very important from the customer viewpoint. If the service contract is set up for the

customer, the contract is determined for the products entered in the service order. After the contract is determined, the price is copied from the contract to the service order.

▶ **Multilevel categorization**

Multilevel categorization reports the category of the issue reported as a part of the service order creation. This way you can have different levels of the issue category on the service order, which can be used for reporting purposes.

▶ **Product proposal**

This allows you to list similar products on the service order. This is the same for both service orders and sales orders.

▶ **Pricing**

Pricing is key to any SAP CRM transaction, and price determination on the service order is based on the sales area, document pricing procedure, and customer pricing procedure. You can enter the accounting indicator to determine the different prices for products in the service order.

▶ **Cost allocation**

You can add an accounting indicator to a service order line item to determine the settlement receiver for cost.

▶ **Questionnaire**

You can assign the questionnaire to the service order and prepare the list of questions required per your business needs.

▶ **Counter readings**

You can record counter readings for IBase components and objects in a service order.

▶ **Dispatching**

The dispatching functionality is also available in the service order. You can assign the service order to different service groups by dispatching it.

▶ **Knowledge articles**

Based on the category added on the service order, you can fetch the knowledge articles based on the category.

▶ **Resource planning**

You can also schedule the appointments for the service technician for the service line item if you're using resource planning.

Figure 7.54 shows the service order transaction structure. The header data consists of the general data, reference objects, categorization, dates, service contract, and warranty. The item data consists of general product data, references, shipping, billing, and pricing data.

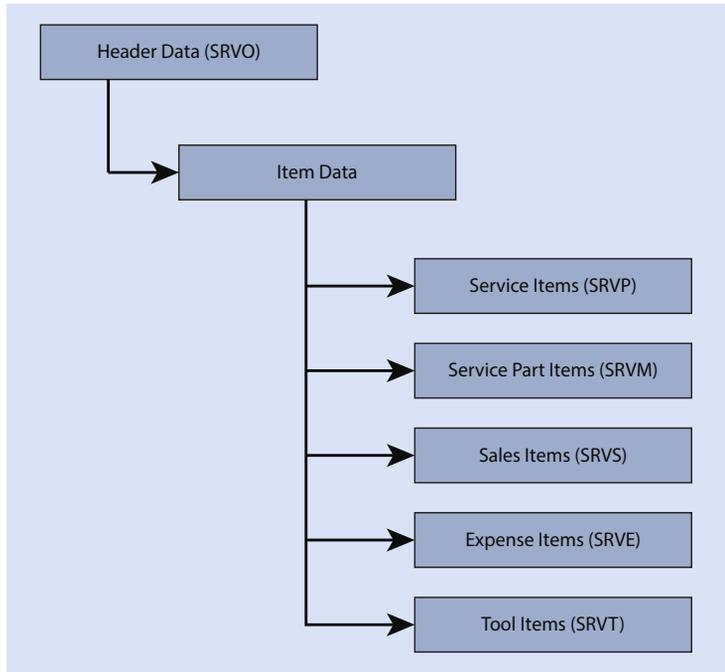


Figure 7.54 Service Order Structure

Apart from this, it's important to understand the different types of items that can be added to a service order via their respective item categories:

► **Service items**

Service items are the actual services that need to be carried out for the items sold to the customer. Its product type is service, and its item category is SRVP. Service orders with service items aren't replicated to SAP ERP.

► **Service part items**

Service part items are required by the service technician to replace any worn out parts while performing services. Its product type is materia, and its item category is SRVM. Service orders with the service part items aren't replicated to SAP ERP.

► **Sales items**

If there is a need for new products to be ordered as a part of the service order, then you can create the service order with the sales item. The service order created with the sales item is replicated back to SAP ERP for fulfilling the items and then billing via SAP ERP. Its product type is material, and its item category is SRVS.

► **Expense items**

Expense items are the expenses incurred by the service technician while performing the service. This includes things such as traveling expenses. Its product type is material, and its item category is SRVE.

► **Tool items**

Tool items are required to perform certain services mentioned in the service order. Its product type is material, and its item category is SRVT.

Service Confirmation Functions

After the service order is complete, the next step is the service confirmation. A service confirmation can be created with or without the service order. The functionality within the service confirmation is similar to the service order. [Figure 7.55](#) shows the service confirmation transaction structure with the header and item information.

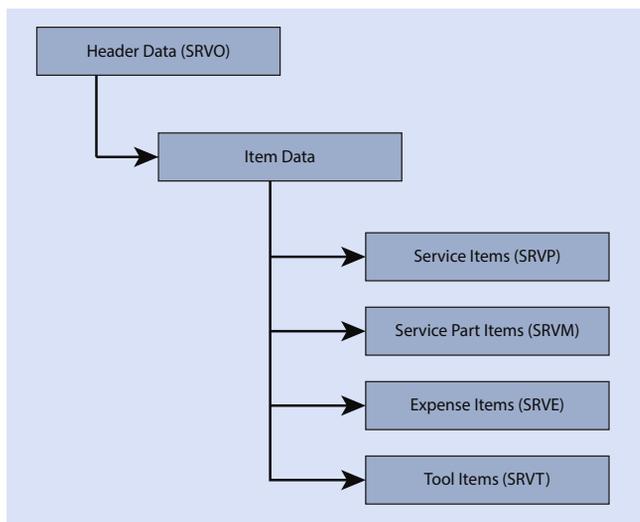


Figure 7.55 Service Confirmation Structure

The header data consists of general data, reference objects, categorization, dates, service contract, and warranty. The item data consists of general product data, references, shipping, billing, and pricing data. [Figure 7.55](#) also shows the different types of items that can be assigned to the service confirmation: service items, service spare parts, expense items, and tool items.

The following are specific service confirmation functions:

▶ **Contract determination**

Similar to a service order, contract determination happens on the service confirmation. A credit check is performed if the settings for credit check are activated at the confirmation transaction type level. You can release the credit block on the service confirmation to process it further.

▶ **Warranty check and warranty creation**

A warranty check is performed when creating a service confirmation. If any warranty exists for products entered in the service order, they are determined appropriately. You can trigger the warranty claim process after the service confirmation determines the warranty.

▶ **Pricing**

Price determination on the SAP CRM transaction is based on the sales area, document pricing procedure, and customer pricing procedure. A service confirmation has the capability to enter the accounting indicator that determines the different prices for the products.

▶ **Cost allocation**

You can add an accounting indicator to the service confirmation line item to determine the settlement receiver for cost. The accounting indicator at the confirmation line item can determine the department in an organization that will receive the settlement cost by selecting the appropriate value in the accounting indicator.

▶ **Follow-up transactions**

A follow-up transaction in a service confirmation is based on its items (see [Figure 7.56](#)). The items on the service confirmations are service items, service part items, expense items, and tool items. The service confirmation doesn't consist of the sales item. Based on these items with the assigned item category and successful integration with SAP ERP when the confirmation is created, the transaction history is updated with the following information:

- ▶ Service items are updated with the Cross-Application Time Sheet (CATS) transaction.
- ▶ Service spare part items are updated with the goods movement transaction.
- ▶ Expense items and tool items are updated with the controlling document transaction.

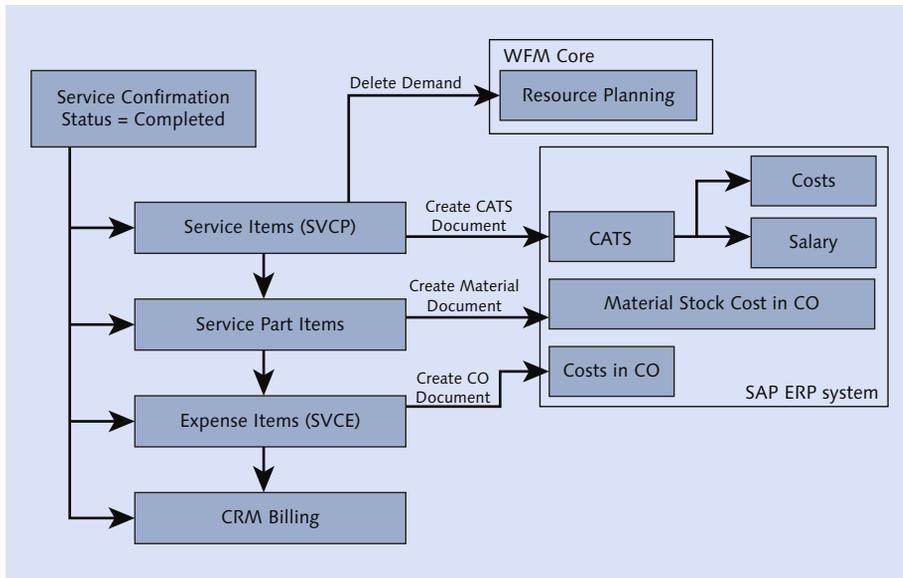


Figure 7.56 Follow-Up Actions from the Service Confirmation

▶ **Output determination**

You can assign the output to the service confirmation and trigger the output based on your business needs. You can click the OUTPUT button to view the summary of the confirmed services.

▶ **Multilevel categorization**

Multilevel categorization is also available in the service confirmation to report the category of the issue. This way you can have levels of the issue category on the service confirmation, which can be used for reporting purposes.

7.4.2 Process Overview

Figure 7.57 shows the Service Order Management cycle overview and the different stages within the service cycle.

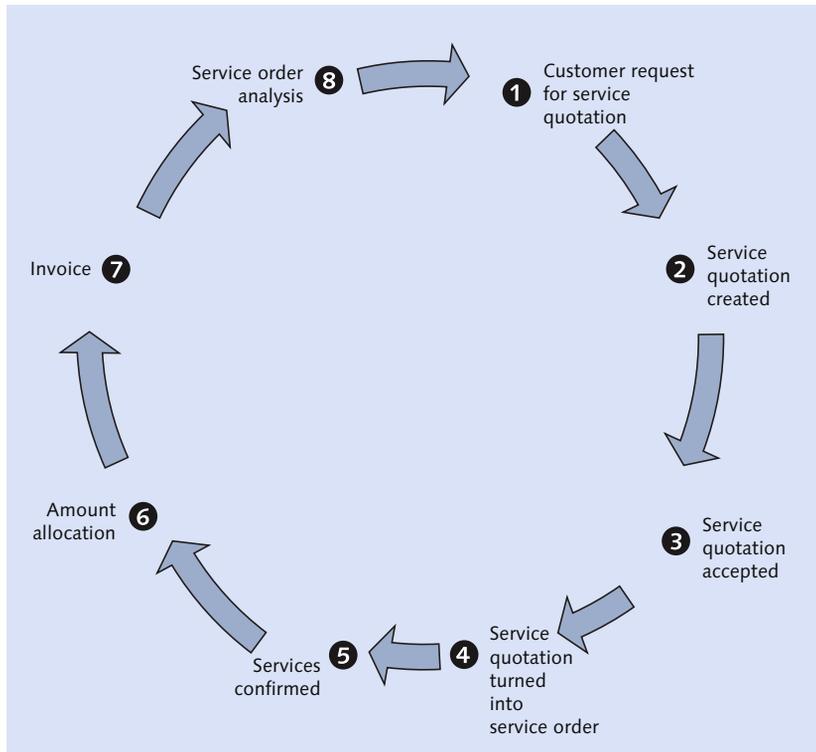


Figure 7.57 Service Order Management Cycle

As shown in [Figure 7.57](#), the following processes occur within this cycle:

1 Customer request for service quotation

In this step, the finished product sold to the customer requires services to be performed. In many cases, this happens with any kind of machinery installation. The customer requests a service quotation and inquires about the services delivered by the company and the associated costs.

2 Service quotation created

After the request for the service quotation is received by the customer, the service provider will create the service quotation with the necessary information and cost assigned to the products listed in the service quotation. The service quotation has a validity period wherein the quotation cost is carried over to the service order.

3 Service quotation accepted

The service quotation is accepted when the customer agrees with the services to be performed at the desired amount, which is marked on the service quotation as accepted in the form of the service quotation ACCEPTED status.

4 Service quotation converted into service order

After the service quotation is accepted, it's then converted into the service order, which initiates the process of actual services to be carried out. The pricing from the service quotation is copied to the service order, including all the services, service material items, sales items, and so on.

5 Service confirmation

The service confirmation is created after the service order in the service cycle. In some cases, you can also create the service confirmation without the service order and post the actual cost to CO within the SAP ERP system. Confirmation is an actual service performed on-site or in-house. When referencing the service order, the transaction information is copied to the service confirmation, which can be changed based on the actual services performed.

6 Amount allocation

Amount allocation enables the company to distribute the cost to multiple bill-to parties and payers. For example, 20% of the total amount of the billing document should be paid by the insurance company. This insurance company can be a different payer than the regular customer payer. Amount allocation occurs before invoicing, which enables the company to distribute among various parties. You can create splitting rules via the configuration path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SERVICE TRANSACTIONS • SETTINGS FOR AMOUNT ALLOCATION.

7 Invoice

Billing is the last step in the service cycle before you conduct any kind of the service order analysis. You can use either SAP CRM billing or SAP ERP billing to bill the service transactions, such as service orders or service confirmations. After the services are confirmed, and the amount allocation is assigned, the next step in the service order cycle is invoicing. Just like in the sales process, the service process has invoicing that is billed to the customer for the services being executed.

8 Service order analysis

Service order analysis can be done at regular intervals based on business needs. The standard reports available in SAP CRM system include open orders by

priority, average order volumes, rate of order completion, and so on. You can create your own report based on your business requirement.

7.4.3 Configuring Service Orders

This section looks at the steps involved in configuring a sales order. We'll look at a transaction type and item category configuration before diving into item category determination, copy control settings, and integration with SAP ERP.

Transaction Type Configuration

As an example, we'll use transaction type ZRVO, which is copied from the service order transaction type SRVO (see [Figure 7.58](#)).

The screenshot shows the 'Change View "Definition of transaction types": Details' dialog box in SAP. The 'Transaction Type' is set to 'ZRVO' and the 'Service Order' checkbox is checked. The 'General' section contains the following fields:

- Description: Service Order
- Leading Transaction Category: BUS2000116 Service Process
- Status Object Type:
- Contract Determ: D Search Auth. Partner
- Agreement Determin.:
- Inactive:
- Commitment Date: Commitment Date is Not Calculated
- No Change Documents
- Postprocess. from:
- Part. Process.Permitted:
- Template Type:
- ATP Type:
- Trans.Classification:

The 'Product Determination' section contains the following fields:

- Enter GTIN
- Enter Partner Product
- Create Product Order Number
- Always Check Product ID
- Product Description/ID Search
- Profile for Altern. Identif.:
- Product Substitution Proced.:
- Package Explosion

Figure 7.58 Service Order Transaction Type

As shown in [Figure 7.58](#), the first step is to define the transaction type by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. Here, assign the leading

business transaction as BUS2000116 SERVICE PROCESS, and configure the PRODUCT DETERMINATION, profiles, and number range assignment.

In [Figure 7.58](#), take note of the fields for CONTRACT DETERM and AGREEMENT DETERMIN.:

► **CONTRACT DETERM**

You can determine contracts based on the settings maintained in this field by choosing from the following options:

- (Blank): No contract determination
- C: HEADER AND ITEM (REF. OBJ.), ASSIGN IMMEDIATELY WHEN UNIQUE
- D: HEADER AND ITEM (REF. OBJ.), ALWAYS WITH SELECTION OPTION
- E: ONLY AT ITEM LEVEL: ASSIGN IMMEDIATELY IF UNIQUE
- F: ONLY AT ITEM LEVEL: ALWAYS WITH SELECTION OPTION
- G: MANUALLY

► **AGREEMENT DETERMIN.**

This option specifies whether the system should automatically find a service agreement and makes an assignment when you create a service transaction. Following are the options to choose from:

- (Blank): No agreement determination
- E: ONLY AT ITEM LEVEL: ASSIGN IMMEDIATE IF UNIQUE
- F: ONLY AT ITEM LEVEL: ASSIGN WITH SELECTION OPTION

Only limited business transaction categories are assigned to the service order transaction type; in this case, it's BUS2000115 SALES, BUS2000116 SERVICE PROCESS, and BUS2000126 BUSINESS ACTIVITY (see [Figure 7.59](#)).



Figure 7.59 Service Order Transaction Categories

After you've selected and assigned the transaction categories, you can customize the header level for the service order. As shown in [Figure 7.60](#), the following fields must be completed:

- ▶ **SUBJECT PROFILE**
You can configure the subject profile and assign it to the service process details. This allows you to key in the multilevel categorization on the service order.
- ▶ **SLA PROF. DET. PROC.**
The SLA profile helps describe the SLAs at the transaction level and the services that need to be performed within the stipulated time. You can assign the SLA profile to the service process header.
- ▶ **WARRANTY CHECK**
The warranty check profile is assigned to the service order to determine the warranty if the necessary master data is maintained.
- ▶ **ACTIVATE COUNTER**
If you've activated the counters, this will enable the counter readings at the header of the business transaction.

The screenshot shows the 'Change View "Service - Customizing header level": Details' dialog box. The 'Transaction Type' is set to 'ZRVO' with a dropdown menu showing 'Service Order'. The 'Service - Customizing header level' section contains the following fields:

Subject Profile	SERVICE	SAP Standard Damage
Trans.Type Confirm.	ZRVC	
Questionnaire		
SLA Prof. Det. Proc.		
Warranty Check	STD_VENDOR	Vendor Profile Service
Activate Counter	<input checked="" type="checkbox"/>	

Figure 7.60 Service Process Header Details

Next, you must customize the header level for the sales order. [Figure 7.61](#) shows the sales order header level with the following fields:

- ▶ **CREDIT CHECK**
If you activate this checkbox, the credit check is performed on the sales order when the order is saved. The complete credit check functionality will work if

the item category settings are appropriately configured by assigning the credit group to the item category.

▶ **DUPL. CHECK ACTIVE**

This checkbox specifies whether a product can only be entered once in a service transaction. When the same product is entered several times, you receive a warning message.

▶ **DOC. PRIC.PROC.**

This field is used to determine the pricing procedure on the service order.

The screenshot shows the 'Change View "Sales - Customizing header level": Details' dialog box. The 'Transaction Type' is 'ZRVO' and the 'Service Order' is selected. The 'Dialog Structure' tree on the left shows the path: Definition of transaction type > Assignment of Business T > Customizing header. The main area is divided into three sections:

- General:** Contains checkboxes for 'Check PO number', 'Propose Order D', and 'Dupl. Check Active'. It also has a 'Text Type' field, a 'Rating Profile' field with a selection icon, and a checked 'Credit Check' checkbox.
- Pricing Data:** Contains a 'Doc. Pric.Proc.' dropdown menu set to 'A Standard' and a 'Condition type' field.
- Payment Data:** Contains 'PaymtPlanType' and 'Checking Group' dropdown menus.

Figure 7.61 Sales Header Details

Item Category Configuration

When you add items to the service order transactions, you can have different controls at the item level versus the header level. This relates to profiles such as date profile, action profile, partner determination procedure, and so on. You can configure item category profiles based on your business needs. The configuration logic and steps are already covered in [Chapter 3](#).

To define the item categories, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORIES. The object type for the service order item category differs from the different type of items (i.e., Service Product Item – BUS2000140, CRM Sales Item – BUS2000131, Tool Item – BUS2000153, CRM Service Material Item – BUS2000146, and Service Expense Item – BUS2000159). [Figure 7.62](#) shows

an example of a SERVICE item copy of the standard ITEM CATEGORY ZRVP – SERVICE.

Change View "Definition of Item Categories": Details

Item Category: ZRVP [Service]

General

Description: Service

Object Type: BUS2000140 CRM Service Product Item

Status Object Type:

Inactive

Relev.wgt/vol.

Date & Qty Are Fixed

Usage Object: 0 Item Contains Product, But Not I...

Preceding Ref. Object Type: Preceding Ref. Mandatory

Package Explosion Territory Check Not Required

Profiles

Text Det.Proc.	SRVITEM1	SAP Service Order Item
PartnerDetProc	00000007	SAP Service Item
Status Profile	<input type="text"/>	
ATP Profile	No Availability Check	
Org. Data Prof.	000000000020	SAP Service Item Service
Date Profile	SRV_SLA_ITEM SAP Default SLA ...	
Action Profile	SERVICE_ORDER_ITEM_SLA SAP ...	
AP Procedure	<input type="text"/>	
Obj. Ref. Profile	<input type="text"/>	

Figure 7.62 Item Category Definition

Only certain business transaction categories can be assigned to the service transaction type. In this case, it's SALES and SERVICE PROCESS, as shown in Figure 7.63.

Change View "Assignment of Business Transaction Categories": Overview

Item Category: ZRVP

Assignment of Business Transaction Cat...

Transaction Category
BUS2000115 Sales
BUS2000116 Service Process

Figure 7.63 Item Category Business Transaction Categories

To customize at the item level, navigate to the screen shown in [Figure 7.64](#), and fill in the following fields:

- ▶ **RESOURCE PLANNING RELEVANCE**
If you activate this indicator, the service product is displayed in the resource planning tool. SAP Workforce Management (WFM) is called when this check is activated.
- ▶ **CONFIRMATION RELEVANCE**
This checkbox is activated if the item is relevant for service confirmation.
- ▶ **RELEVANCE TO COSTS**
Activating this checkbox will integrate the item with other systems such as SAP ERP. The item is then relevant to costing and is replicated to the SAP ERP system.
- ▶ **SERVICE TYPE**
Service type drives certain elements of pricing on the service item; for example, if any additional price based on weekend or certain holidays needs to be added to the service item, then you can do it by configuring a new service type.
- ▶ **VALUATION TYPE**
Valuation types are also used as a basis for the pricing of services. You can define different prices depending on the qualifications profile for individual service representatives.
- ▶ **SUBJECT PROFILE**
You can assign the subject profile to the item category to drive the multilevel categorization on the service items. This can be further used for reporting.
- ▶ **ACTIVATE COUNTER**
If you've activated the counters, this will enable the counter readings at the header of the business transaction.

[Figure 7.65](#) shows the business transaction category for the sales item where you can configure options in the BILLING DATA/CREDIT, PRICING DATA, QUOTATION DATA, and ROUNDING sections based on your business needs.

Change View "Service - Customizing at Item Level": Details

New Entries

Dialog Structure

- Definition of Item Category
- Assignment of Business Functions
 - Customizing Item

Item Category: ZRVP

Service - Customizing at Item Level

Resource Planning Relevance

Confirmation Relevance

Relevance to Costs

Service Type: [] []

Valuation Type: [] []

Subject Profile: [] []

Activate Counter

Figure 7.64 Customizing Services at the Item Level

Change View "Sales - Customizing at Item Level": Details

New Entries

Dialog Structure

- Definition of Item Category
- Assignment of Business Functions
 - Customizing Item

Item Category: ZRVP Service

Billing Data/Credit

Bill. Relevance: Not Relevant for Billing

Milestone Billing: No Specific Calculation Type

Int. Billing: External

Credit Group: []

Valuation Profile: []

Pricing Data

Pricing-rel.

Statist. Value: System will copy item to header totals

Pricing Indicat.: X Active

Pricing Process: Standard

Quotation Data

Relevance for Quotation: 0 Not Relevant for Quotations

Subsequ. processing: Quotation status is reset

Order Probability %: 100

ATP profile: quot.: No Availability Check

Rounding

Delivery Unit Minimum Quantity

Figure 7.65 Customizing Sales at the Item Level

Item Category Determination

After the item category is configured, the next step within the service order configuration is item category determination. To do this, navigate via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORY DETERMINATION.

Figure 7.66 shows the service transaction type (TRANS.TYPE) mapped to the service item category group (ITMCTYGRP) and usage (ITEM USAGE) to determine the item category (ITEM CAT.) on the service transaction.

Change View "Item Category Determination": Overview

New Entries

Item Category Determination												
Trans.type	Desc.TransT...	ITMCTYGRP	Item usage	MainitmCty	Desc. itm cat.	Item Cat.	Desc.ITMCTY	Alt. IC 1	Desc. alt. IC 1	Alt. IC 2	Desc. alt. IC 2	
ZRVO	Service Order					SRVP	Service	SRVM	Service Part	SRVS	Product	
ZRVO	Service Order	0002 Config.at Ma...				TAC	Sales Config.:Head...					
ZRVO	Service Order	0002 Config.at Ma...		TAC	Sales Config.:...	TAE	Sales Explanation					
ZRVO	Service Order	0002 Config.at Ma...		TAM	Sale: Config.:...	TAC	Sales Config.:Head...					
ZRVO	Service Order	0004 Config.at Co...				TAM	Sale: Config.: Item					
ZRVO	Service Order	NORM Sales Item				SRVS	Product	ZTAN	Sales Item	SRVM	Service Part	
ZRVO	Service Order	NORM Sales Item		TAC	Sales Config.:...	TAE	Sales Explanation					
ZRVO	Service Order	NORM Sales Item		TAM	Sale: Config.:...	SRVS	Product	TAN	Sales Item			
ZRVO	Service Order	SPLA Serv. Plan P...				SRVP	Service					
ZRVO	Service Order	SRVE Service Expe...				SRVE	Expense					
ZRVO	Service Order	SRVE Service Expe...		SRVP	Service	SRVE	Expense	TAN	Sales Item			
ZRVO	Service Order	SRVM ServiceMater...				SRVM	Service Part	SRVS	Product	TAN	Sales Item	
ZRVO	Service Order	SRVM ServiceMater...		SRVM	Service Part	SRVE	Expense					
ZRVO	Service Order	SRVM ServiceMater...		SRVP	Service	SRVM	Service Part	SRVS	Product			
ZRVO	Service Order	SRVP Service prod...				SRVP	Service					
ZRVO	Service Order	SRVP Service prod...		SRVP	Service	SRVP	Service					
ZRVO	Service Order	SRVT Service Tool				SRVT	Tool					
ZRVO	Service Order	SRVT Service Tool		SRVP	Service	SRVT	Tool					

Figure 7.66 Item Category Determination

Copy Control Configuration

Copy control settings are maintained for the transaction type and the item category via the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • COPYING CONTROL FOR BUSINESS TRANSACTIONS. The copy control settings from service order to warranty claim, complaint, return, and confirmations are shown in Figure 7.67.

To further customize the copy control settings and define the copy controls for the item categories, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE COPYING CONTROL FOR ITEM CATEGORIES. You'll see the copy item categories listed, as shown in Figure 7.68.

Change View "Copy Transaction Types - General Control Data": Overview

New Entries

Copy Transaction Types - General Control Data

Src Trans. T...	Tgt Trans. Ty...	Short Description	Copy item no.	ComplRef	Copying...	Copy PO data	Copy sls cycle
ZRVO	CLMA	Outbound Wty Claim	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ZRVO	CRMC	Complaint	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ZRVO	CRMR	Return	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ZRVO	CRMW	Inbound Wty Claim	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ZRVO	KNAR	Knowledge Article	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ZRVO	SRVT	Order Template	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ZRVO	ZRVC	Confirmation	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ZRVO	ZRVO	Service Order	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

Figure 7.67 Transaction Type Copy Control

Change View "Copy Item Categories - General Control Data": Overview

New Entries

Copy Item Categories - General Control Data

SourceCat.	TargItmCat	Description	Copying routine	Copy conditions
SRVE	CLMP	Outbound Wty Claim		D Copy all conditions
SRVE	FAPA	Bill.RqstItm:AmAlloc	BR0001	D Copy all conditions
SRVE	SRTE	Expense		D Copy all conditions
SRVE	SRVE	Expense		D Copy all conditions
SRVE	SVCE	Service Expense		D Copy all conditions
SRVM	CLMP	Outbound Wty Claim		D Copy all conditions
SRVM	COMP	Complaint		D Copy all conditions
SRVM	FAPA	Bill.RqstItm:AmAlloc	BR0001	D Copy all conditions
SRVM	SRTM	Service Part		D Copy all conditions
SRVM	SRVM	Service Part		D Copy all conditions
SRVM	SVCM	Service Part		D Copy all conditions
SRVP	CLMP	Outbound Wty Claim		D Copy all conditions
SRVP	COMP	Complaint		D Copy all conditions
SRVP	COMS	Service Complaint		D Copy all conditions
SRVP	FAPA	Bill.RqstItm:AmAlloc	BR0001	D Copy all conditions
SRVP	SRTP	Service		D Copy all conditions
SRVP	SRVP	Service		D Copy all conditions
SRVP	SVCP	Service Product		D Copy all conditions
SRVS	COMP	Complaint		D Copy all conditions

Figure 7.68 Item Categories for Copy Control

Copy control setting configuration is already covered in [Chapter 5, Section 5.3](#).

Configuring Service Orders with SAP ERP Integrations

In this section, we'll look at the different SAP ERP integrations for time sheets, Controlling, and Logistics.

Time Sheet Integration

The service process time sheet integration involves the following steps to implement into SAP CRM:

1. Navigate to CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR SERVICE TRANSACTIONS • INTEGRATION • REPLICATE SERVICE CHARACTERISTICS RELEVANT TO CONTROLLING. Within this configuration step, you can replicate the characteristics of the service processes that you want to use for controlling in the SAP ERP system.
2. Define plant and storage location assignment with a combination of service organization, service team, and service employee. The assignment applies to service processes in SAP CRM and is used to determine the correct plant and storage location when withdrawing or reserving spare part items. Navigate to CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • ORGANIZATIONAL MANAGEMENT • CROSS-SYSTEM ASSIGNMENT OF ORGANIZATIONAL UNITS • ASSIGN PLANT AND STORAGE LOCATION TO SERVICE ORGANIZATIONAL UNITS.
3. Navigate to MYSAP.COM COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • TIME SHEET INTEGRATION • ASSIGN DATA ENTRY PROFILE. Define the data entry profile that should be used for the transfer of confirmation items from SAP CRM to CATS in the SAP ERP system.
4. Navigate to INTEGRATION WITH OTHER MYSAP.COM COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • TIME SHEET INTEGRATION • DEFINE DERIVATION OF ATTENDANCE TYPE, ACTIVITY TYPE AND COST ELEMENT. Define the activity type for a combination of item category, service type, and valuation type in the confirmation, which should be used when transferring confirmation items from the SAP CRM system to the time sheet in the SAP ERP system.
5. Navigate to TIME MANAGEMENT • WORK SCHEDULES • WORK SCHEDULE RULES AND WORK SCHEDULES • GENERATE WORK SCHEDULES MANUALLY. Within this step, you create the work schedules, which specify the working times of a group of employees. Create employees via Transaction PA30 in the SAP ERP system.
6. Assign an HR personnel number to an SAP CRM employee via the business partner transaction.

Controlling Integration

In this section, we'll walk through the steps to integrate with SAP ERP Controlling (CO). Follow these steps:

1. Navigate to CONTROLLING • INTERNAL ORDERS • ORDER MASTER DATA • DEFINE ORDER TYPES. Within this step, you define the order type, which consists of controlling information.
2. Follow the menu path, CONTROLLING • PRODUCT COST CONTROLLING • COST OBJECT CONTROLLING • PRODUCT COST BY SALES ORDER • PERIOD-END CLOSING • RESULTS ANALYSIS • CREATE RESULTS ANALYSIS KEYS. Here, you define the *results analysis key*, which is a control parameter of *results analysis*. It determines whether a results analysis can be performed on a sales document item, *WBS_element*, and *internal order*.
3. Follow the menu path, INTEGRATION WITH OTHER MY SAP.COM COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • CONTROLLING INTEGRATION • SETTINGS FOR SINGLE-OBJECT CONTROLLING • CREATE AND CHANGE CONTROLLING SCENARIO. Within this step, you define the controlling scenario. The settings made in the scenario are used for creating the internal order. The controlling scenario determines the following parameters for SAP CRM Service CO: costing variants, costing sheet, overhead key, results analysis key, settlement profile, object class, functional area, and usage account assignment.
4. Navigate to INTEGRATION WITH OTHER MY SAP.COM COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • CONTROLLING INTEGRATION • ESTABLISH CONTROLLING TYPE, CONTROLLING LEVEL, AND CONTROLLING SCENARIOS. Specify the *controlling type* and *controlling level* for the combination of a transaction type and a service organization (and the responsible service organization) for a certain validity period.
5. Define the accounting indicator within this step and assign the accounting indicator to the SAP CRM service order or to the SAP CRM service confirmation. It's used in all actual cost postings to differentiate the origin. To do this, navigate to INTEGRATION WITH OTHER MY SAP.COM COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • CONTROLLING INTEGRATION • SETTINGS FOR SINGLE-OBJECT CONTROLLING • SETTINGS FOR USE OF ACCOUNTING INDICATORS • DEFINE ACCOUNTING INDICATOR.
6. Via Transaction KP26, maintain the prices for the activity type.

Logistics Integration

In this section, we'll look at the SAP ERP Logistics integration with SAP CRM service orders. Follow these steps:

1. Navigate to INTEGRATION WITH OTHER MY SAP.COM COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • LOGISTICS INTEGRATION • CREATE AND CHANGE LOGISTICS SCENARIO FOR MATERIAL WITHDRAWAL. Define the logistics scenario for material withdrawal. The standard logistics scenario for material withdrawal is the withdrawal of the spare parts from the technician's consignment stock.
2. Follow the menu path, INTEGRATION WITH OTHER MY SAP.COM COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • LOGISTICS INTEGRATION • SET PURCHASING DOCUMENT TYPES FOR CRM LOGISTICS INTEGRATION. Specify which purchasing document type is to be used for which logistics scenario for procuring materials and services.

In this section, we've covered service process flow with some of the key service quotation, service order, and service confirmation functions. In addition to this, we looked at SAP ERP integrations and SAP CRM service orders.

7.4.4 Configuring Service Confirmations

Similar to a service order, the configuration steps are the same for service confirmations. This section provides the steps to configure the service confirmation transaction type. For example, service confirmation transaction type ZRVC is copied from service confirmation transaction type SRVC and displays its transaction type details and assigned business transaction categories.

The service confirmation transaction type definition shown in [Figure 7.69](#) is similar to any business transaction in SAP CRM. To get here, follow the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. Next, assign the leading business transaction as BUS2000117 SERVICE CONFIRMATION.

[Figure 7.70](#) shows the service confirmation profiles, including the TEXT DET. PROCEDURE, PARTNER DET. PROCEDURE, STATUS PROFILE, ORG. DATA PROF., PARTNER FUNCTION ORG, DATE PROFILE, and the ACTION PROFILE with the appropriate number ranges assigned.

Change View "Definition of transaction types": Details

New Entries [Icons]

Dialog Structure

- Definition of transaction types
 - Assignment of Business
 - Customizing head
 - Assign Blocking Reason
 - Channel

Transaction Type: ZRVC [Confirmation]

General

Description: Service Completion Confirmation

Leading Transaction Category: BUS2000117 Service Confir...

Status Object Type: COB

Contract Determ. Search Auth. Partner

Agreement Determ.

Inactive

Commitment Date: Commitment Date is Not Calculat...

No Change Documents Postprocess. from

Part. Process Permitted

Product Determination

Enter GTIN

Enter Partner Product

Create Product Order Number

Always Check Product ID Product Description/ID Search

Profile for Altern. Identif.

Product Substitution Proced.

Figure 7.69 Service Confirmation Definition (1)

Change View "Definition of transaction types": Details

New Entries [Icons]

Dialog Structure

- Definition of transaction types
 - Assignment of Business
 - Customizing head
 - Assign Blocking Reason
 - Channel

Profile for Altern. Identif.

Product Substitution Proced.

Profiles

Text Det. Procedure: SRV00001 Service

Partner Determ.Proc.: 00000024 SAP Confirmation Header

Status Profile

Org. Data Prof.: 000000000021 SAP Confirmation Org. Data Profile

Partner Function ORG: 0001 Sold-To Party

Date Profile

Action Profile: SERVICE_CONFIRMATION

AP Procedure

Transaction Numbering

No.Range Object: CRM_SRV_CF Confirmation

Int.No.Range No: 01

Ext.No.Range No

Early No. Assgt

Item Numbering

Increment Item

IncrementSubitm

Figure 7.70 Service Confirmation Definition (2)

Only limited business transaction categories are assigned to the service confirmation transaction type; in this case, it's BUS2000115 SALES, BUS2000126 BUSINESS ACTIVITY, and BUS2000116 SERVICE (see [Figure 7.71](#)).



Figure 7.71 Assignment of Business Transaction Categories

[Figure 7.72](#) shows the sales header Customizing details where you can configure functions such as a credit check, pricing determination on the document pricing procedure, and so on.



Figure 7.72 Sales Header Customizing

[Figure 7.73](#) shows the service header customizing details where you can configure functions such as a warranty check, questionnaire, SLA, counters, and so on.

The screenshot shows the SAP CRM 'Change View' for 'Service - Customizing header level'. The window title is 'Change View "Service - Customizing header level": Details'. On the left, there is a 'Dialog Structure' tree with the following items: 'Definition of transaction type', 'Assignment of Business T', 'Customizing header', 'Assign Blocking Reasons', and 'Channel'. The main area displays the following fields:

- Transaction Type: ZRVC [Confirmation]
- Service - Customizing header level
 - Subject Profile: SERVICE SAP Standard Damage
 - Questionnaire: [Empty field]
 - SLA Prof. Det. Proc.: [Empty field]
 - Warranty Check: STANDARD Vendor Profile Service
 - Activate Counter:

Figure 7.73 Service Header Customizing

7.4.5 SAP CRM Service Order and SAP ERP Controlling Integration

As shown previously in Figure 7.56, the service confirmation posts actual costs to SAP ERP Controlling (CO). A service product item is an actual service carried out, and the time to execute this service is transferred through SAP CRM middleware to CATS in the SAP ERP system. Actual cost is then posted to CO. When the service confirmation is created with reference to the service order with an assignment, the working time is copied from the service order to the service confirmation. After the services are confirmed in the confirmation, the status of the resource planning tool is set to COMPLETE.

For the service part item, the goods are issued to complete the service, and the cost is again transferred to CO in SAP ERP. An expense item creates the CO document to transfer the cost to the SAP ERP system.

If the item category of the service confirmation is set to TRANSACTION-RELATED BILLING AFTER COMPLETION, the billing due list is created for the service confirmation item when the status of the confirmed items are set to complete. It's imperative to understand the complete integration of SAP CRM Service to the SAP ERP system.

When a service order is created in SAP CRM, the planned costs and revenue are posted to SAP ERP CO. Service items (e.g., repairs) post only the planned cost and

planned revenue to the controlling object. The service part item does a couple of things; that is, it posts planned costs and planned revenue to the CO object and creates the stock reservation or generates the purchase requisition and purchase order. Sales items are like sales orders in that it replicates as the sales order in the SAP ERP system to complete the fulfillment of the service sales item.

The service confirmation posts the actual costs to the controlling object within SAP ERP. As shown earlier in [Figure 7.56](#), the service item is integrated with CATS to capture the time taken to perform the services. This is posted as an actual cost to the controlling object. Similarly, the service part item performs the goods issued from the inventory and posts the cost of this goods issue to CO object. Within the configuration, you can decide which scenario you want to use for material withdrawal, that is, plant/storage location, customer consignment, or technician consignment. The billing document for all items on the service order posts actual revenue to CO object within the SAP ERP system.

There are two ways you can bill the service transactions: SAP CRM billing and SAP ERP billing:

► **SAP CRM billing**

For SAP CRM billing to occur, you have to make sure the necessary item category configuration has taken place and that the respective SAP ERP item category should be not relevant for billing. Options that are available at the item category include transaction-related billing, transaction-related billing after confirmation, transaction-related billing according to delivery quantity for the product sales item, and delivery-related billing.

► **SAP ERP billing**

In cases where you're using external billing, and the service transactions are to be billed via SAP ERP billing, then you need to make sure that the pricing configuration, master data, item category configuration (billing relevance to external billing), document type configuration, and mapping of the transaction data configuration are in place before using SAP ERP billing.

The configuration of the transaction type and item categories should be carried out in the SAP ERP system via the menu path, SPRO • INTEGRATION WITH OTHER SAP COMPONENTS • CUSTOMER RELATIONSHIP MANAGEMENT • SETTINGS FOR SERVICE PROCESSING • BILLING INTEGRATION • MAP TRANSACTION TYPES AND ITEM CATEGORIES.

SAP ERP Billing

If you're using SAP ERP billing, see SAP Note 813774 – Billing of CRM Service Processes in R/3, which provides additional information. SAP has also provided BAdI CRM_EXT_BILLING in SAP CRM to modify the SAP CRM service transaction before the data is transferred to the SAP ERP system.

BAdI SRV_BILLING_CHANGE is available in the SAP ERP system to modify the sales order data before data import into SAP ERP.

7.5 Service Request Management

Service Request Management provides companies with the ability to fulfill services for their customers and track the progress of the same. The service request can be used in the shared services scenario for cases such as SAP IT Service Management, or it can be used in the customer-facing service scenario. For example, if a customer call falls under delivery of the products or one of the machinery parts isn't working, you can dispatch, set up an approval process, maintain categorization, and more to fulfill the customer service request.

In the service request process, the service provider receives the service requests or complaints regarding any parts or items that the customer is facing an issue with. After the service request is created in the system, it's assigned to the appropriate service skill group to perform the services. A service skill person analyzes the issue and resolves it. This may be offsite or at the customer's location. This will trigger a follow-up transaction of service order and service confirmation based on the issue received. After the services are performed, the service request is completed.

The last step in the process is to define the knowledge database within Knowledge Management (KM) to build the knowledge base and conduct the services more effectively. Service Request Management is available across different channels for example, Interaction Center (IC), E-Services, and Partner Channel Management service.

7.5.1 Business Functions

Service requests are the first stop in logging service issues from customers. Generally, a service request document doesn't need any kind of resource planning

and service parts planning. Service requests are typically used in the SAP IT Service Management scenario, which helps in tracking and monitoring shared services issues. The sections that follow look at the various business functions for service requests.

Multilevel Categorization

You can use multilevel categorization within an SAP CRM service request to categorize the issue received by the customer at various levels. There are four category levels (1–4), and the values in each categories can range from the issue received by the customer to the resolution for the issue. Based on the specific category, you can auto-complete the service request and also determine the item. [Figure 7.74](#) shows the configuration for the service request type ZRVR activated with AUTO COMPLETE and ITEM DETERM.. This is also set for the line item category.

The screenshot shows a table titled "Map Transaction Types to Catalog Categories" with the following data:

Trans. Type	Description	Catalog Categ.	Find Related Obj.	Auto Complete	Item Determ.
ZRVR	Service Request	C Overview of Damage/D...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 7.74 Assign Transaction Types to Catalog Categories

Item and SLA Determination

A service request has the capability to determine the service items based on the categorization. A service item is added to the category modeler at different levels, from the bottom up (i.e., if you've entered the categorization up to level 4, then the system checks to determine the item at level 4; if not found, the system will determine at level 3, etc.).

Item determination on a service request determines the service contract, service level profiles, billing information, and dates. Furthermore, the item determination can happen based on your business needs by implementing BAdI CRM_SERVICEPROD_BADI (Product Assignment for Creation of Service Items).

For SLA determination, you need to define the item determination procedure and assign it to the transaction type. For any other business-specific needs, you can implement the BAdI CRM_SLADET_BADI (Business Add-In for SLA Determination).

Figure 7.75 shows the configuration of the service request to determine the item.

Trans. Type	Description	Active	Catalog Changeable	Item Determination
ZRVR	Service Request	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 7.75 Define Item Determination

Figure 7.76 shows the service request transaction with header information. It shows one of the examples of the service request transactions.

Service Request: 8100003339

Save | Cancel | New | New from Template | Create Follow-Up | Dispatch | More

Details | Edit

General Data	Subject
ID: 8100003339	Category 1:
Description:	Category 2:
Customer: Demo Customer	Category 3:
Reporter:	Category 4:
Employee Responsible: Chandrakant Aganwal	
Service Team: WHS_SF_Lead	

Processing Data	Reason
Status: New	Category 1:
Impact/Urgency:	Category 2:
Recomm. Prio/Prio.:	Category 3:
	Category 4:

Dates
Requested Start: 07/26/2014 15:54
Requested End: 07/29/2014 15:54
First Response By:
Due By:

Type:

Reference Objects
Installed Base:
Component:
Object/Product:

Relationships
Related Problem:
Related Request for Change:
Related Knowledge Article:

Figure 7.76 Service Request Transaction

Dispatch

You can dispatch a service request to different service skill groups based on the rule modeler setup. For example, if your business scenario is to escalate the service request to the different service group based on the categorization (i.e., if the categorization is under-delivery and needs to be escalated to the warehouse service skill group), then you can implement the dispatch functionality in the service request.

Master Service Request

A master service request is a one-order object that was introduced in SAP CRM 7.0. It's referred to as "problem." This is used in SAP IT Service Management scenarios where multiple incidents/service requests have been received, and a problem needs to be created. In this case, you can link multiple service requests to the problem transaction type. After the problem is resolved, the linked service request is completed automatically.

The leading business transaction category for the master service request is BUS2000224 CRM Master Request. SAP has provided two transaction types for the master service request: ITPR – Problem (IT Service Mgmt.) and ITPT – Problem Template (IT Service Mgmt.). The leading business transaction category is BUS2000224 CRM Master Request.

Knowledge Management

KM is one of the integration elements that can be activated to create knowledge articles as follow-up documents to capture the resolution of the problem that has occurred. This can then be used by other service employees later to refer to the solution for the same problem.

Email Response Management System

You can use service request integration with Email Response Management System (ERMS). Emails sent to the service desk through ERMS automatically generate a service request, and subsequent replies are also automatically linked to that service request. For this to happen, you need to configure the ERMS functionality to create the service request through emails.

7.5.2 Configuring Service Requests

In this section, we'll walk through the steps to configure a service request transaction type. As an example, we'll use the service request transaction type ZRVR copied from transaction type SRVR. The service request configuration shows the transaction type details and the business transaction categories assigned to it. To begin defining the transaction type, navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES.

The service request transaction type shown in [Figure 7.77](#) is similar to any business transaction in SAP CRM. Here, you assign the leading business transaction as BUS2000223 CRM SERVICE REQUEST and fill in the values for the profiles and number range assignments.

Change View "Definition of transaction types": Details

Transaction Type: ZRVR [Service Request]

General

Description: Service Request

Leading Transaction Category: BUS2000223 CRM Service Requ...

Status Object Type:

Contract Determ: F

Inactive:

No Change Documents

Postprocess. from:

Part. Process.Permitted:

Template Type:

Product Determination

Product Description/ID Search

Profiles

Text Det. Procedure	IT000001	Service Request
Partner Determ.Proc.	IT000001	ITSM Incident Header
Status Profile	IT000004	
Org. Data Prof.	000000000008	SAP Service Org. Data Profile (Header)
Partner Function ORG	0001 Sold-To Party	
Date Profile	IT0000000002	
Action Profile		
AP Procedure		
Obj. Ref. Prof.		

Figure 7.77 Service Request Transaction Type

Only a limited number of business transaction categories are assigned to the service request transaction type. In this case, it's BUS2000115 SALES, BUS2000116 SERVICE PROCESS, BUS2000126 BUSINESS ACTIVITY, , and BUS2000223 CRM SERVICE REQUEST (see [Figure 7.78](#)).

[Figure 7.79](#) shows the item determination configuration at the service request transaction type. To determine the item on the service request, you need to activate the checkboxes for the service request header in the ITEM DETERMINATION section.

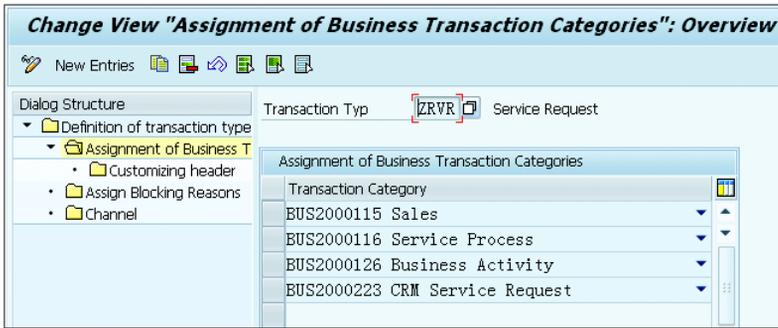


Figure 7.78 Assignment of the Business Transaction Categories

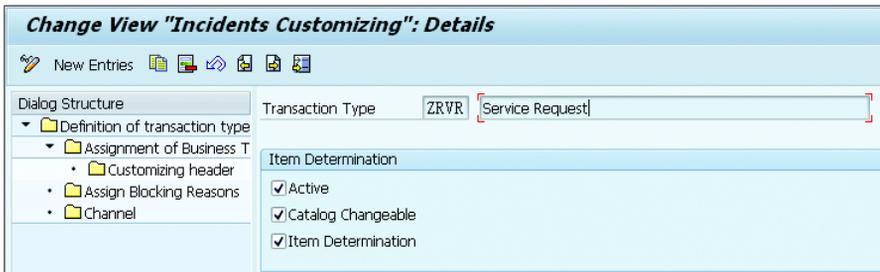


Figure 7.79 Service Request Header Details

The standard item category provided by SAP CRM for the service request item is SQRI – Service Request Item with Object Type – BUS2000140 CRM Service Product Item.

Item Assignment Block

Out of the box, the item assignment block for the service request isn't available, and the item assignment happens in the background if the necessary configuration is maintained. To make the item assignment block visible, you need to access the service request's header view in the Component Workbench and switch the relevant fields of the BTADMINI group to make it visible.

In this section, we've discussed Service Request Management business functions and configuration. In the next section, we'll look at the processing of complaints and returns in SAP CRM Service.

7.6 Complaints and Returns

Customers calling about complaints or returns are logged as complaints in SAP CRM Service. From complaints, you can trigger credit memo, debit memo, free of charge, substitute delivery, and return request functions. Complaints and return service capabilities include KM, complaints and returns processing, and SAP Warehouse Management (WHM) integration. Complaints and returns processing within SAP CRM allows an organization to log any kind of product issues or the services sold to the customer.

Complaints processing is for external customers. This process typically revolves around deliveries, damaged products, goodwill, misdirected freight, pricing issues, and so on. In addition, you can process inbound warranties with complaints because warranty determination takes place on the complaints document when the customer calls in for any issue.

Similar to complaints, a *return* is a complaints object that can be used to return any products that are sold to a customer and are presented as having defects or issues. The material movement takes place in the SAP ERP system. Complaints can be used in different SAP CRM applications such as WebClient UI, IC, E-Services, and SAP CRM Mobile Service.

7.6.1 Business Functions

Different functions are available in the SAP CRM system for complaints documents that can be implemented to achieve different business needs:

► Referencing document to create complaints

SAP CRM enables you to create the complaints document without a reference or with a reference to different business objects, such as an SAP CRM billing document, an SAP ERP sales order, and an SAP ERP billing document. All information from the reference document is copied to the complaints document. This maintains the link between what is sold to the customer and how many quantities you want to return or credit the customer based on the billing or the sales order document. You need to configure and implement BADI CRM_COPY_BADI_EXTERN to activate the functionality when you want to refer the SAP ERP transactions for creating complaints.

▶ **Product check**

For any products that needs to be returned, you can have a check to determine whether the products are applicable for return or not.

▶ **Quantity check**

In addition to the product check, you can execute a quantity check to determine whether the quantity on the complaint or the return document is more than the maximum allowed from the sales order or the invoice sold to the customer. You can then control whether you want to allow that or not based on the item category configuration.

▶ **Warranty determination**

Warranty determination function is also available in complaints. If a warranty exists for the product the customer purchased, then the warranty determination takes place, which can then be claimed by the customer. To activate the warranty determination on complaints, you need to configure the complaints transaction and assign the warranty check profile.

▶ **Contract determination**

Similar to warranty determination, you can determine service contracts on the complaints document. Once the service contract is determined, the pricing conditions are copied in the complaints from the service contracts. To achieve this functionality, you need to configure the complaints transaction type for the contract determination.

▶ **Categorization**

Categorization is a key to any service transaction. Multilevel categorization is also available in the complaints document to report the category of the issue. This way, you can have levels of the issue category on the complaints document, which can be used for reporting purposes. These categories can be over-delivery, under-delivery, damaged products, goodwill, misdirected freight, pricing issues, and so on.

▶ **Escalation**

Based on your business needs, you can escalate the complaints to a different department for review and approval.

▶ **Follow-on transaction**

Different actions trigger the follow-on transaction. SAP has provided credit memo, debit memo, returns request, substitute delivery, and task creation as standard actions that trigger from complaints.

Figure 7.80 shows the actions that can be triggered automatically based on the schedule condition or manually from the complaints item.

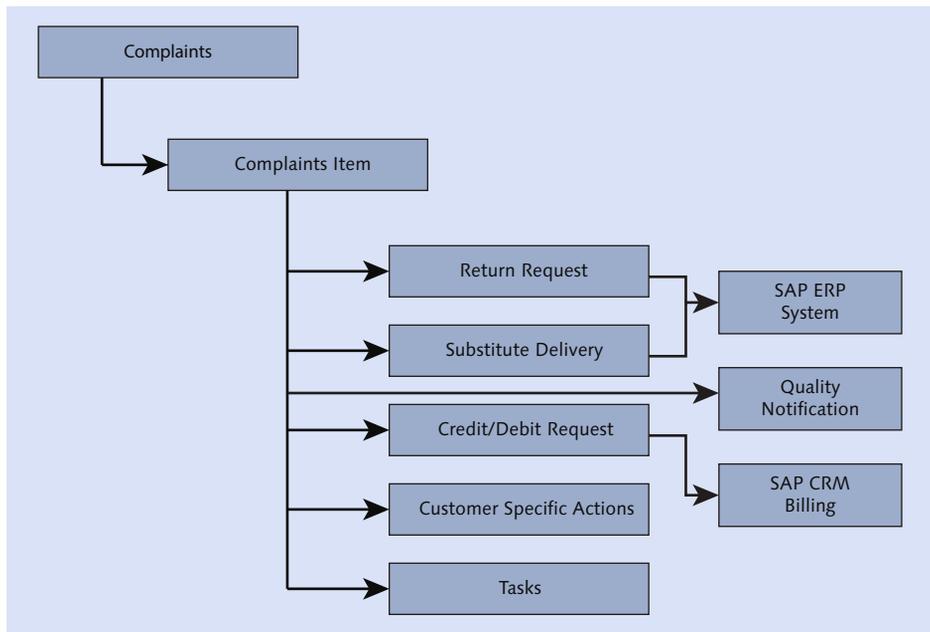


Figure 7.80 Complaints Document Flow Diagram

Multiple items on the complaints can include return, substitute delivery, credit, or debit. These are created by SAP-delivered actions, listed here:

- ▶ The return request subitem is created with the Returns Request – RETURN_REQ action.
- ▶ The substitute delivery subitem is created with the Substitute Delivery – SUBST_DEL action.
- ▶ The credit memo subitem is created with the Credit Memo – CREDIT action.
- ▶ The debit memo subitem is created with the Debit Memo – DEBIT action.
- ▶ The task is created with the Create Task – TASK_ITEM action.
- ▶ The SAP Quality Management notification is created in SAP ERP when triggering the QM_NOTIFICATION action on the complaints item.

Similar to Figure 7.80, Figure 7.81 shows the returns document flow to SAP ERP and SAP CRM billing by triggering actions on the returns line item.

Creating Complaints

When creating the complaints document, the complaints document alone isn't replicated to SAP ERP until you trigger the actions returns or substitute delivery subitem.

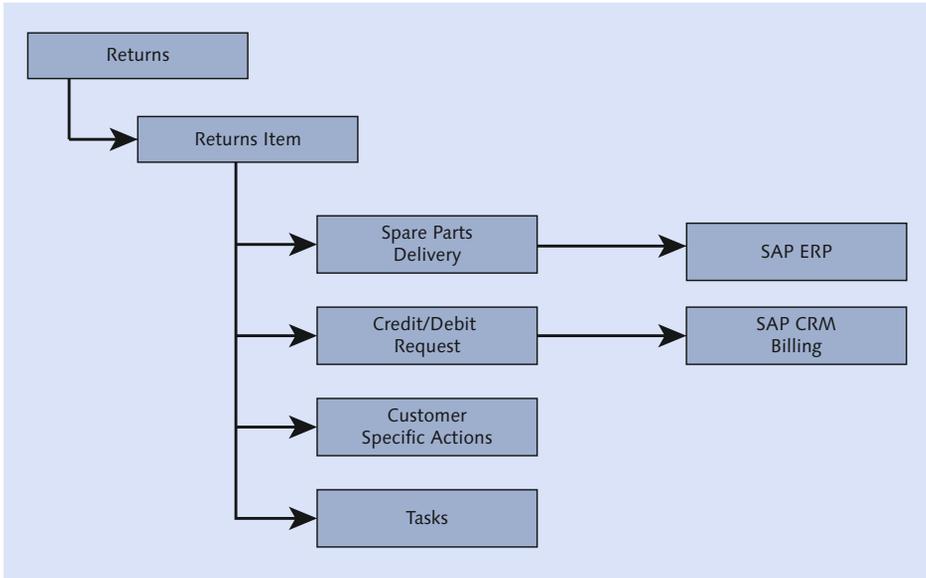


Figure 7.81 Returns Document Flow Diagram

Transaction Type and Item Category

For replication to work from SAP CRM to SAP ERP, you need to maintain transaction type and item category configuration in sync between the two systems; otherwise, the replication of the returns document will fail.

7.6.2 Process Overview

Figure 7.82 shows the complaints and returns flow process. This process involves the following steps:

- ❶ A customer calls to log an issue with the product or service purchased from an organization.
- ❷ A complaint transaction is created for the issue by the customer service representative.

- ③ Based on the issue logged by the customer, the categorization of the issue is added on the complaints document. In most cases, different categories are handled by different departments. After the complaint is escalated to the respective group, it's analyzed by the service team.
- ④ After the analysis is completed, a return is issued to the customer.
- ⑤ The product is received by the organization, and the replacement product is sent to the customer.
- ⑥ A credit memo is issued to the customer based on the service representative's analysis.
- ⑦ The service manager analyzes the reason for the complaint and tries to reduce the cause in the future to attain maximum customer satisfaction.

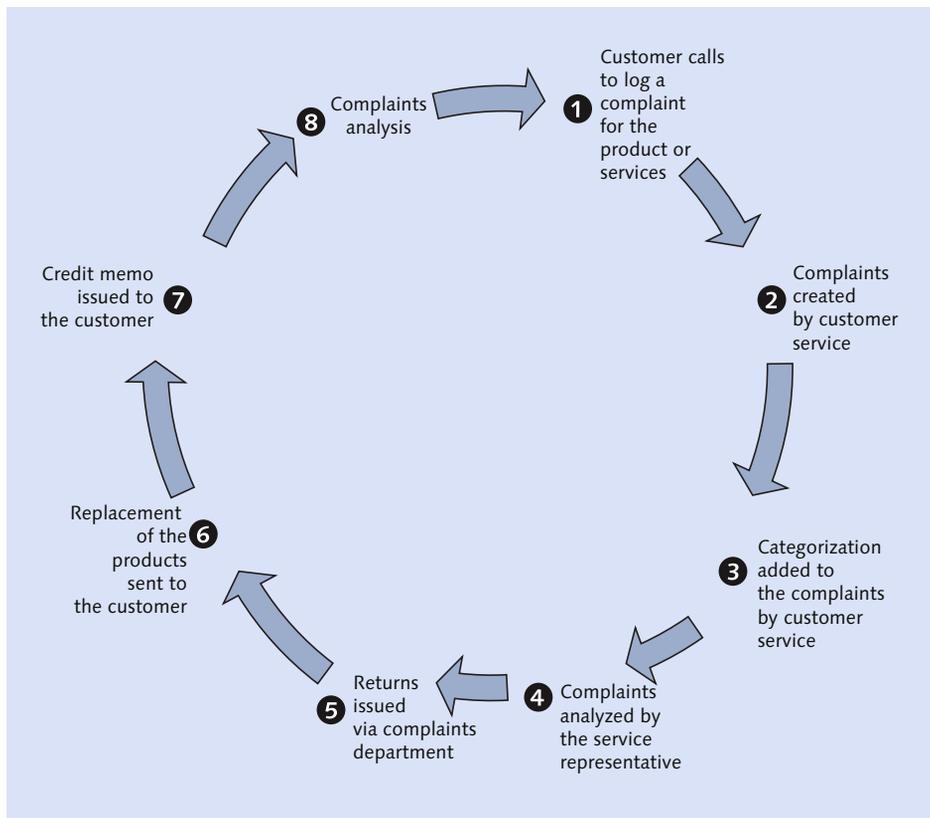


Figure 7.82 Complaints Process Flow

- 8 The complaints and returns process ensures that the customer is satisfied with a quality product and that any issues are logged into the system to track faulty products.

7.6.3 Configuring Complaints and Returns

For an example, let's say a company sold a product to a customer, but during delivery and transportation, the product is damaged. The customer then receives the product and calls to log a complaint and request a return for credit. This is a typical scenario involving complaints and returns.

The following steps walk through the configuration that must be completed to address this scenario:

1. The first step is to configure the complaints transaction type copied from the standard complaints Transaction CRMC. You can do this by navigating via the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE TRANSACTION TYPES. The leading business transaction is BUS2000120 COMPLAINTS, and the rest of the configuration on the transaction type is the same as any other transaction in an SAP CRM system (see [Figure 7.83](#)).

Change View "Definition of transaction types": Details

New Entries

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Transaction Type: ZRMC **Complaint**

General

Description: Complaint

Leading Transaction Category: BUS2000120 Complaints

Status Object Type:

Contract Determ: Search Auth. Partner:

Agreement Determ.:

Inactive:

Commitment Date: Commitment Date is Not Calculated

No Change Documents Postprocess. from:

Creation with Ref. Possible Part. Process. Permitted:

ATP Type:

Trans. Classification:

Product Determination

Enter GTIN

Enter Partner Product

Create Product Order Number

Always Check Product ID Product Description/ID Search

Profile for Altern. Identif.:

Product Substitution Proced.:

Figure 7.83 Complaints Transaction Type – ZRMC (1)

Complaints Transaction

If you want to create the complaints transaction with reference to an SAP ERP transaction or sales order, you need to activate the CREATION WITH REF POSSIBLE field in the complaints transaction type configuration.

Figure 7.84 shows transaction profiles and transaction numbering configuration on the transaction type ZRMC.

Change View "Definition of transaction types": Details

Dialog Structure

- Definition of transaction type
 - Assignment of Business T
 - Customizing header
 - Assign Blocking Reasons
 - Channel

Profiles

Text Det. Procedure	COMP0001	Complaints
Partner Determ.Proc.	00000017	Complaint
Status Profile	CRMCOMPL	
Org. Data Prof.	000000000012	Standard Profile (Header) for Complaints
Partner Function ORG	0001 Sold-To Party	
Date Profile	COMPLAINT	
Action Profile	COMPLAINT	
AP Procedure		
Obj. Ref. Prof.		
Ext. Ref. Profile		
Aprv. Det. Procedure		

Transaction Numbering

No.Range Object	CRM_SALES	CRM Sales Trans.
Int.No.Range No	01	
Ext.No.Range No		
<input type="checkbox"/> Early No. Assgt		

Item Numbering

Increment Item	1000
IncrementSubitm	10

Figure 7.84 Transaction Type Definition (2)

- Only limited business transaction categories are assigned to the complaints transaction type; in this case, it's BUS2000115 SALES, BUS2000116 SERVICE PROCESS, BUS2000120 COMPLAINTS, and BUS2000126 BUSINESS ACTIVITY (see Figure 7.85).
- Figure 7.86 shows the customization screen for the header level. Add the appropriate values here as well.

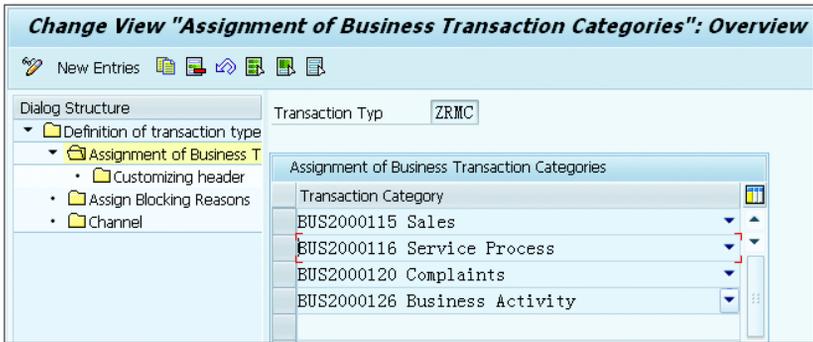


Figure 7.85 Assignment of Business Transaction Categories

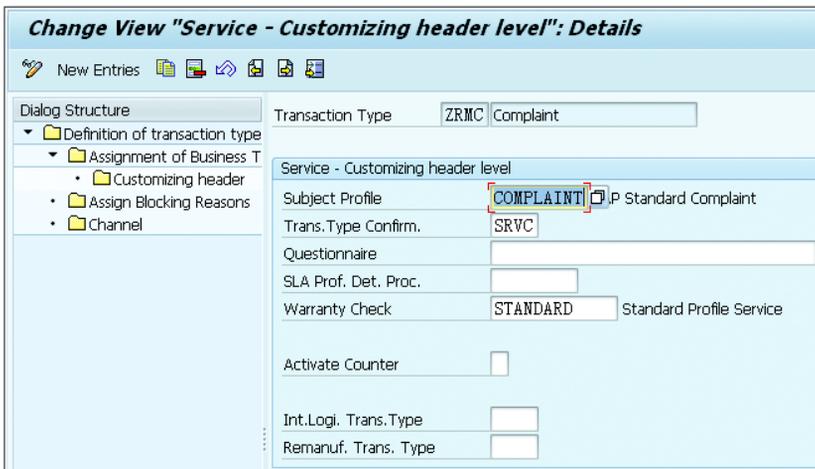


Figure 7.86 Service Header Customizing

4. Create the item category and configure the item category determination. To create the item category, navigate to CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORIES. The standard item category provided by SAP CRM for the complaints item is COMP – Complaint Item with the item object type – BUS2000160 CRM Customer Complaints Item. You can copy and create your own item category. In our example, we'll use item category determination for transaction type ZRMC – Complaints.

5. To create the item category determination, navigate to CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • BASIC SETTINGS • DEFINE ITEM CATEGORY DETERMINATION. [Figure 7.87](#) shows the item category determination for a complaints transaction. The MAINITMCTY is COMP – COMPLAINT, and the subitem categories are REN – RETURN REQUEST, G2N – CREDIT MEMO, L2N – DEBIT MEMO, and TANN – FREE OF CHARGE SUBS.

New Entries: Overview of Added Entries

New Entries

Item Category Determination

Trans.type	Desc.TransT...	ItmCtyGrp	Item usage	MainItmCty	Desc. itm cat.	Item Cat.	Desc.ItmCty	Alt. IC 1	Desc. alt. IC 1
ZRMC	Complaint			COMP	Complaint	COMP	Complaint		
ZRMC	Complaint		CRED Credit Memo	COMP	Complaint	G2N	Credit Memo		
ZRMC	Complaint		DEB Debit Memo	COMP	Complaint	L2N	Debit Memo		
ZRMC	Complaint		REPL Substitute D.	COMP	Complaint	TANN	Free of Charge Subs.		
ZRMC	Complaint		RETR Returns Auth.	COMP	Complaint	REN	Return Request		
ZRMC	Complaint	NORM Sales Item		COMP	Complaint	COMP	Complaint		
ZRMC	Complaint	NORM Sales Item	CRED Credit Memo	COMP	Complaint	G2N	Credit Memo		
ZRMC	Complaint	NORM Sales Item	DEB Debit Memo	COMP	Complaint	L2N	Debit Memo		
ZRMC	Complaint	NORM Sales Item	REPL Substitute D.	COMP	Complaint	TANN	Free of Charge Subs.		
ZRMC	Complaint	NORM Sales Item	RETR Returns Auth.	COMP	Complaint	REN	Return Request		
ZRMC	Complaint	SRVM ServiceMater...		COMP	Complaint	COMP	Complaint		
ZRMC	Complaint	SRVM ServiceMater...	CRED Credit Memo	COMP	Complaint	G2N	Credit Memo		
ZRMC	Complaint	SRVM ServiceMater...	DEB Debit Memo	COMP	Complaint	L2N	Debit Memo		
ZRMC	Complaint	SRVM ServiceMater...	REPL Substitute D.	COMP	Complaint	TANN	Free of Charge Subs.		
ZRMC	Complaint	SRVM ServiceMater...	RETR Returns Auth.	COMP	Complaint	REN	Return Request		
ZRMC	Complaint	SRVP Service prod.		COMS	Service Compl.	COMS	Service Complaint		
ZRMC	Complaint	SRVP Service prod.	CRED Credit Memo	COMS	Service Compl.	G2S	Credit Memo		
ZRMC	Complaint	SRVP Service prod.	DEB Debit Memo	COMS	Service Compl.	L2S	Debit Memo		

Figure 7.87 Complaints Item Category Determination

6. Next, create the complaints document categorized as damaged to trigger a return. [Figure 7.88](#) shows the complaints document with multilevel categorization showing CATEGORY 1: DAMAGED, CATEGORY 2: TRANSPORTATION, and CATEGORY 3: RETURNS. Based on the issue received, you can populate the categorization, which helps in complaints analytics, and work on them to reduce the complaints from the customer. [Figure 7.88](#) also shows the RETURN REQUEST subitem, which is triggered via returns actions on the line item. This return line is replicated to SAP ERP to bring the goods back to the organization.
7. [Figure 7.89](#) shows the return item replicated back to SAP ERP where further return goods movement is carried out, and credit is issued to the customer. The returns delivery is created, and the credit memo is created with reference to the returns delivery or from the returns document.

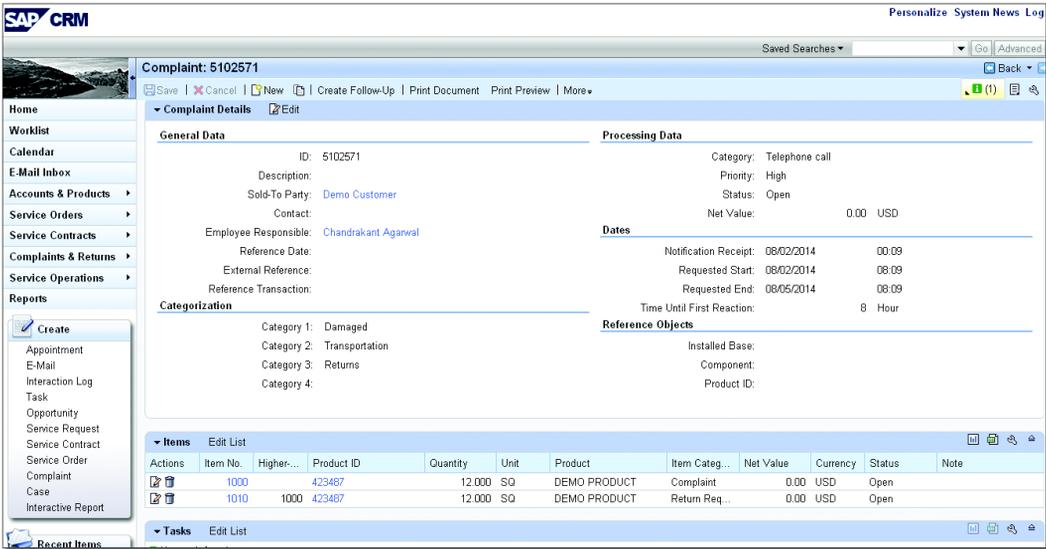


Figure 7.88 Complaints Document

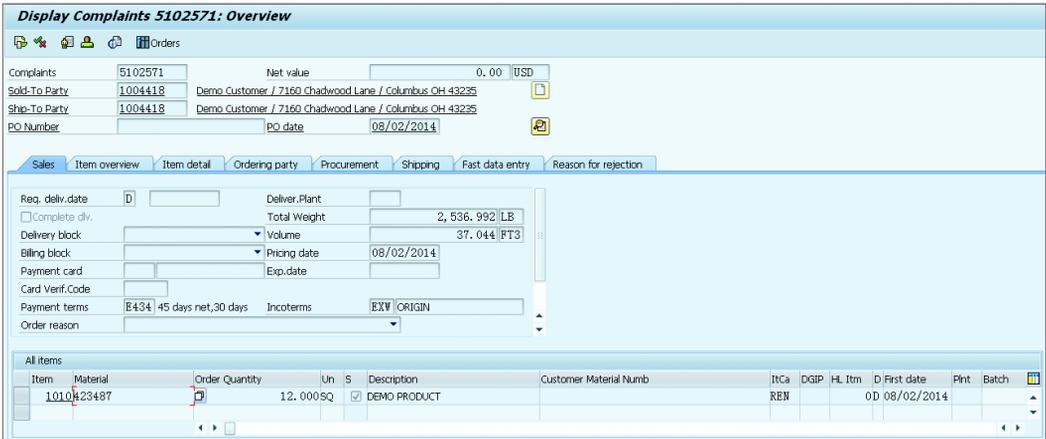


Figure 7.89 SAP ERP Return Item

7.6.4 Complaints BADIs

There are a number of complaints BADIs that are important to understand. They include the following:

► **Create complaint with reference to external transaction**

The Create Complaint with Reference to External Transaction (CRM_COPY_BADI_EXTERN) BAdI needs to be implemented if you want to reference any external transactions. These transactions can be SAP ERP sales orders or SAP ERP billing documents. Before you implement this BAdI, you need to do the following:

- Define the business object type for the transaction that needs to be referenced. SAP has provided standard business object type BILLDO BILLING DOCUMENT as an example (see [Figure 7.90](#)). To do this, navigate to CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR COMPLAINTS • INTEGRATION • TRANSACTION REFERENCING • DEFINE OBJECT TYPES FOR TRANSACTION REFERENCE.
- Assign the complaints business object type to the transaction type. You can do this by navigating to CUSTOMER RELATIONSHIP MANAGEMENT • TRANSACTIONS • SETTINGS FOR COMPLAINTS • INTEGRATION • TRANSACTION REFERENCING • ASSIGN BUSINESS OBJECT TYPES TO TRANSACTION TYPES (see [Figure 7.91](#)).

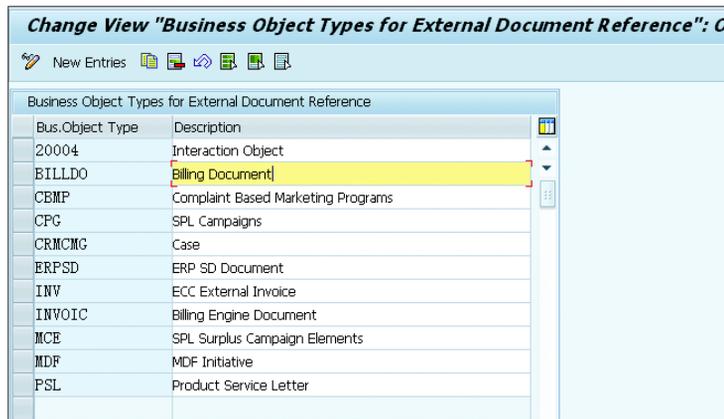


Figure 7.90 Define Object Types for Transaction Reference

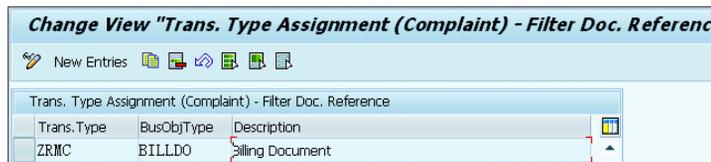


Figure 7.91 Assign Business Object Types to Transaction Types

► **Data mapping BAdI to create quality notification in SAP ERP**

When transferring data from an SAP CRM transaction or a transaction item to a quality notification in the SAP ERP system, you can use this BAdI to modify data and influence the RFC destination before the transfer is completed. A quality notification in the SAP ERP system is created from data in a complaint or a complaint item in SAP CRM by using the action method `QM_NOTIFICATION`. This QM notification method calls the function module Create Quality Notification (`CRM_COMPL_QM_NOTIF_CREATE`) to create the QM notification in SAP ERP, and this function module calls BAdI `CRM_COMPL_QM_NOTIF` method `MAP_CRM_TO_BAPIMTCS` of the action framework to map the data of the transaction between SAP CRM and SAP ERP.

In this section, we've discussed the various business functions, processes, and configurations that take place for complaints and returns. We also looked at how implementing the reference BAdI helps when referring to an SAP ERP transaction to close the loop on customer issues and enable better analytics.

7.7 Service Resource Planning

Service resource planning helps resource planners plan and manage their service employees effectively within SAP CRM. Resource planning optimizes the assignments of service employees to the service order items effectively. By using the service resource planning tool, you can comply with any customer's critical issues on time and with the right resources. This tool also helps in fulfilling SLAs assigned to each of the services to be performed.

7.7.1 Business Functions

To perform services, you need to plan the resources and assign them to the services accordingly. This can be done manually or automatically. There are different functions that you need to carry out within resource planning to make this happen.

Before performing any of these functions, you need to integrate the planning of the service line items into the Resource Planning Application (RPA) to generate the demand for each of the service order line items. To integrate the service line item into the RPA, you need to make sure that service line items are set for resource

planning within the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • WORKFORCE DEPLOYMENT • GENERAL SETTINGS FOR SERVICE RESOURCE PLANNING • BUSINESS ADD-INS (BADIs) • SELECT SCHEDULING ENGINE SELECT WFDS.

The following points should be considered for planning resources to perform services:

► **Resources**

Resources can be employees or external service providers assigned to perform the services. While assigning the resources to the demand, SAP CRM checks whether the resource has the qualifications and availability to perform the services. It also checks that services can be rendered at the location and service area.

► **Service arrangement**

Service arrangement contains all details around the resources to perform the services. Details include service areas, job functions, availability templates, overtime limit profiles, and qualifications.

► **Demands**

Demands are the service line that a service technician needs to perform to fix any customer product issue. Demands are created from the service order line item and the project roles created in cProjects. You need to specify the demand types for resource planning within the configuration.

► **Time allocations**

Time allocations provide a schedule to resource providers to see whether they can perform services based on their availability. You can integrate SAP ERP Human Capital Management (SAP ERP HCM) with the WFM server to get availability data and process the HR data directly within the service resource planning tool.

► **Assignments**

After the demand is generated and the resources are proposed, resource assignment takes place to perform the services for each of the service order line items.

BAdI CRM_SRV_SDL is an interface to the scheduling engine, which sends and receives relevant data to carry out the resource planning within the RPA. You can also use a third-party scheduler to schedule the resources for the services to be performed.

7.7.2 Process Overview

Figure 7.92 shows the service process with the service resource assignment.

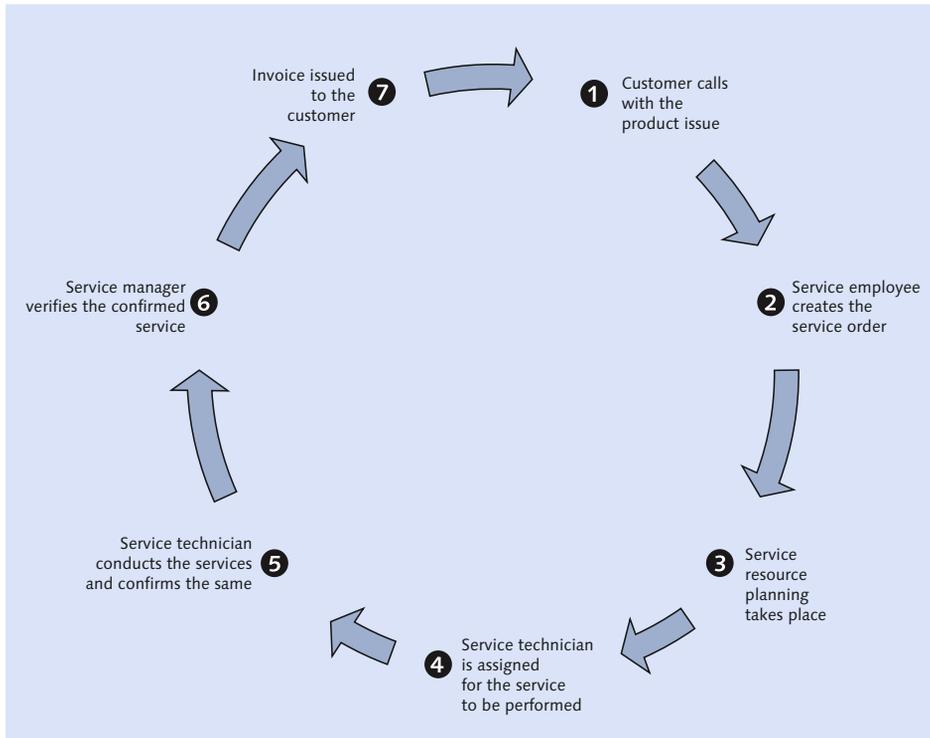


Figure 7.92 Service Process with the Service Resource Assignment

Within this process, there are a number of steps involved:

- ❶ A customer calls a service provider with a product issue.
- ❷ The service employee creates the service order to log the product issue from the customer. If a service contract exists, the contract determination occurs on the service order, and respective conditions are copied to the service order.
- ❸ A service employee or service manager plans the resource to perform the services.
- ❹ After the service demand is created and the resource assignment is proposed, then the resources are assigned.

- ⑤ A service technician performs the services either at the customer site or in-house by confirming the services.
- ⑥ After the services are confirmed, the service manager verifies the confirmed services and any spare parts used.
- ⑦ The invoice is issued to the customer.

In this section, we discussed the usage of the RPA within the service order process along with its key functions. You can further integrate SAP ERP HCM with the RPA to fetch the resource availability data. This topic also shows the resource planning system landscape with the usage of the WFM server.

7.8 Summary

In this chapter, we provided a gamut of service scenarios to help you better understand the service process flow. We looked at the various service functions that are commonly used in the service industry. In addition, we discussed how to perform services after any machinery installation and the follow-up processes after a sale or service. In the next chapter, we'll provide information on the Web-Client UI in SAP CRM.

The SAP CRM WebClient UI is a user interface that works as a role-based workspace providing easy-to-use navigation for business users.

8 WebClient UI

Traditionally, to access different transactions within SAP systems, the SAP Graphical User Interface (SAP GUI) is used, which requires a user to enter different transaction codes to access transactions. This, as you can imagine, is a bit cumbersome to remember.

To remedy this shortcoming, SAP introduced the WebClient UI with SAP CRM 2006s. The WebClient UI is a web UI that allows different people with various roles in an organization to use and navigate different transactions without having to remember any transaction codes. The WebClient UI enables users to automatically identify an account for the Interaction Center (IC) applications and access marketing, sales, and service functionality for SAP CRM.

In this chapter, we'll provide an in-depth look at the WebClient UI. Before diving deep into the business role concepts, in [Section 8.1](#) and [Section 8.2](#), we'll look at the WebClient UI framework and architecture to better understand the core concepts of building the WebClient UI.

8.1 Framework

The WebClient UI framework provides an overall view of SAP CRM's web application. The framework is designed to suit a business user's needs and configure and customize applications with limited effort and less complexity. In this section, we'll look at the key functions, layout, and different layers within WebClient UI.

8.1.1 Key Functions and Layout

The WebClient UI framework is made up of the following different key UI functions:

- ▶ **UI configuration**

The UI configuration corresponds to the design layer and UI configuration tool.

- ▶ **Business role configuration**

Business role configuration corresponds to the changes in the work centers based on your role in an organization and authorization management.

- ▶ **User experience/productivity**

The user experience/productivity function corresponds to personalization options and a clear/simple UI concept.

- ▶ **Development tools**

The development tools correspond to the Component Workbench, Web Services tool, and the business object layer (BOL) browser (i.e., if you want to add any new database fields and data retrieval into this field based on your specific business logic).

- ▶ **Extensibility**

Extensibility corresponds to the Application Enhancement Tool (AET), rapid applications, and mashups.

Each of these areas are controlled by a specific group of users within an organization, for example an administrator, power user, end user, or developer/technology consultant.

Within the WebClient UI framework, it's imperative to understand the WebClient UI screens and how these screens are divided into different areas. [Figure 8.1](#) shows the WebClient UI screen divided into three areas for the business role SALESPRO:

- ▶ **Header area**

The header area consists of information such as the message bar, logo area, SAVED SEARCHES option, PERSONALIZE link, work area title, and the page history within the BACK button.

- ▶ **Navigation bar**

The navigation bar consists of work centers, including HOME, WORKLIST, CALENDAR, and E-MAIL INBOX, as well as direct links to CREATE transactions.

► Work area

The work area consists of different views within the component and different page types, such as work center page, overview page, edit page, and search page.

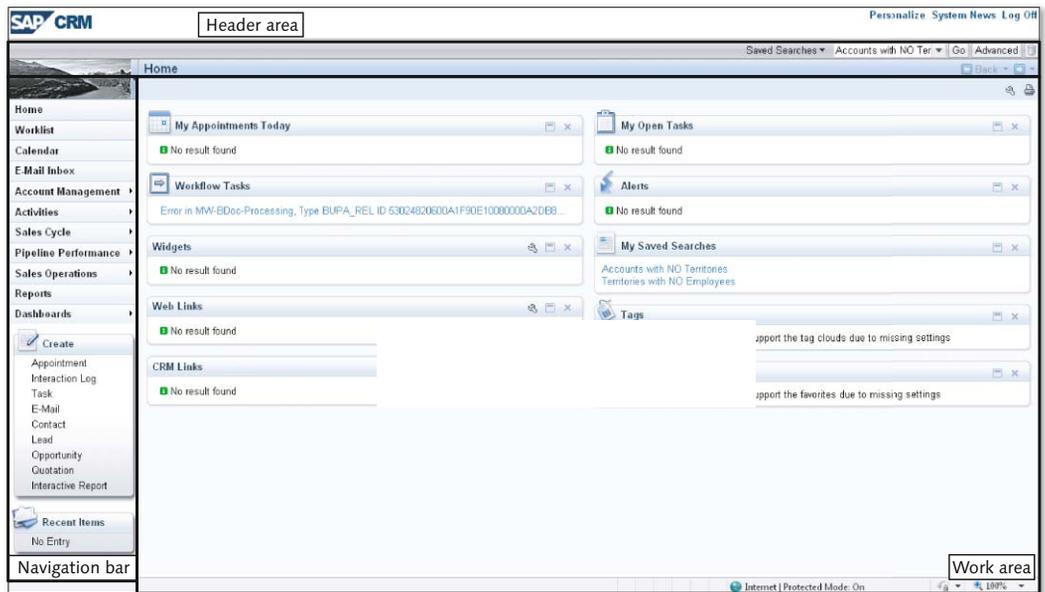


Figure 8.1 WebClient UI Screen

8.1.2 Layers

The WebClient UI is a *Business Server Pages (BSP) application* divided into three different layers: the presentation layer, business layer, and business engine.

The *presentation layer* is based on the Model View Controller (MVC) concept that receives the request by the user to the controller. The request is passed from the controller to the model, which is connected to the business layer. The business logic isn't written in the presentation layer but should be written on the SAP CRM backend.

The *business layer* consists of the *business object layer (BOL)* and the *Generic Integration Layer (GenIL)*. The BOL consists of the business objects that don't store any data but pass the data from the presentation layer to the GenIL. The GenIL handles the data transfer between the SAP CRM database and BOL. It triggers the

Application Programming Interface (API) (business logic) to get the required data to BOL from the SAP CRM database.

The *business engine* consists of the business logic (i.e., APIs for SAP CRM business objects). [Figure 8.2](#) shows a diagram of the WebClient UI layers starting with the presentation layer and followed by the business layer and business logic engine.

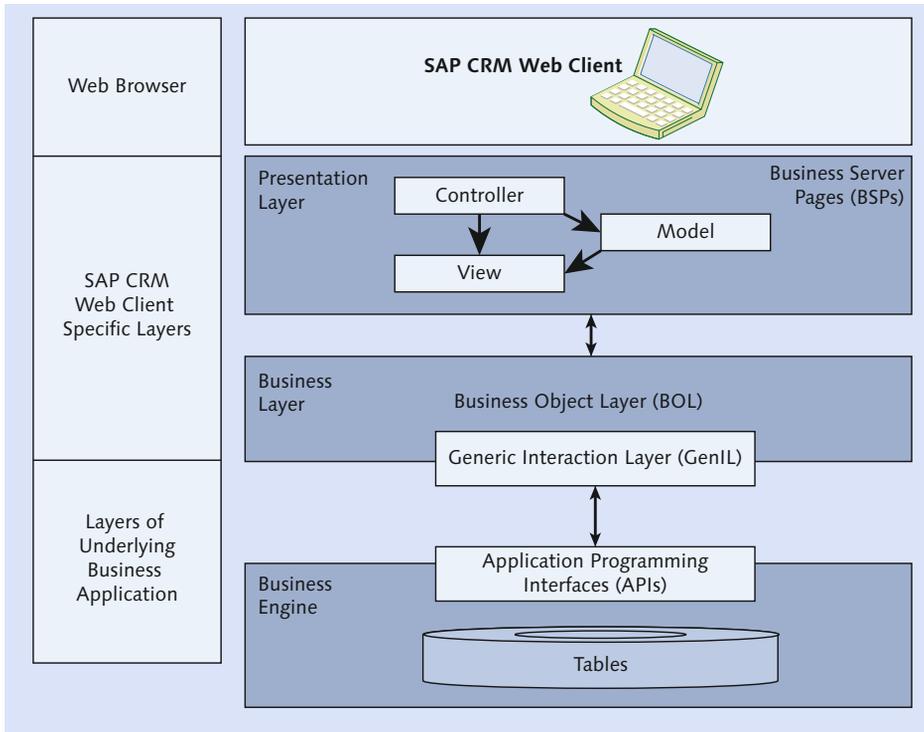


Figure 8.2 SAP CRM WebClient UI Layers

8.1.3 Component Workbench

The WebClient UI Component Workbench is used to develop UI components within the WebClient UI framework. UI components vary by object and can be accessed via Transaction BSP_WD_CMPWB in SAP CRM.

[Figure 8.3](#) shows the COMPONENT STRUCTURE BROWSER screen with details on the components. It includes the COMPONENT CONTROLLER, WINDOWS, CUSTOM

CONTROLLERS, VIEWS (including different views and view sets), and PAGES WITH FLOW LOGIC. Here you can edit and configure views based on your business needs.

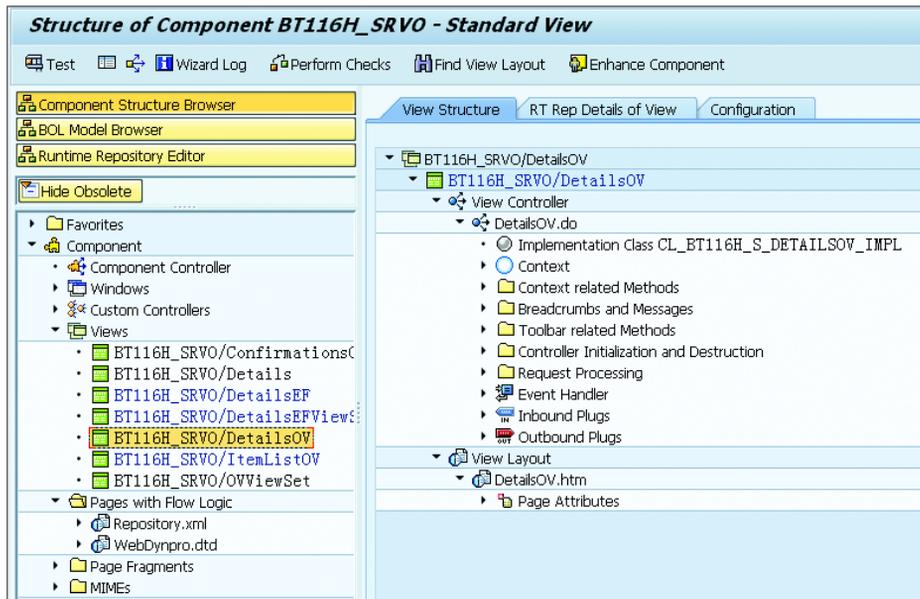


Figure 8.3 Component Structure Browser

Figure 8.4 shows the BOL MODEL BROWSER screen, which connects the UI component via the runtime repository. The BOL Model Browser doesn't store any data for the business objects and instead only passes the information to the GenIL, which then connects to the APIs in the SAP CRM backend. Different types of objects are listed under the BOL Model Browser: ROOT OBJECTS, ACCESS OBJECTS, DEPENDENT OBJECT, ABSTRACT OBJECT, QUERY OBJECTS, VIEW OBJECTS, and DYNAMIC QUERY OBJECTS.

Figure 8.5 shows the RUNTIME REPOSITORY EDITOR screen, which links views to the main window and links different views together. You assign the views to the view sets. The navigational links within the runtime repository connect the views with the inbound and outbound plug, which helps the user navigate between different views.

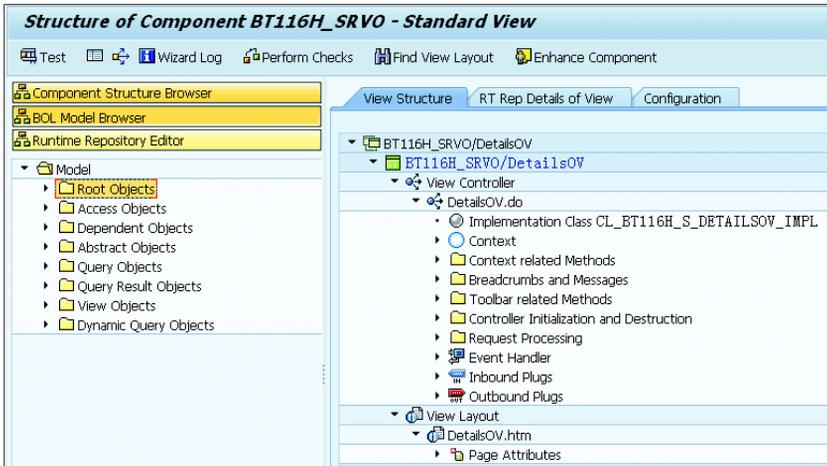


Figure 8.4 BOL Model Browser

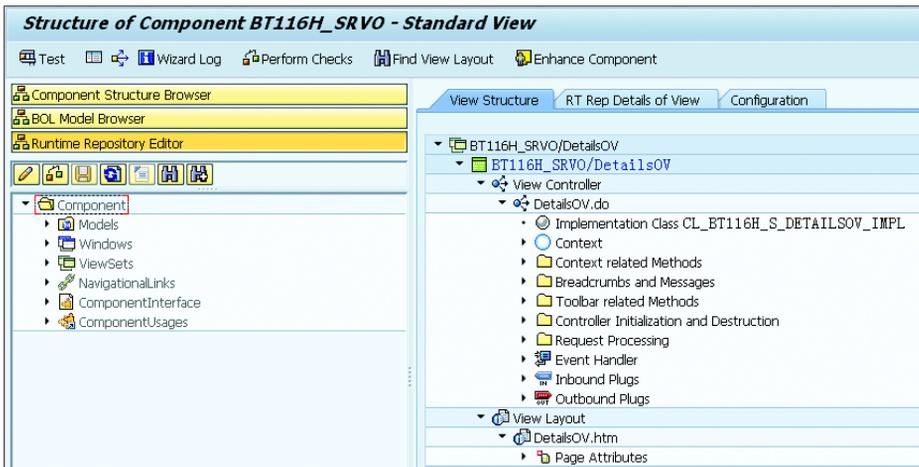


Figure 8.5 Runtime Repository Editor

In this section, we looked at the basic principles of the WebClient UI framework and the different layers involved in data flows from the UI to the BOL and SAP CRM database. We also discussed the Component Workbench and how it can be viewed in the SAP CRM system with different capabilities. Next, we'll look at the UI component architecture.

8.2 Component Architecture

This section covers the WebClient UI component architecture that is based on the MVC concept. [Figure 8.6](#) shows the MVC process wherein you can see the request being made by the user and the response received by the view.

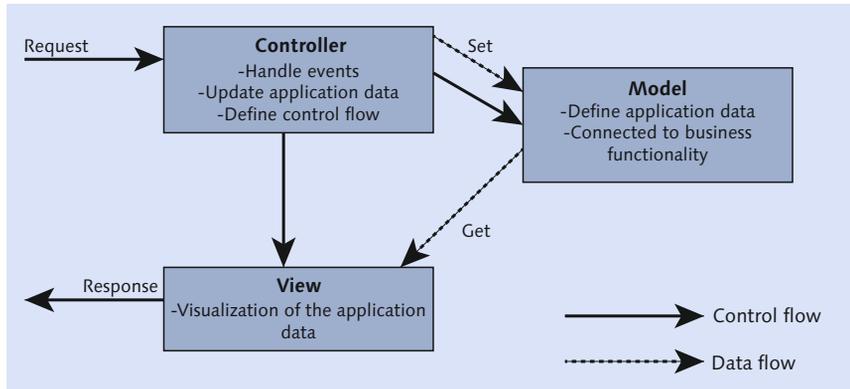


Figure 8.6 Model View Controller Concept

Looking at [Figure 8.6](#), you can see that the MVC concept is made up of the following:

► Model

The model has context and context nodes, which contain field attributes for a specific view. These attributes are connected to the BOL entity for passing the data to the GenIL. The linking of the context node attributes to the BOL is referred to as *binding*.

► View

The view has a response from the model that results in rendering the data output to the user. The rendering of the view output is controlled by the controller, whereas the data flow happens from the controller to the model and back to the view. As shown in [Figure 8.6](#), it's the visualization of the application data.

► Controller

The controller plays a link between view and model, meaning that the request received by the user to the controller decides whether the request is for navigating the views or for fetching the data from the model. The controller behaves in a certain way based on the requests received.

Figure 8.7 shows the Component Workbench depicting the MVC concept and the view details wherein the controller, model (context and context nodes), and view are displayed.

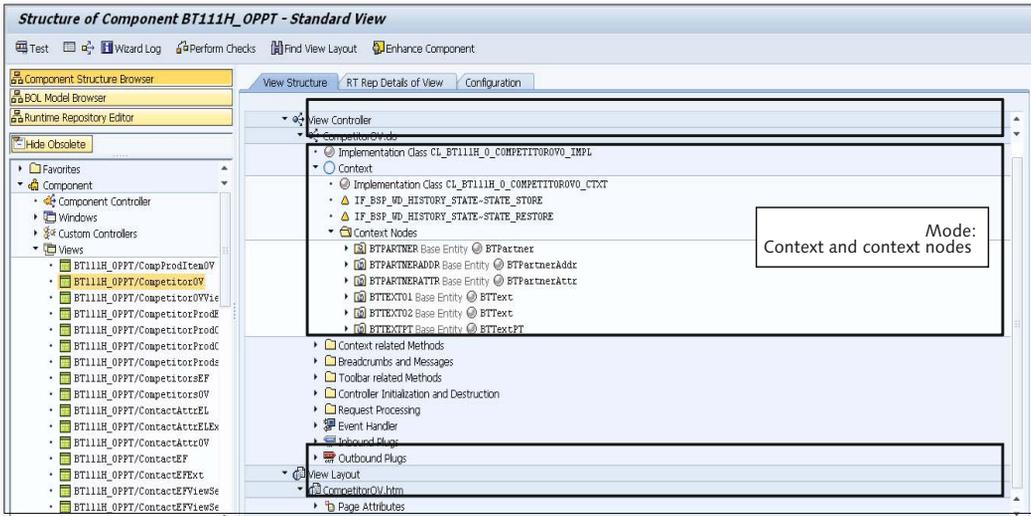


Figure 8.7 Component Workbench: Model View Controller

The controller has the logic to initiate the next step with the user input (e.g., to navigate from one screen to another). Based on the request to the controller, the context class is called, which initiates the context nodes.

The context nodes are the link between the attributes of the view and the business object or data model in the BOL. The data isn't stored in the BOL but can reside in the BOL buffer during the session buildup to improve the performance. After the session is cleared, the buffer is released for that session. For each business object used in the BOL, there has to be one context node for this business object. Data flows from the model to the view and is displayed to the user.

Views

Views are BSP extensions, and the HTML code is generated for the BSP views. Business logic isn't written in the BSP views.

Figure 8.8 illustrates the context node process that brings more clarity on the data flow and the business logic. As shown, a request received by the controller is sent

to the model; the model has the context and context node with the attributes. Each of the context nodes has corresponding business objects within the BOL that are connected to each other. The data passes through this layer of the WebClient UI and finally enters the business logic via GenIL.

The context nodes bind the attributes to the BOL for the successful data flow between these layers. After the business logic is executed successfully, the data flows from the model to the view automatically.

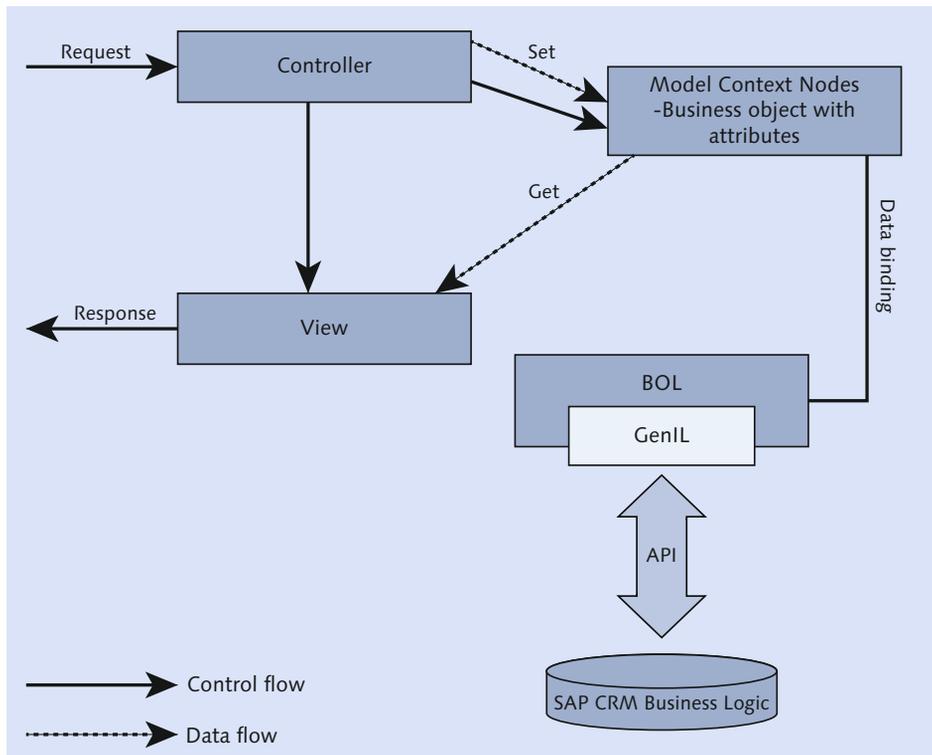


Figure 8.8 Context Nodes

Figure 8.9 illustrates the Component Workbench within SAP CRM, which can be accessed via Transaction BSP_WD_CMPWB.

Figure 8.10 shows one example of navigating between views (from DetailsEF to DetailsOV). This illustrates the controller being configured with the outbound plug method `OP_TODETAILSOV` and inbound plug method `IP_FROMDETAILSEF`.

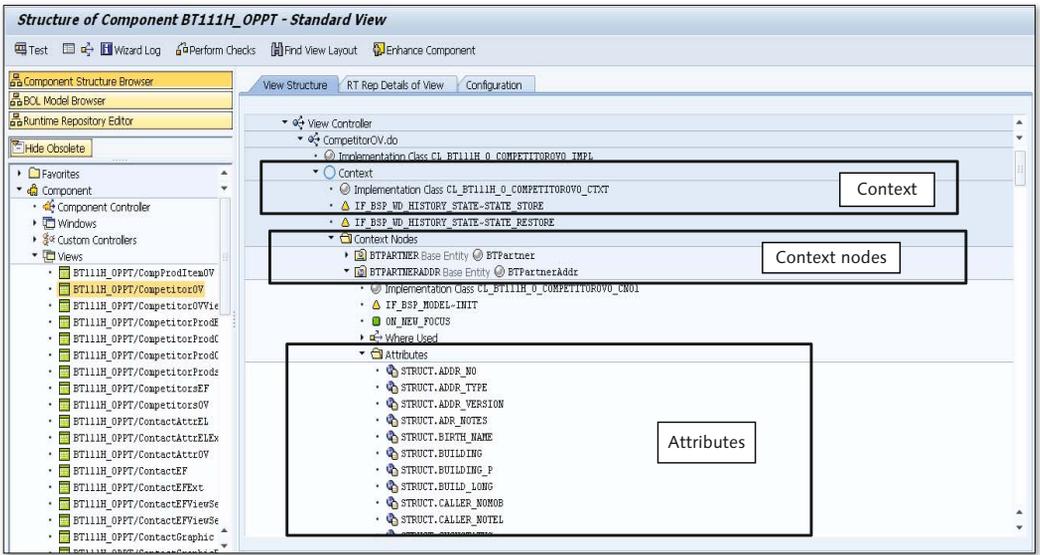


Figure 8.9 Component Workbench: Context Node

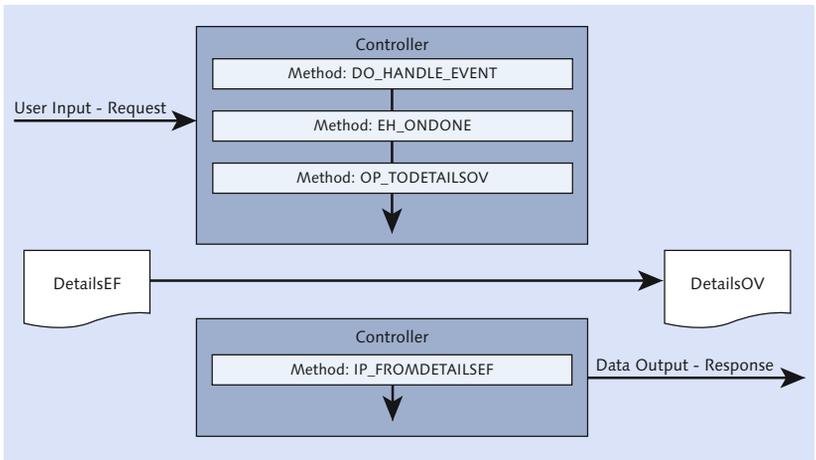


Figure 8.10 Navigation between Views

When you want to navigate from one view to another, you must follow these two steps:

1. Configure the outbound plug for the source view.
2. Configure the inbound plug for the target view.

After you've completed this configuration, you need to link these two views in the navigation link.

Figure 8.11 shows the Component Workbench view of the event handler, outbound plug, inbound plug, and navigation link between the views.

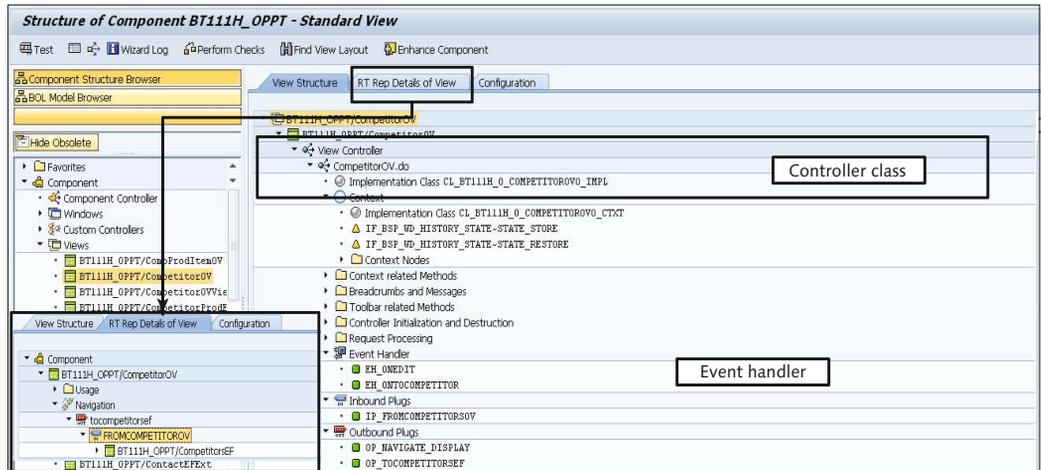


Figure 8.11 Component Workbench: Navigation between Views

Any event that you trigger on the screen has to be understood by the controller view. To ensure this, you need to configure the method `EH_ONEventId`. Each event has an equivalent event handler, and all events are handled in the view controller class `DO_HANDLE_EVENTS`.

The GenIL understands the data with respect to the business object, whereas the BOL just passes the data and doesn't store any data. GenIL has the mapping components to interact with the existing APIs. Therefore, any data changes at the BOL level are understood by GenIL, and it transforms the data that API reads and responds.

Data Model and Retrieval

You can view the data model of the GenIL component sets with the BOL Model Browser via Transaction `GENIL_MODEL_BROWSER`, and data retrieval from the database to the BOL can be viewed via Transaction `GENIL_BOL_BROWSER`.

You can fetch the data from the SAP CRM database to the BOL via Transaction GENIL_BOL_BROWSER. [Figure 8.12](#) shows the initial screen of the GENIL_BOL_BROWSER with the COMPONENT SET field set to ALL.

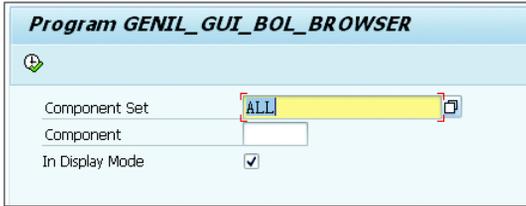


Figure 8.12 GenIL BOL Browser (1)

Let's go through an example of how to browse for Transaction GENIL_BOL_BROWSER and see the data in BOL.

[Figure 8.13](#) shows the MODEL BROWSER SEARCH OBJECTS on the left side of the screen. Double-click on BTQUERY10. This will bring the OBJECT BROWSER: BTQUERY10 on the right side of the screen. Enter "BP_NUMBER" in the ATTRIBUTE NAME column and "1004418" in the ATTRIBUTE VALUE column to get a list of the orders created for this customer within BOL.

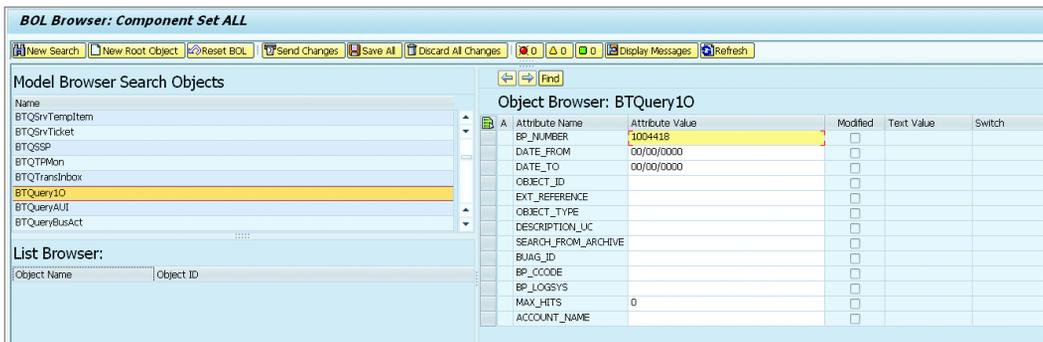


Figure 8.13 GenIL BOL Browser (2)

As soon as you enter the business partner, you'll see the list of business transactions in the LIST BROWSER: SEARCH RESULT LIST, which is shown in [Figure 8.14](#).

Double-click on one of the transactions, and it will appear on the OBJECT BROWSER: BTOORDER section, as shown in [Figure 8.15](#).

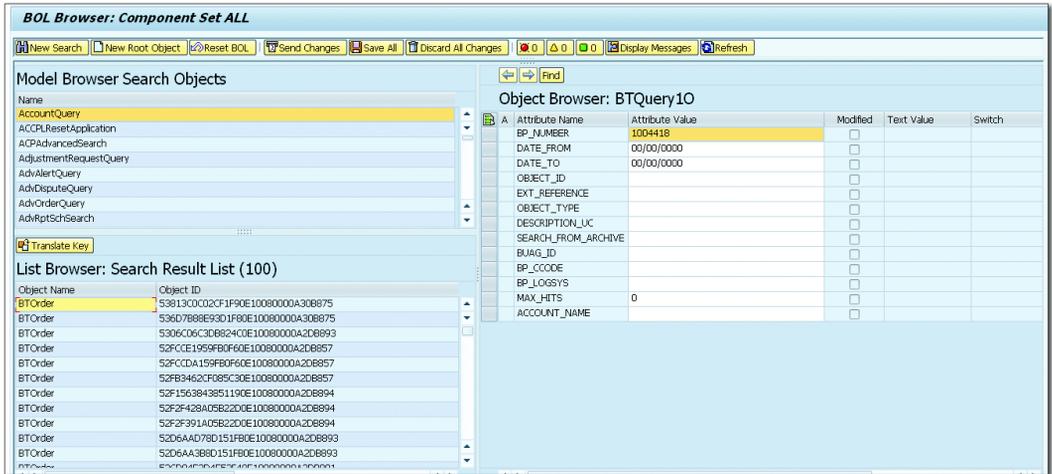


Figure 8.14 GenIL BOL Browser (3)

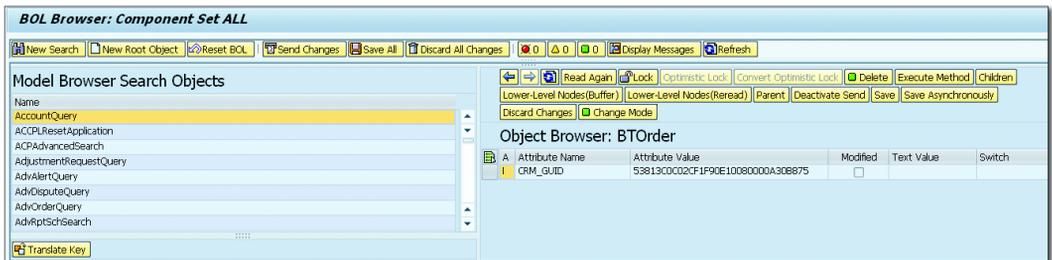


Figure 8.15 GenIL BOL Browser (4)

Select CRM_GUID in the ATTRIBUTE NAME column from Figure 8.15, and click the CHILDREN button to view further relations to CRM_GUID (i.e., MODEL BROWSER RELATIONS), as shown in Figure 8.16.

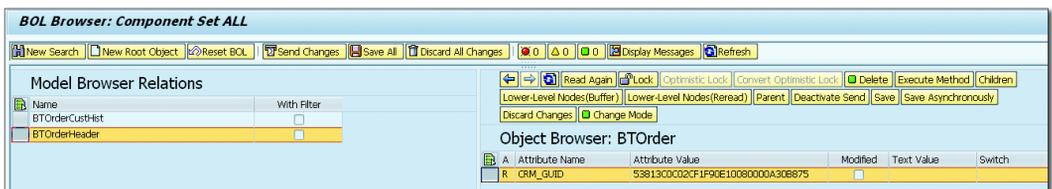


Figure 8.16 Model Browser Relations

Double-click on BTORDERHEADER to view the OBJECT BROWSER: BTADMINH section, which shows the transaction details (see [Figure 8.17](#)). This is one level of detail. You can click on the CHILDREN button to go further into MODEL BROWSER RELATIONS and view the data from the SAP CRM database to the BOL entity.

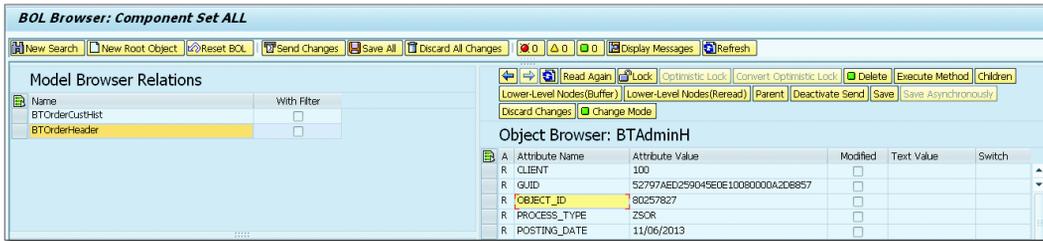


Figure 8.17 Object Browser: BTAdminH

In this section, we looked at the different WebClient UI layers that are mapped with the Component Workbench and how the Component Workbench carries out functionalities for the controller view, view controller, context, context nodes, views, BOL entity, and navigational links. In addition, we covered the flow of data from the presentation layer to the BOL. GenIL plays a vital role in both mapping the BOL data in the format that business logic APIs understand and moving the data to the SAP CRM database.

8.3 Business Roles

SAP CRM provides a role-based WebClient UI for users based on their day-to-day work at an organization. The WebClient UI has around 60 standard business roles that are based on business user functions.

Business roles within SAP CRM are designed based on the group of users working in each of the SAP CRM core functions—such as marketing, sales, and service. SAP also provides business roles on industry vertical functions, including Utilities, Telco, Media, Pharma, and so on.

One of the most important applications that a large number of customers have implemented when using SAP CRM solutions is the IC. In the call center application, the Interaction Center agent (IC_AGENT) is a standard business role that SAP has provided for IC.

8.3.1 User Groups

In this section, we'll look at the SAP CRM Marketing, Sales, Service, and IC agent user groups and the business roles within them. Based on your business needs, you can change the business role that suits your business requirements. SAP recommends copying the standard business role and making further changes based on your needs. Companies have different departments and functions, and people working under these departments need to log certain transactions to carry out their work on a daily basis. Let's begin by looking at the business roles for marketing professionals.

Marketing Professionals

Marketing is a core function for any organization. Marketing representatives work on functions such as marketing plans, campaigns, and creating and converting leads into opportunities. All these functions are similar in any organization. Therefore, SAP has provided a marketing business role to conduct these functions and log them appropriately.

Figure 8.18 shows the business role **MARKETING** with work centers **WORKLIST**, **CALENDAR**, **MARKETING**, and **ACCOUNT & PRODUCTS**. Each of these work centers can drill one level down to log the actual transaction or run the campaigns.

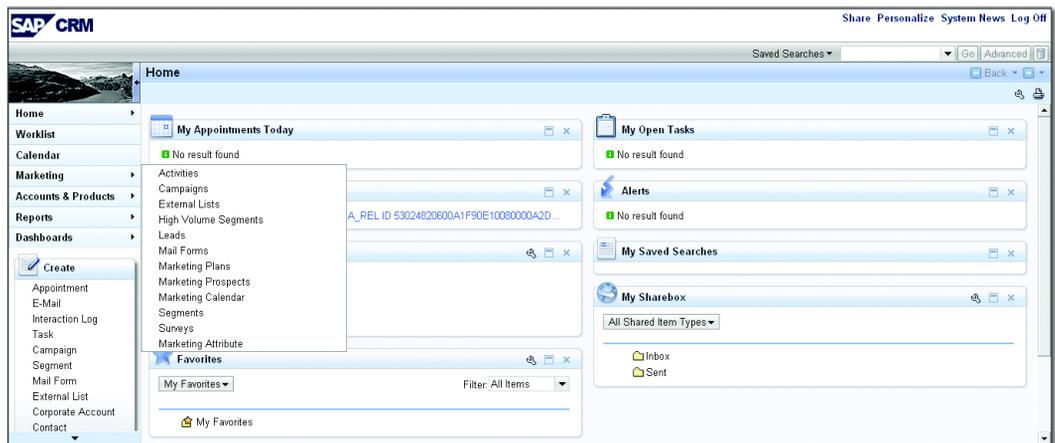


Figure 8.18 Business Role – Marketing Professional

There is a capability within the business role to create some shortcuts such as creating direct links, which are easy to navigate and log transactions that users work with on a daily basis.

Sales Professionals

Successful marketing activities eventually lead into sales, the delivery of products to the customer, and invoicing. Organizations focus on their sales processes and seek to streamline them to satisfy their customers.

Therefore, defining the sales cycle is critical in any organization. The sales cycle differs from one company to another, but SAP has provided a sales professional business role that covers SALES PLANNING, CAMPAIGNS, LEADS, OPPORTUNITIES, QUOTATIONS, SALES ORDERS, and SALES CONTRACTS (see [Figure 8.19](#)). Sales operations have many more functionalities that are included in the sales professional business role. SAP recommends copying the sales professional business role and making changes based on your business needs.

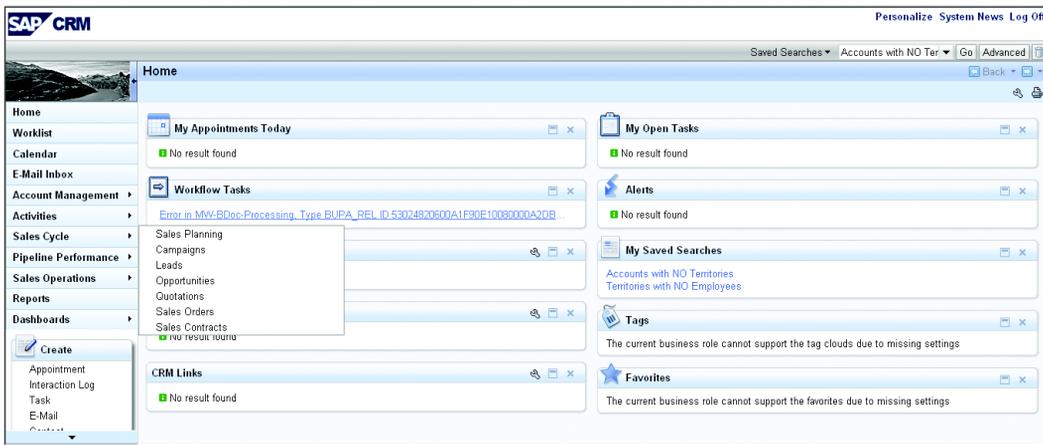


Figure 8.19 Business Role – Sales Professional

Service Professionals

A company's sales will trigger the servicing of items that are under warranty or out of warranty at some point in the product lifecycle. Servicing customers on time and with quality is demanding with growing competition in the market.

Therefore, teams within an organization servicing customers need to be able to log the service transactions appropriately.

Based on the service industries verticals, SAP has provided a service professional business role that consists of the following work centers: WORKLIST, CALENDAR, E-MAIL INBOX, ACCOUNTS & PRODUCTS, RESOURCE PLANNING, SERVICE ORDERS, SERVICE CONTRACTS, COMPLAINTS & RETURNS, and BILLING (see [Figure 8.20](#)).

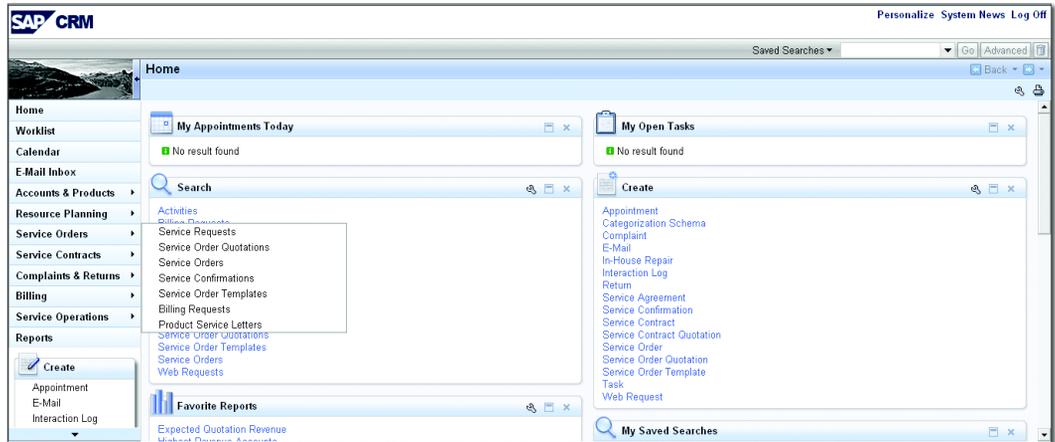


Figure 8.20 Business Role – Service Professional

Interaction Center Agents

The IC agent business role provides users with the ability to carry out call center activities when a call is received by customer service. Every company has its own steps and processes to satisfy customers based on the calls received. You can change the IC business role based on your specific needs by copying the standard business role.

The most commonly used work centers in the IC agent business role are ACCOUNT IDENTIFICATION, ACCOUNT FACT SHEET, ACCOUNT OVERVIEW, INTERACTION RECORD, FAX, LETTER, KNOWLEDGE SEARCH, and so on, as shown in [Figure 8.21](#). Any calls received in customer service are tagged with the interaction record, and any activities or transactions carried out during the call are attached in the activity clipboard of the interaction record transaction.

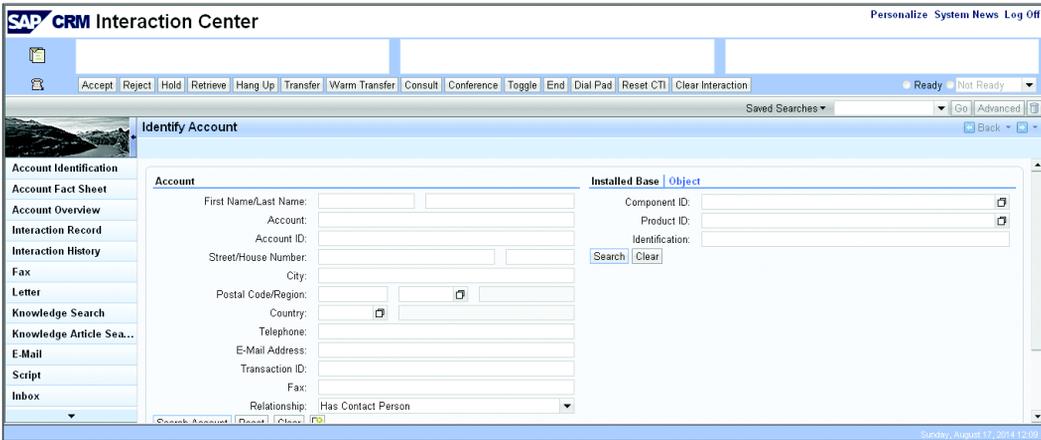


Figure 8.21 Business Role – Interaction Center

8.3.2 Configuring a Business Role

A business role is a key and central component to the WebClient UI that drives the complete WebClient UI usage and layout. To configure a business role, you need to maintain its profiles, which include the following:

- ▶ Navigation bar profile
- ▶ Role configuration key
- ▶ Technical profile
- ▶ Layout profile
- ▶ PFCG role profile

Figure 8.22 shows the business role configuration concept, which has profiles assigned to the business role and the business role assigned to the user within the organization model.

Assign Business Roles

You can also assign the business role to the user directly via Transaction SU3 in the user parameter with the parameter `CRM_UI_PROFILE`, and the parameter value with business role is based on your business function. With this, you have to assign the user with the business role separately to each user, whereas if you assign to the organization model, it will apply to all the business users under that node.

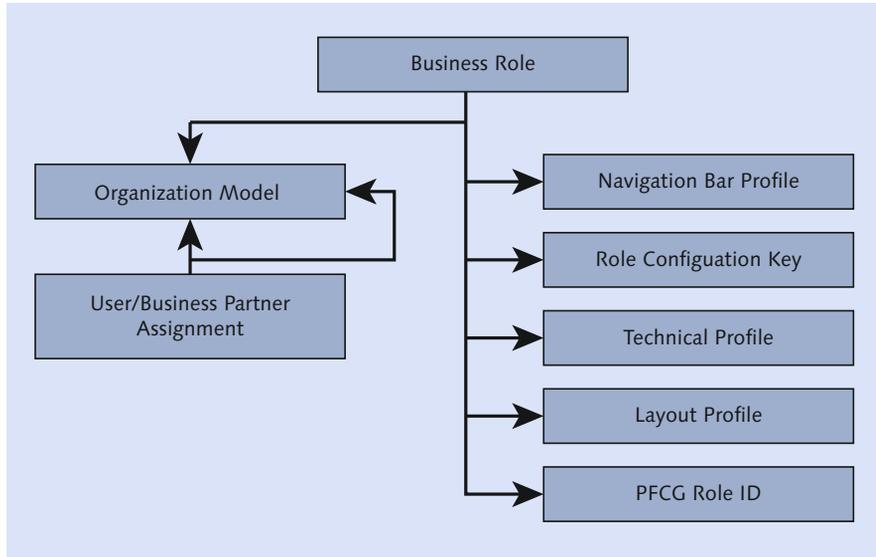


Figure 8.22 Business Role Configuration Concept

Figure 8.23 shows the SAP CRM business role configuration for the SALESPRO role and the profiles assigned to it. To configure the business role, navigate to SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • BUSINESS ROLES • DEFINE BUSINESS ROLE.

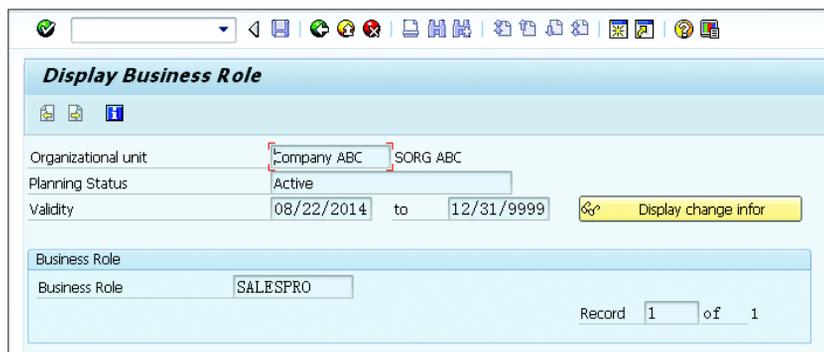


Figure 8.23 Business Role Organization Model Assignment

To assign the business role to the organization model, you need to access Transaction PPOMA_CRM (Change Organizational Model), select the ORGANIZATIONAL UNIT where you want to assign the business role, and choose DETAIL OBJECT •

ENHANCED OBJECT DESCRIPTION in the menu bar to assign the business role. [Figure 8.23](#) shows the BUSINESS ROLE assignment to the ORGANIZATION UNIT.

As shown in [Figure 8.24](#), a number of important fields need to be filled in:

Change View "Define Business Roles": Details

New Entries

Dialog Structure

- Define Business Roles
 - Assign Function Profiles
 - Adjust Work Centers
 - Adjust Work Center Group Links
 - Adjust Direct Link Groups
 - Adjust Direct Links
 - Define Keyboard Shortcuts
 - Adjust Central Search Objects

Business Role: SALESPRO

Define Business Roles

Profile Type	C CRM WebClient Business Role
Description	Sales Professional
Role Config. Key	SALESPRO
Nav Bar Profile	SLS-PRO
Layout Profile	CRM_UIU_MASTER
Technical Profile	DEFAULT
PFCG Role ID	SAP_CRM_UIU_SLS_PROFESSIONAL
SpecificHelpContext	
<input type="checkbox"/> SpecHelpFallback	
Logo Text	Sales Professional

Figure 8.24 Business Role Configuration

► **ROLE CONFIG. KEY**

This field is used to identify the configuration that will be used when accessing the WebClient UI component views. This helps to configure the same view that is being used in different business roles based on your specific needs.

► **NAV BAR PROFILE**

This field controls the work centers, and the work centers control the logical link. [Figure 8.29](#) shows a diagram of the business role. The logical link calls the WebClient UI component containing views via the target ID.

► **LAYOUT PROFILE**

This defines the layout of the navigation framework, which includes the header, footer, work area, and navigation bar.

► **TECHNICAL PROFILE**

This provides some performance-related capabilities, including capabilities to disable certain UI functions such as the browser back support, frame swapping, and automatic delta handling. You can enter the log off URL to the technical profile based on your business needs. This means that whenever you log off from the WebClient UI, the URL entered in the technical profile will be launched.

► PFCG ROLE ID

This is imperative to the business role, and you need to assign the PFCG authorization role to the business role before you start the WebClient UI. The PFCG ROLE ID is assigned with a list of the authorization objects that the user can access from the WebClient UI screen. User roles aren't sufficient in driving the complete authorization when accessing the WebClient UI by any user; therefore, the PFCG ROLE ID to the business role provides that additional access.

Function Profiles

Some business roles require additional technical settings; for example, the IC business role. If you need multiple business partner identifications or if you want to use communication management software for account identification purposes, then you'll need to add the function profiles to the business role. This will activate the functionality specific to the business role.

Figure 8.25 shows some examples that are assigned to the function profile. You can add function profiles via the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • TECHNICAL ROLE DEFINITION • DEFINE FUNCTION PROFILE.

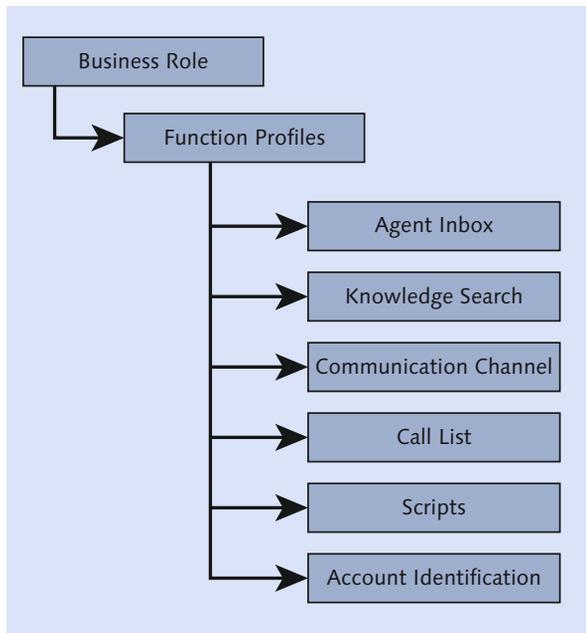


Figure 8.25 Function Profiles Assignment to the Business Role

After you've created and added the function profiles, you can then assign them to the business role by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • BUSINESS ROLES • DEFINE BUSINESS ROLE.

After you've created and added the function profiles, you can then assign them to the business role by following the menu path, SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • BUSINESS ROLES • DEFINE BUSINESS ROLE (see [Figure 8.26](#)).



Figure 8.26 Function Profile

Adjust Work Centers

Within any business role, you have the capability of adjusting the work center to appear in the navigation bar area or not. If the INACTIVE checkbox is activated for any work center, then that work center won't be visible in the navigation bar area of the business role (see [Figure 8.27](#)).

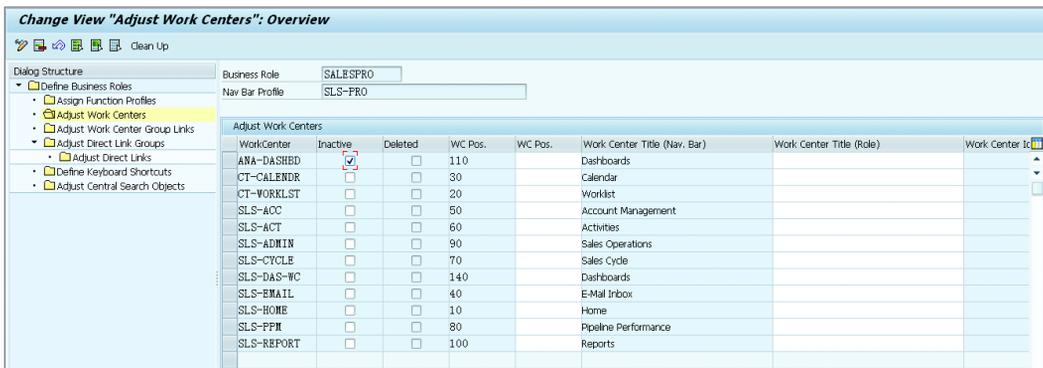


Figure 8.27 Adjust Work Centers

Like adjusting work centers, adjusting work center group links controls the visibility of the logical link in the navigation bar area. Adjusting a work center is at the work center level to control the visibility at the navigation bar, whereas adjusting the work center group link is at the work center group and logical link ID level.

If you activate the LOGLINK ID checkbox, as shown in [Figure 8.28](#), those logical links will be available in the navigation bar area.

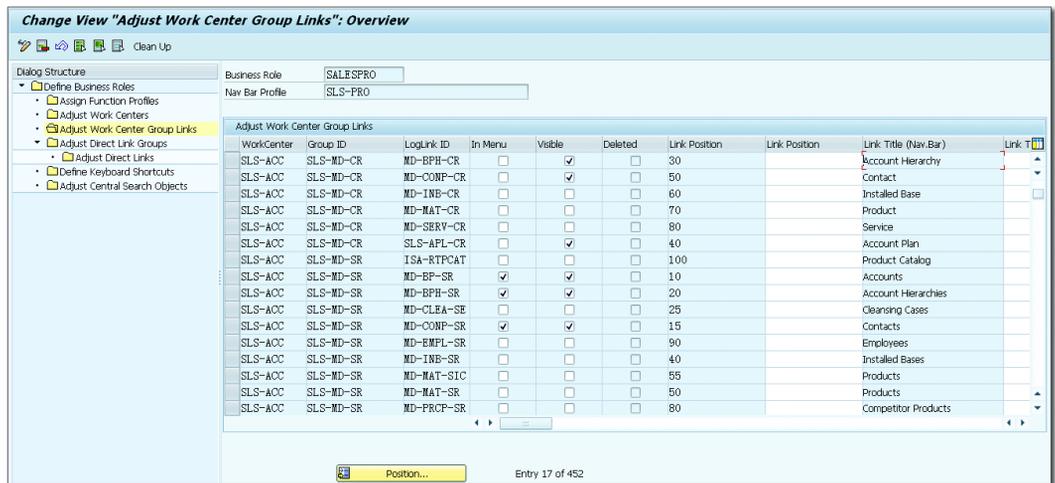


Figure 8.28 Adjusting Work Center Group Links

[Figure 8.29](#) shows the WebClient UI screen callouts for ❶ Work Centers, ❷ Work Center Link Group, ❸ Logical Links, ❹ Direct Link Group, and ❺ Work Center Page.

In this section, we discussed the different business roles and groups defined in the WebClient UI framework. We also covered the configuration of business roles and the steps that you need to perform to set up a business role based on your business needs. Next, we'll look at configuring and customizing the navigation bar, work area, and header area for the WebClient UI.

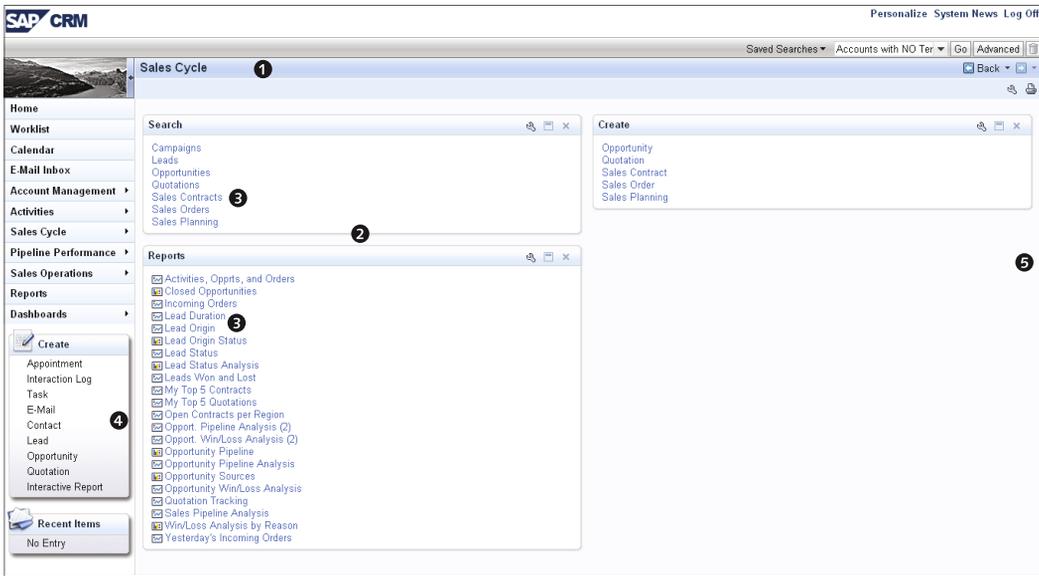


Figure 8.29 WebClient UI Screen

8.4 Configuring and Customizing

As previously discussed in [Section 8.1.1](#), the WebClient UI is divided into three areas: the header area, navigation area, and work area. In this section, we'll look at how to customize these three elements, along with using the transaction launcher.

8.4.1 Navigation Bar Configuration

The navigation bar profile controls the work centers, and the work centers control the logical link. The logical link calls the WebClient UI components containing views via the target ID. [Figure 8.30](#) shows the navigation bar configuration flow consisting of a list of assigned work centers. The work centers are based on the business role that you belong to.

With a work center link group, you can group the list of work centers. Doing so, we'll create a tree structure in the navigation bar link. The logical link is assigned

to the work center link group. The logical link is an actual transaction on the UI that users want to log.

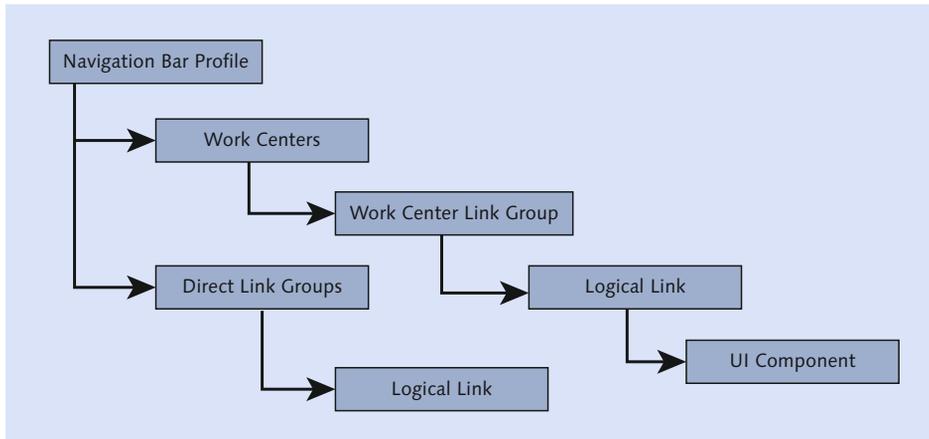


Figure 8.30 Navigation Bar Configuration Flow

Finally, the logical link is connected to the UI component containing multiple views, and the logical link is connected to the UI component via the target ID.

Similar to the assignment of the work centers to the navigation bar profile, you can also assign the direct link groups to the navigation bar profile. You then assign the logical links to the direct link groups. These work as shortcuts to the transactions that you'll often work with.

Follow these steps to configure the navigation bar:

1. Create the navigation bar profile first. In this specific configuration example, we'll use the standard navigation bar profile SLS-PRO Sales Professional (see [Figure 8.31](#)). To begin creating the navigation bar profile, follow the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • TECHNICAL ROLE DEFINITION • DEFINE NAVIGATION BAR PROFILE.
2. Configure the logical link, and assign the logical link to the target ID. [Figure 8.32](#) shows the logical link created SLS-SLO-CR assigned to the TARGET ID TBT115CR, which is then assigned to the UI component BT115M_SLSO (Sales Order Create).



Figure 8.31 Navigation Bar Profile

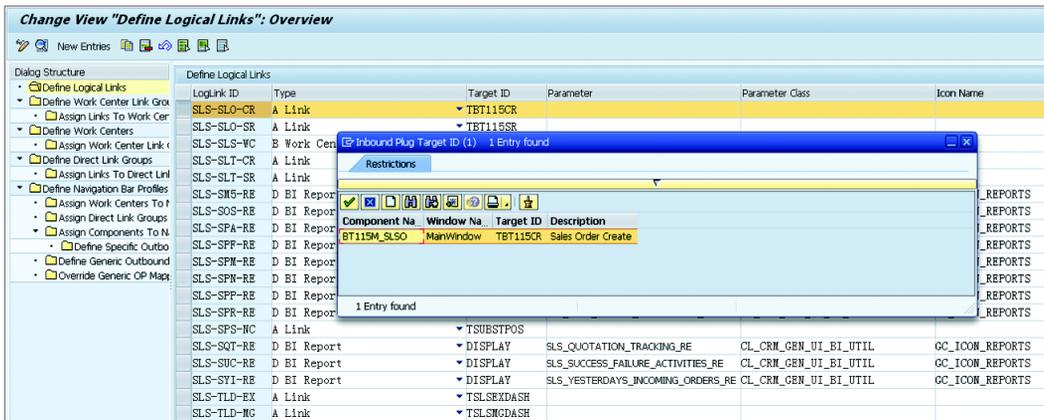


Figure 8.32 Define Logical Links

3. Define the work center link group if you want to assign multiple logical links to the work center. For example, GROUP ID SLS-SL-CR has two logical links SLS-SLC-CR (Sales Contract Create) and SLS-SLC-CR (Sales Order Create) (see [Figure 8.33](#)).
4. In the GROUP ID you've created, assign the multiple logical links, as shown in [Figure 8.34](#).



Figure 8.33 Defining Work Center Link Groups

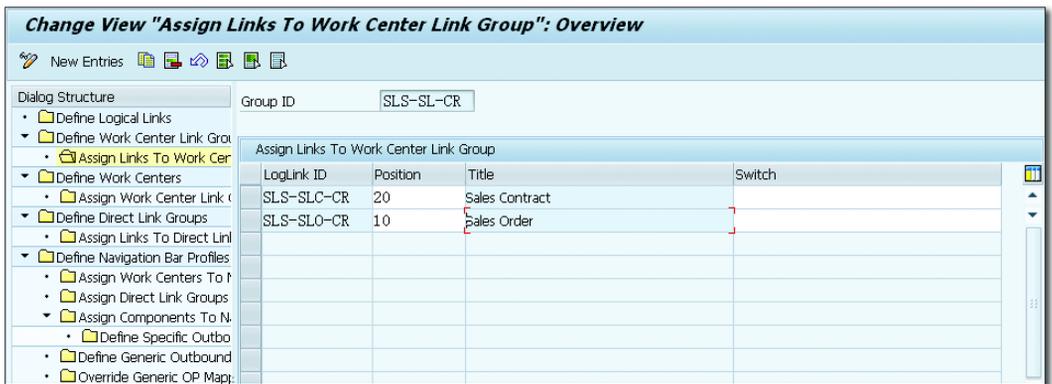


Figure 8.34 Assigning Links to the Work Center Link Group

5. Now, create the work center. [Figure 8.35](#) shows SLS-CYCLE SALES CYCLE in the WORKCENTER column, which is a standard out-of-the-box sales cycle work center. However, you can create your own based on your business requirements.



Figure 8.35 Defining Work Centers

6. After you've created the work center, assign the work center group to the work center (see [Figure 8.36](#)). The creation of the work center link group was covered in step 3.

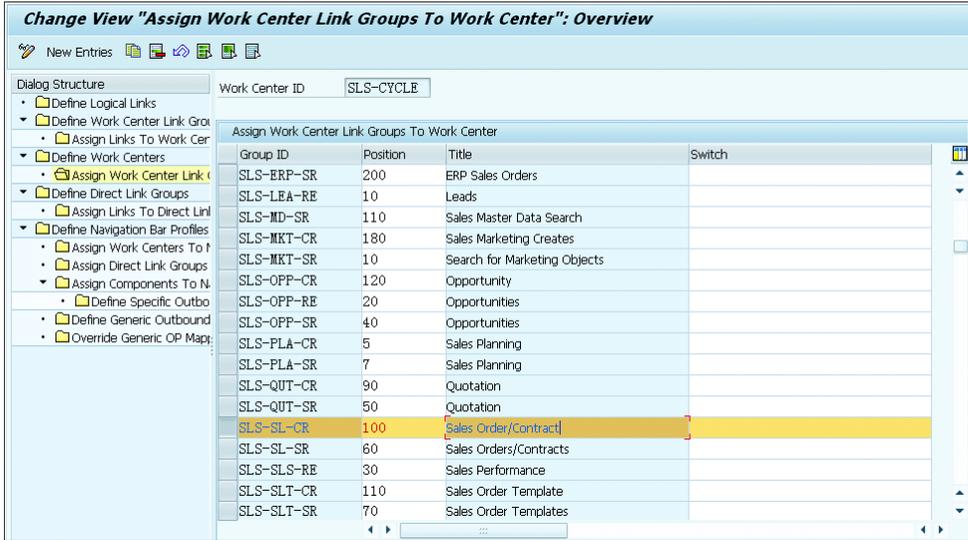


Figure 8.36 Assigning Work Center Link Groups to a Work Center

7. Assign the work center created in step 6 to the navigation bar profile (see [Figure 8.37](#)).

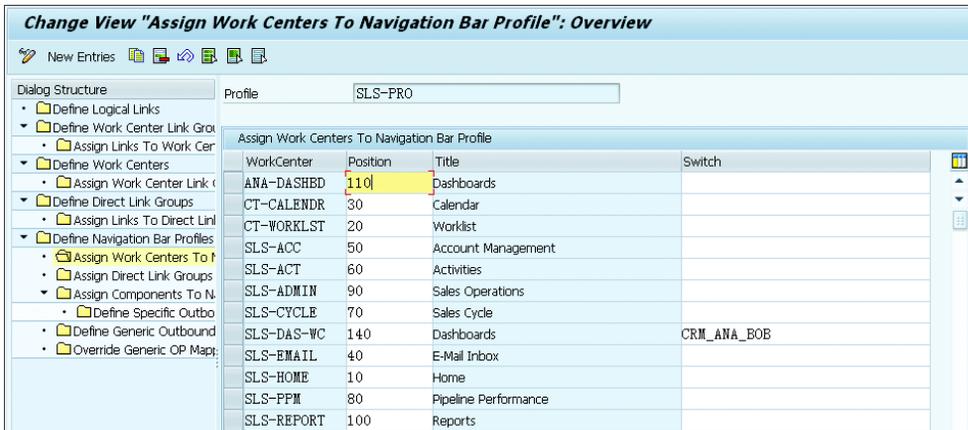


Figure 8.37 Assigning Work Centers to the Navigation Bar Profile

8. Create the direct link group. [Figure 8.38](#) shows an example of SLS-CREATE – SALES CREATE LINKS.

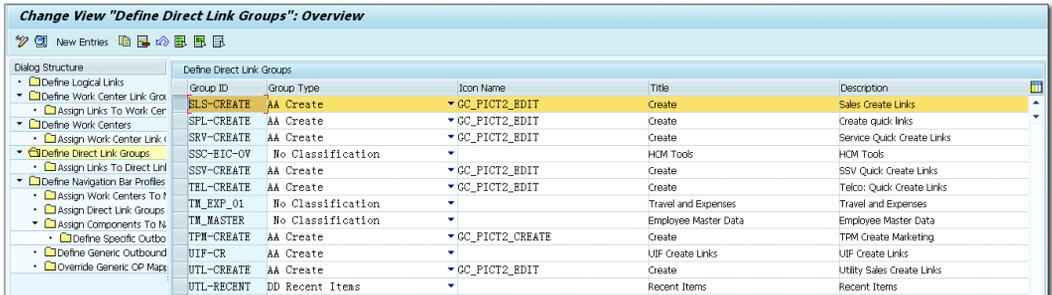


Figure 8.38 Defining Direct Link Groups

9. After the direct link group is created, you assign the logical link to the direct link group (see [Figure 8.39](#)).

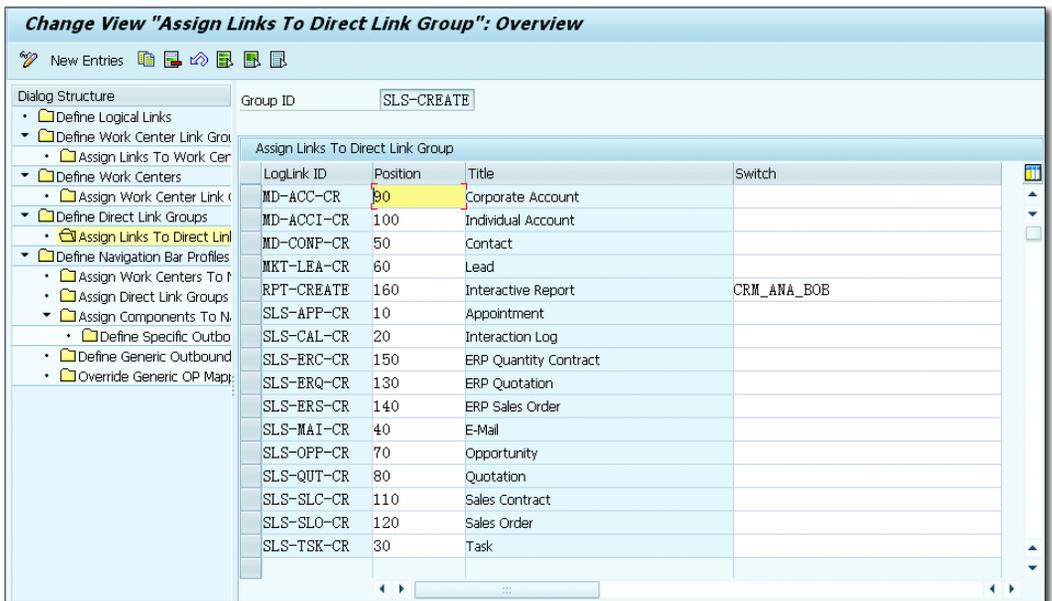


Figure 8.39 Assigning Links to the Direct Link Group

10. Finally, assign the direct link group to the navigation bar profile, as shown in [Figure 8.40](#).

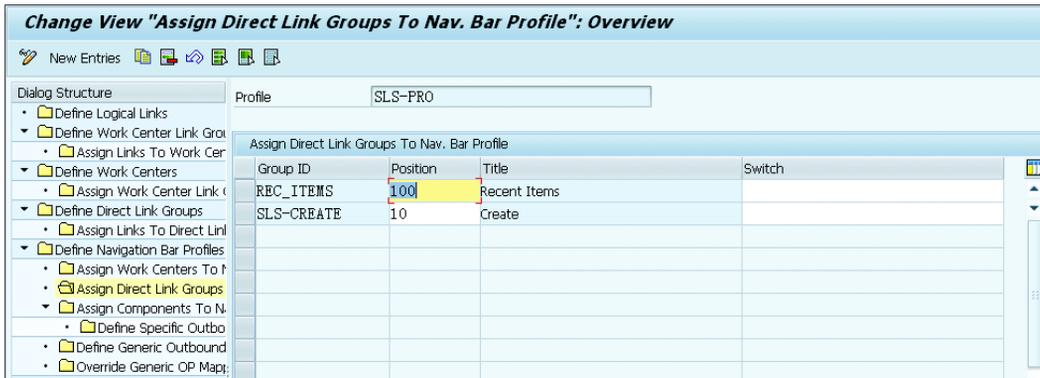


Figure 8.40 Assigning Direct Link Groups to the Navigation Bar Profile

8.4.2 Header Area Configuration

The header area is a static area that consists of a message bar, logo area, SAVED SEARCHES list, PERSONALIZE link, work area title, and page history within the BACK button.

Like the navigation bar, you can configure the header area, which is mainly controlled via the layout profile. SAP has provided BSP UI component CRM_WORK-AREAHDR, which consists of header area attributes, and CRMCMP_HDR_STD, which consists of different views such as the context area, global functions, logo, and message. You can alter these header area UI components based on your specific business needs.

[Figure 8.41](#) shows the LAYOUT PROFILE that can be configured via the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • TECHNICAL ROLE DEFINITION • DEFINE LAYOUT PROFILE.

The layout component IDs HDRLOGO, HDRMESSAGE, HDRGLOBALFUNCTIONS, and SAVEDSEARCH_LAUNCHER are assigned to the DEFAULT layout profile (see [Figure 8.42](#)). You can create the layout component ID by navigating to CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • TECHNICAL ROLE DEFINITION • DEFINE LAYOUT COMPONENTS.

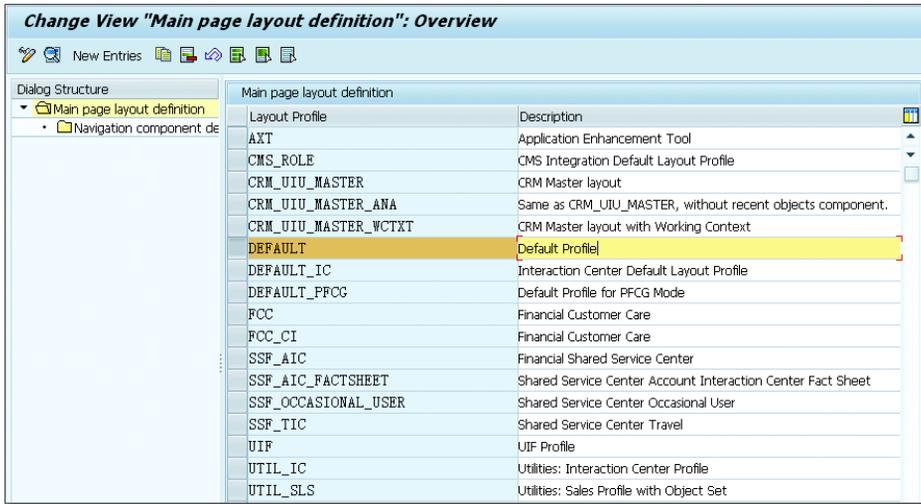


Figure 8.41 Layout Profile

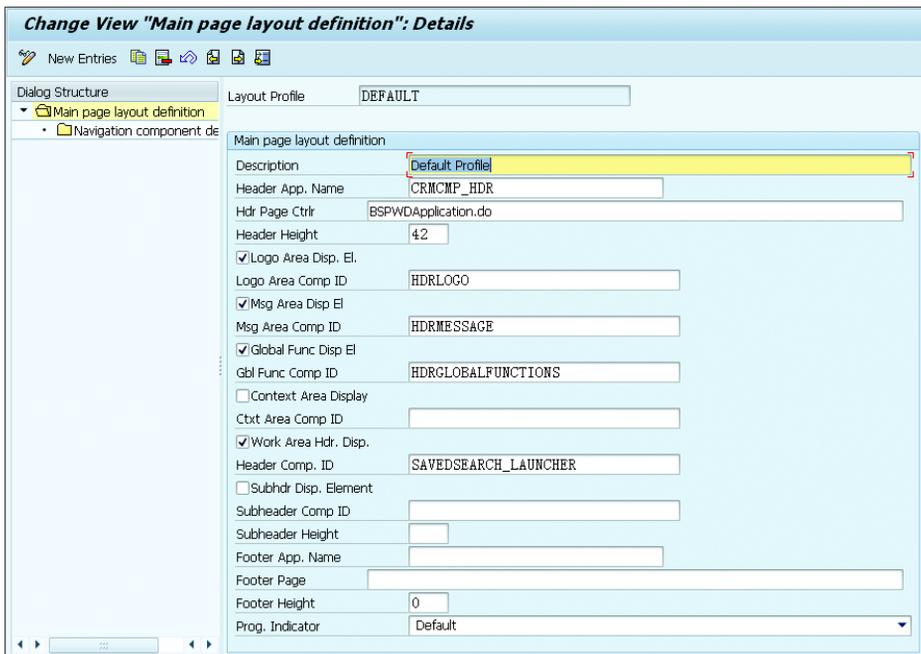


Figure 8.42 Layout Profile Details

Within the CHANGE VIEW "COMPONENT DEFINITION VIEW": DETAILS screen, you see the assignment of the WebClient UI component. For example, HDRLOGO in the COMPONENT ID field is assigned with UI component CRMCMP_HDR_STD in the APPLICATION field (see [Figure 8.43](#)).

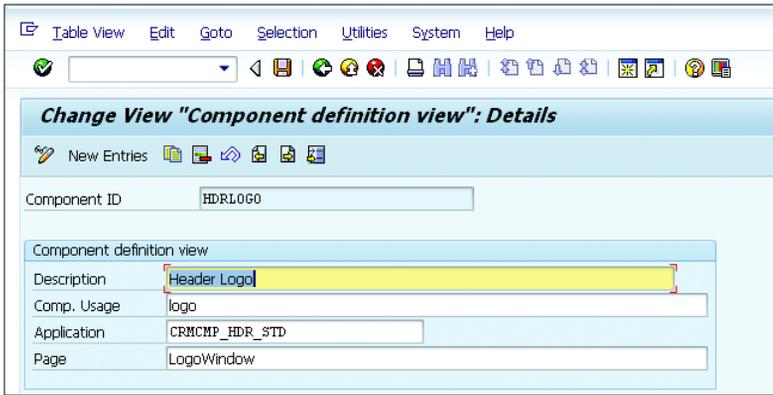


Figure 8.43 Header Logo

8.4.3 Work Area Configuration

The work area is the central portion of the WebClient UI page, which opens up by navigating the header area or navigation bar. The work area is primarily controlled by the Component Workbench (BSP_WD_CMWB), and you can configure the work area based on your business needs.

You can configure the work area to a greater extent without any knowledge of coding and reframe it based on your requirements. The work area consists of different view sets and views within components and different page types, including the work center page, overview page, edit page, home page, search page and report page.

[Figure 8.44](#) shows the TECHNICAL DATA details for UI COMPONENT: GENERAL DATA, ENHANCEMENT INFORMATION, FIELD: TECHNICAL INFORMATION, CONFIGURATION: TECHNICAL INFORMATION, and DESIGN LAYER. To get to these details, open the WebClient UI screen, select the field from the view that you need to see the details, and press **[F2]**.

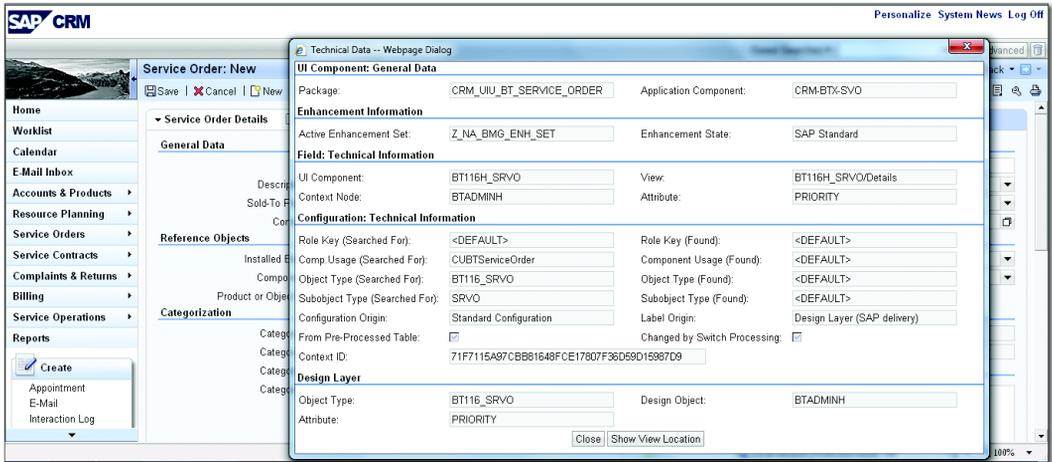


Figure 8.44 Technical Data on the WebClient UI Work Area

In this specific example, the UI component is BT116H_SRVO. To access the component details, go to Transaction BSP_WD_CMPWB, as shown in Figure 8.45. The COMPONENT STRUCTURE BROWSER screen consists of various views. The example shown here is for service order details VIEW BT116H_SRVO/DETAILS. You can see the list of the attributes available. Based on your specific business needs, you can add or remove the fields from the view.

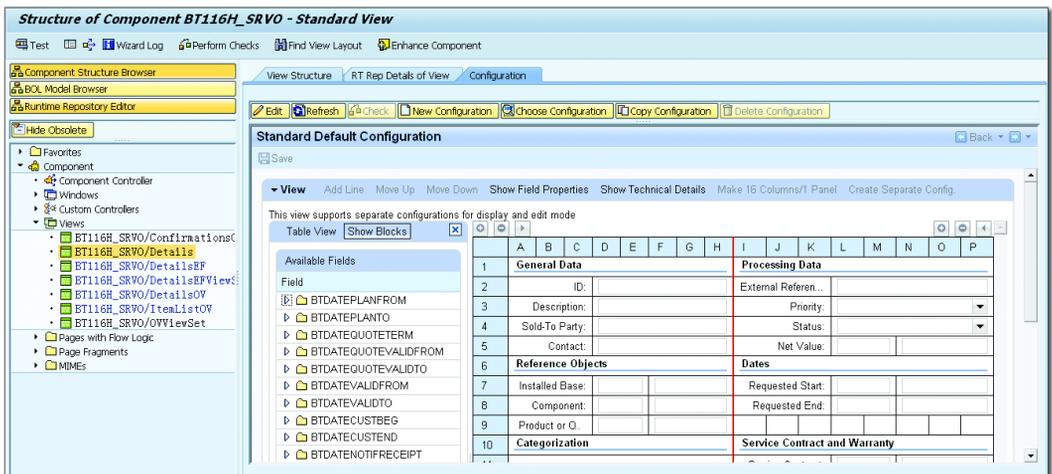


Figure 8.45 BT116H_SRVO/Details View

Figure 8.46 shows the configuration involved to make fields mandatory or displayed. You can open up the configuration by pressing **Alt** + **Enter**. You can change the rows, positions, and names of fields.

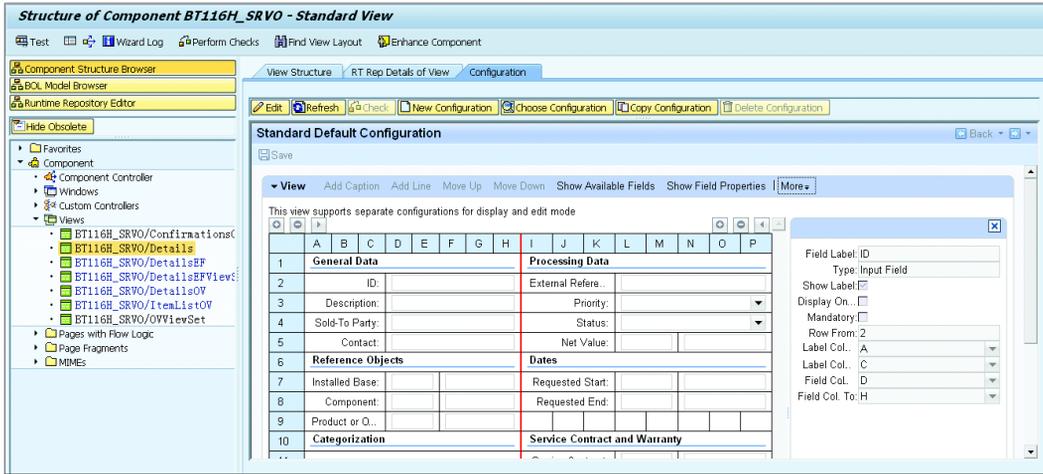


Figure 8.46 Field Configuration

8.4.4 Transaction Launcher

The Transaction Launcher is an SAP CRM feature that allows you to launch any external or internal transactions from SAP CRM. This means that transactions other than SAP CRM transactions, such as SAP ERP transactions, can be launched. You can also launch any SAP CRM GUI transactions on the WebClient UI screen.

There are two types of Transaction Launchers:

- ▶ **BOR Transaction Launcher (Business Object Repository)**

For the BOR Transaction Launcher, you need the Internet Transaction Server (ITS) set up that translates the SAP GUI DYNPROS into HTML pages.

- ▶ **URL Transaction Launcher**

For the URL Transaction Launcher, you need to integrate BSP or non-BSP URLs to launch the transaction. This can be configured in SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • TECHNICAL ROLE DEFINITION • TRANSACTION LAUNCHER • DEFINE URLS AND PARAMETERS.

Prerequisites for launching transactions include the following:

- ▶ Install ITS and verify its URL.
- ▶ Define logical systems via Transaction BD54.
- ▶ Define Remote Function Call (RFC) destinations.
- ▶ Assign RFC destinations to the logical system via Transaction BD97.

Let's go through one practical example of launching SAP ERP Transaction VA05 (List of Sales Orders) from the WebClient UI screen. Follow these steps:

1. Log in to SAP CRM, and access SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • TECHNICAL ROLE DEFINITION • TRANSACTION LAUNCHER • CONFIGURE TRANSACTION LAUNCHER.
2. Enter the LAUNCH TRANS. ID and COMPONENT SET, as shown in [Figure 8.47](#). Click CONTINUE.

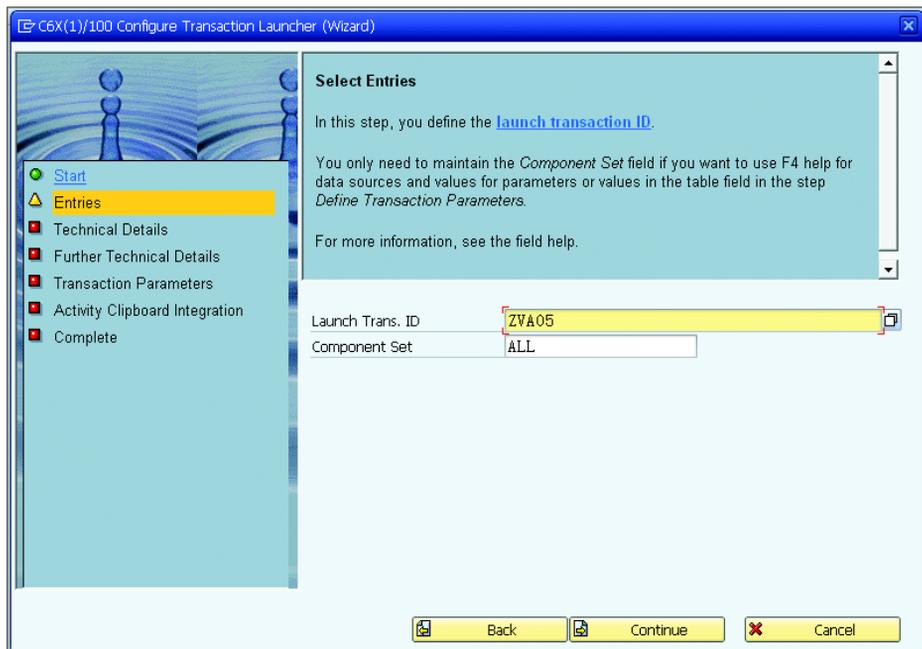


Figure 8.47 Transaction Launcher Wizard

3. Define the technical details by entering the HANDLER CLASS, as shown in [Figure 8.48](#), and clicking CONTINUE.

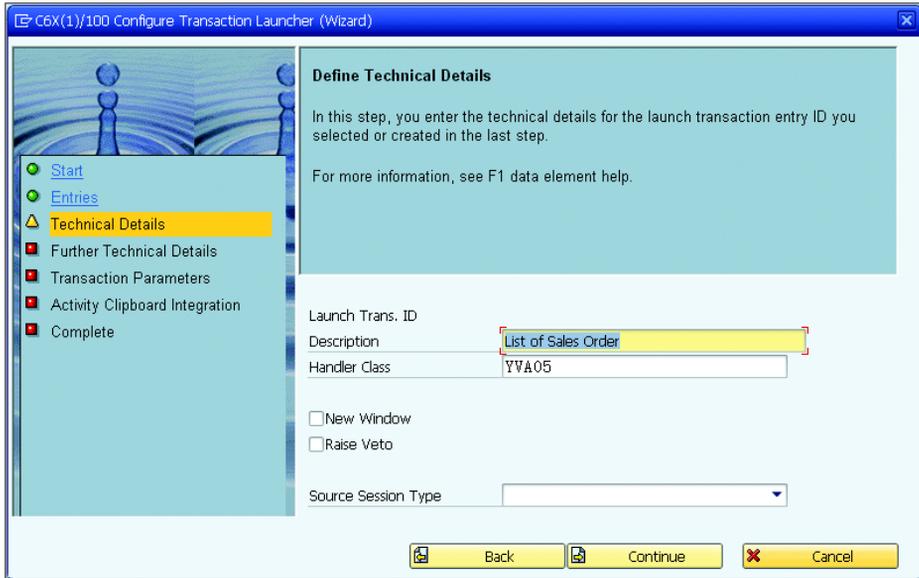


Figure 8.48 Defining the Technical Details

4. Define the type of transaction launcher you want to use: BOR or URL. For this example, use the BOR transaction launcher. Enter the LOGICAL SYSTEM of the transaction that you want to launch. Because we want to launch an SAP ERP transaction, the LOGICAL SYSTEM is ERP, and the BOR OBJECT TYPE is ZTSTC_03, which is a copy of the standard business object type TSTC. As shown in [Figure 8.49](#), the METHOD NAME is EXECUTE. Click CONTINUE.
5. Define the transaction parameters by selecting the PARAMETER as ICWEBCLIENTBORKEYPARAMETER OBJECT KEY and entering the transaction code ("VA05", for this example) that you want to launch in SAP ERP (see [Figure 8.50](#)). Click CONTINUE.

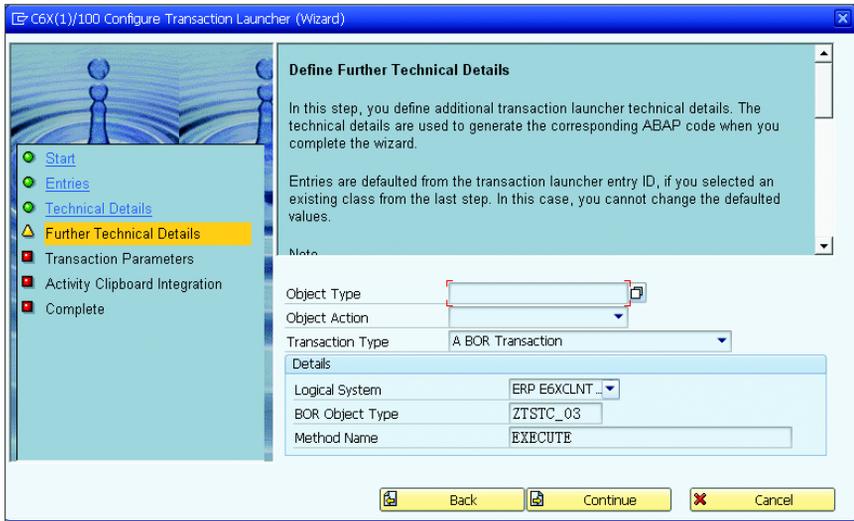


Figure 8.49 Defining Further Technical Details

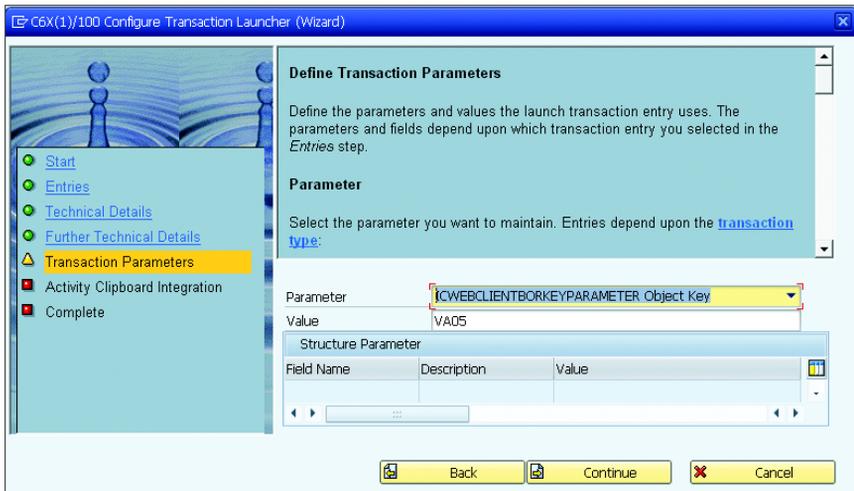


Figure 8.50 Defining Transaction Parameters

6. Complete the Transaction Launcher Wizard, as shown in [Figure 8.51](#).

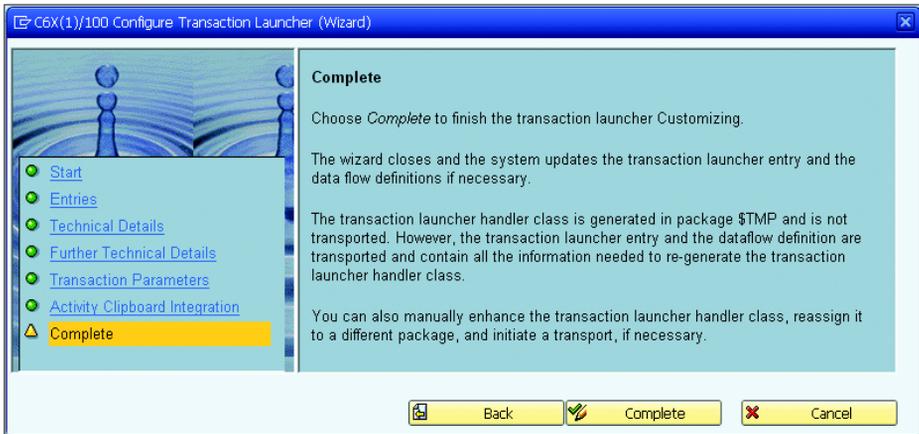


Figure 8.51 Transaction Launcher Wizard Complete

7. Verify the transaction launch created with the Transaction Launcher Wizard via the menu path, **SPRO • CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • TECHNICAL ROLE DEFINITION • TRANSACTION LAUNCHER • COPY/DELETE LAUNCH TRANSACTIONS** (see [Figure 8.52](#)).

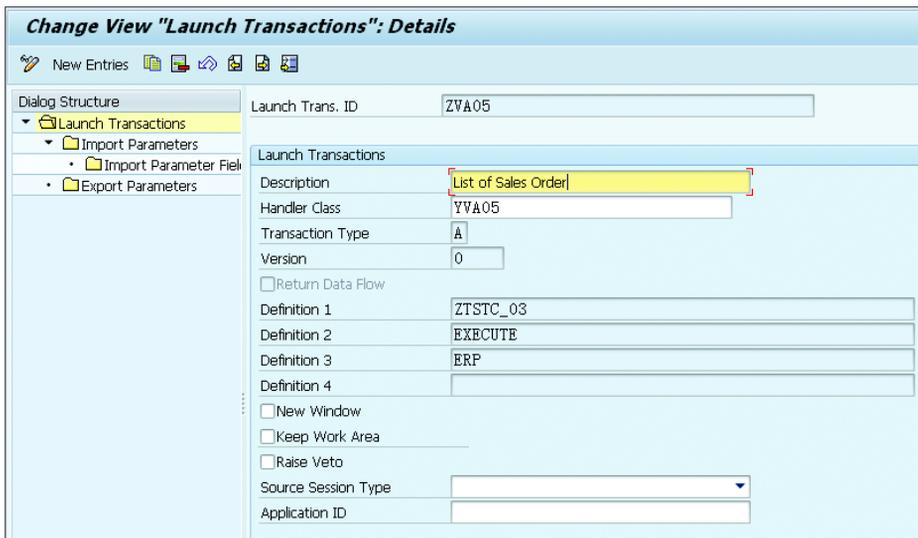


Figure 8.52 Copy/Delete Launch Transactions

- Assign the transaction launch ZVA05 to the CRM WebClient UI business role. Create the new LOGICAL LINK ID, as shown in [Figure 8.53](#), with the TARGET ID EXECLTX and PARAMETER as ZVA05.

Change View "Define Logical Links": Details

New Entries

Dialog Structure

- Define Logical Links
 - Define Work Center Link Groups
 - Assign Links To Work Center Link Group
 - Define Work Centers
 - Assign Work Center Link Groups To Work Center
 - Define Direct Link Groups
 - Assign Links To Direct Link Group
 - Define Navigation Bar Profiles
 - Assign Work Centers To Navigation Bar Profile
 - Assign Direct Link Groups To Navigation Bar Profile
 - Assign Components To Navigation Bar Profile
 - Define Specific Outbound Plug Mappings
 - Define Generic Outbound Plug Mappings
 - Override Generic OP Mappings Per Component

Logical Link ID: ZVA05

Define Logical Links

Type: C Launch Transaction

Target ID: EXECLTX

Parameter: ZVA05

Parameter Class: CL_CRM_UI_LTX_NAVBAR_PARAM

Icon Name:

Title: Launch List of Sales Order

Description: Launch List of Sales Order

Figure 8.53 Defining the Logical Link ID for the Transaction Launcher

- Go to the DEFINE WORK CENTER LINK GROUPS, and add the Transaction Launcher LOGLINK ID to it, as shown in [Figure 8.54](#) and [Figure 8.55](#).

Change View "Define Work Center Link Groups": Details

New Entries

Dialog Structure

- Define Logical Links
- Define Work Center Link Groups
 - Assign Links To Work Center Link Group
- Define Work Centers
 - Assign Work Center Link Groups To Work Center
- Define Direct Link Groups
 - Assign Links To Direct Link Group
- Define Navigation Bar Profiles
 - Assign Work Centers To Navigation Bar Profile
 - Assign Direct Link Groups To Navigation Bar Profile
 - Assign Components To Navigation Bar Profile
 - Define Specific Outbound Plug Mappings
 - Define Generic Outbound Plug Mappings
 - Override Generic OP Mappings Per Component

Group ID: ZLAUNCH

Define Work Center Link Groups

Group Type: CC Reports

Icon Name:

Title: Launch list of Sales Order

Description: Launch list of Sales Order

Figure 8.54 Work Center Link Group

- Activate the Transaction Launcher logical link in the business role, and then access the business role, as shown in [Figure 8.56](#). The link to the Transaction Launcher is visible, and when you click the LAUNCH LIST OF SALES ORDERS link, the SAP ERP transaction is called and opens up, as shown in [Figure 8.57](#).

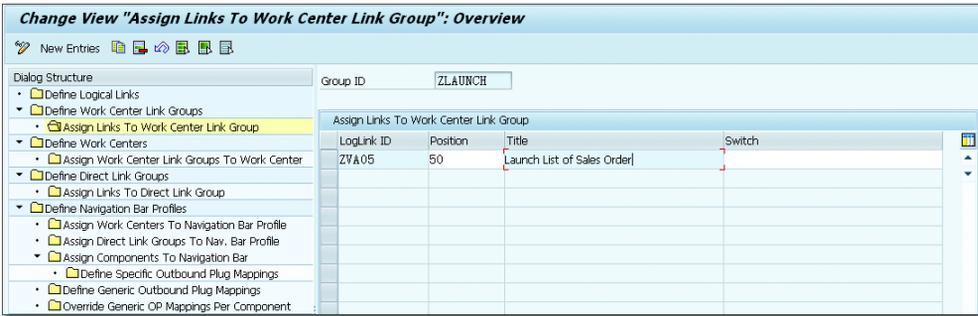


Figure 8.55 Assigning the Transaction Launcher Logical Link ID to the Work Center Link Group

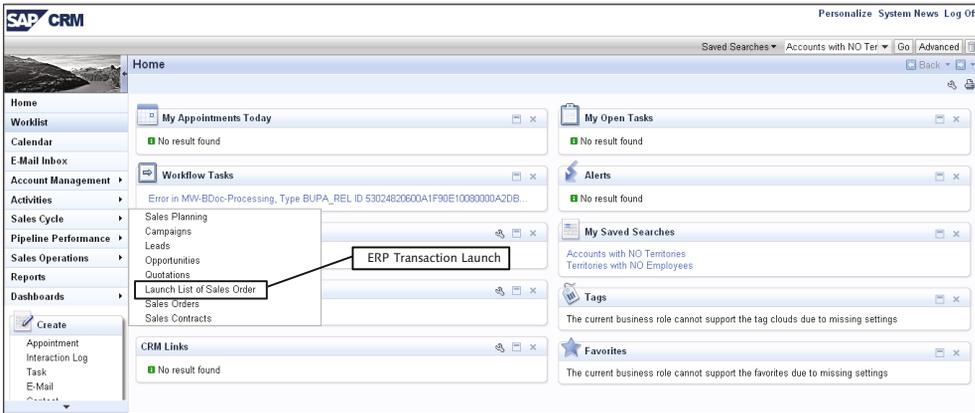


Figure 8.56 Launch List of Sales Order

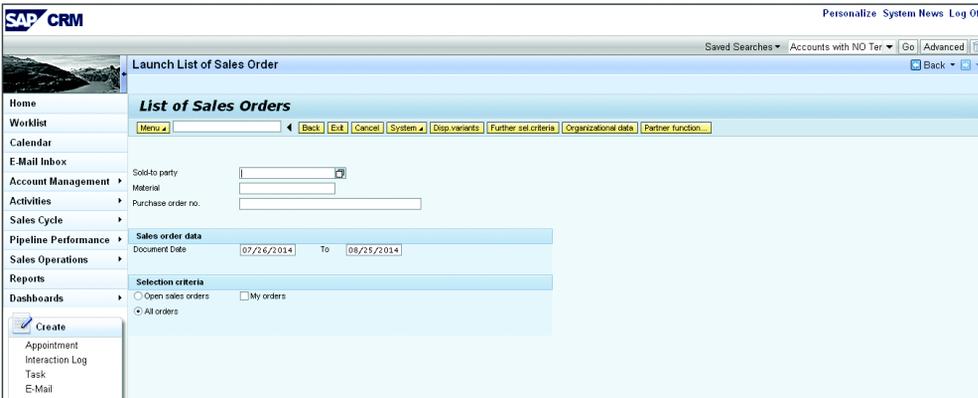


Figure 8.57 Transaction VA05 Launched

In this section, we've discussed the configuration steps for the navigation bar, header area, and work area. Understanding the tools available to configure these elements is important to overcome WebClient UI requirements. We also covered the Transaction Launcher and how to configure the BOR Transaction Launcher. In the next section, we'll discuss the AET, which is required to create a new field on the WebClient UI screen.

8.5 Application Enhancement Tool

The Application Enhancement Tool (AET) is integrated within the WebClient UI and can be launched from the WebClient UI screen. The AET is specifically used for creating new fields, defining dropdown lists for the custom fields, translating field labels, and making custom fields available in the search and result list.

The AET comes in handy when a WebClient UI consultant wants to create new fields based on specific business needs. With the AET, you can add, change, and delete custom fields.

Because you can use the AET to create the new field, we'll look at an example of creating a CUSTOMER CLASS field on the activity object with the dropdown list of GOLD, SILVER, and BRONZE. Follow these steps:

1. Launch the WebClient UI screen on which you want to add the new field. In this example, it's the BUSINESS ACTIVITY: NEW page, as shown in [Figure 8.58](#).

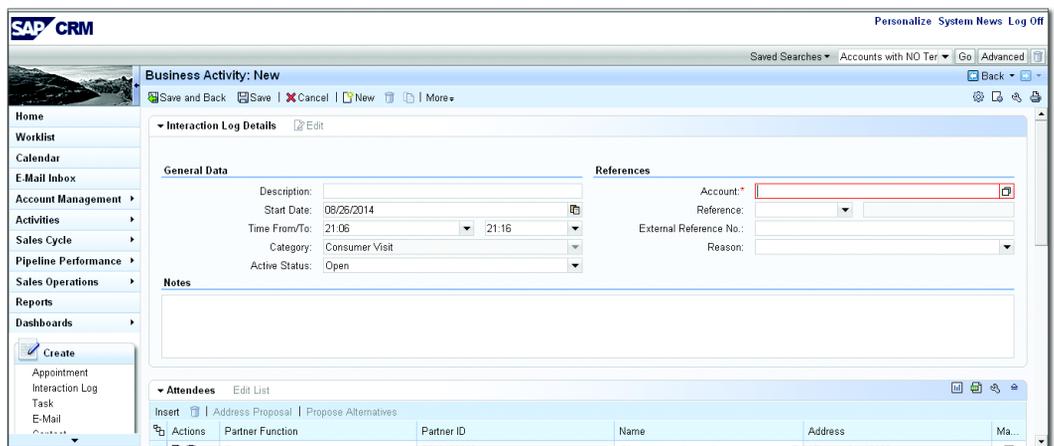


Figure 8.58 Business Activity Page

- Click on the CONFIGURATION MODE button, as shown in [Figure 8.59](#). The screen grays out ❶, and the new field is added to the view. Select the view that you want to add fields to, and a popup screen will appear ❷. Click on the CREATE FIELD button to create a new field.

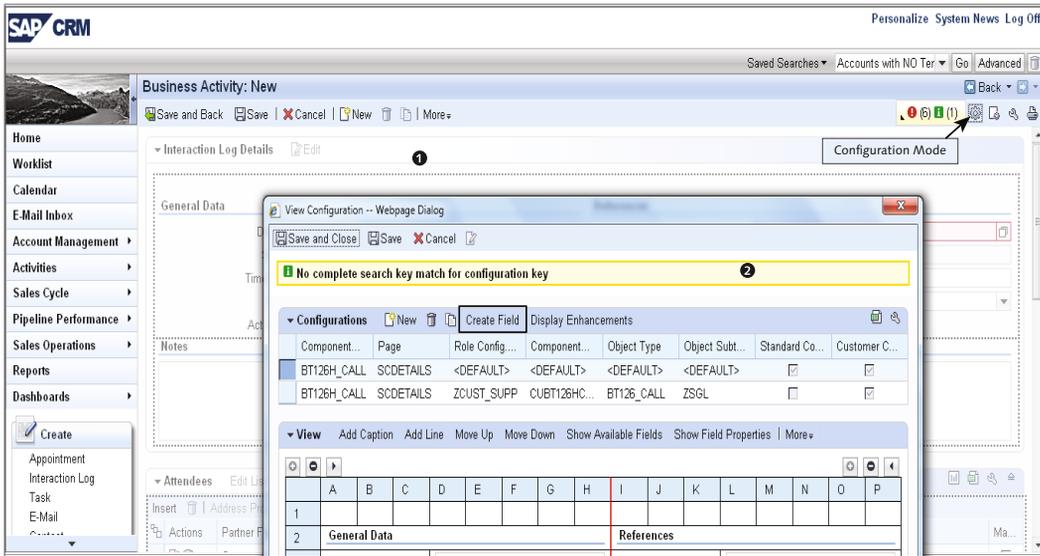


Figure 8.59 WebClient UI Screen in Configuration Mode

- As soon as you click the CREATE FIELD button, the pop up appears to select the object. Because we're adding the field to the activity, the object in the popup appears for INTERACTION LOG. Select INTERACTION_LOG in the OBJECT column (see [Figure 8.60](#)).
- On selecting the object, a popup appears where you must select the package for adding this field. Select ACTIVITY_H to add the field to BTACTIVITYH in the CONTEXT NODE/BOL column (see [Figure 8.61](#)).

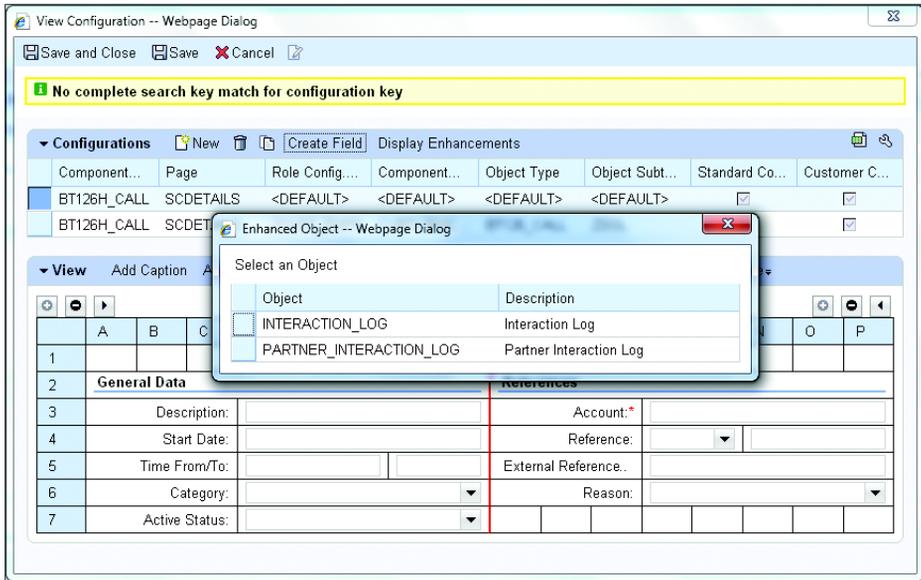


Figure 8.60 Object Selection

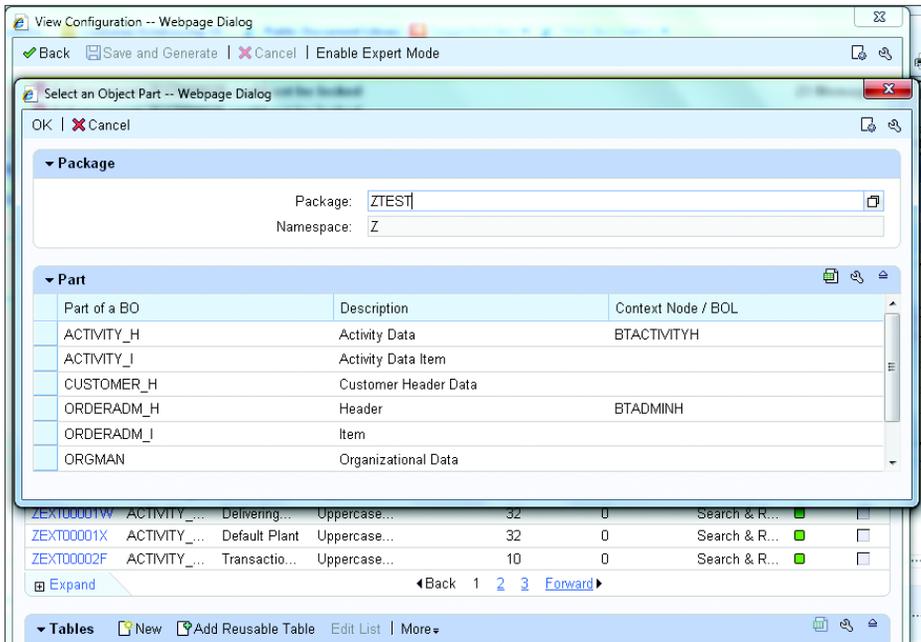


Figure 8.61 Package Selection

5. Enter the field details shown in [Figure 8.62](#). Additionally, if you need a drop-down list, then enter the values in the DROPDOWN LIST section. In our example, it's GOLD, SILVER, and BRONZE. After the data is entered, click the BACK button.
6. Select the field that you created, and click the SAVE AND GENERATE button, as shown in [Figure 8.63](#). Click the BACK button after the field is generated. When the popup appears, create the transport request, and save the changes in the transport request just created.

Field Details -- Webpage Dialog

Back Cancel Enable Expert Mode

Details

General

Calculated (Read-On..

Enhancement ID: ZEXT00000C

Field ID: ZZFLD000008

Field Label*: Customer Class

Search-Relevance: Search

Field Type*: Uppercase Text

Field Sub-Type:

Render/Validate As: Not Defined

Length*: 1

Decimal Places: 0

Check Table:

Search Help:

Object Part: ACTIVITY_H (ACTIVITY_H)

Enhancement Place: INCL_EEW_ACTIVITY_H

Created By:

Created On:

Generate:

Status: ⚠

Application-Specific Settings

BW Reporting: CRM Int. Reporting: Not used

Dropdown List

Insert

Input Code	Description
G	Gold
S	Silver
B	Bronze

Figure 8.62 Field Details

7. The CUSTOMER CLASS field created is available in the list of available fields. Bring that field to the ACTIVITIES details view, as shown in [Figure 8.64](#). Save the changes.

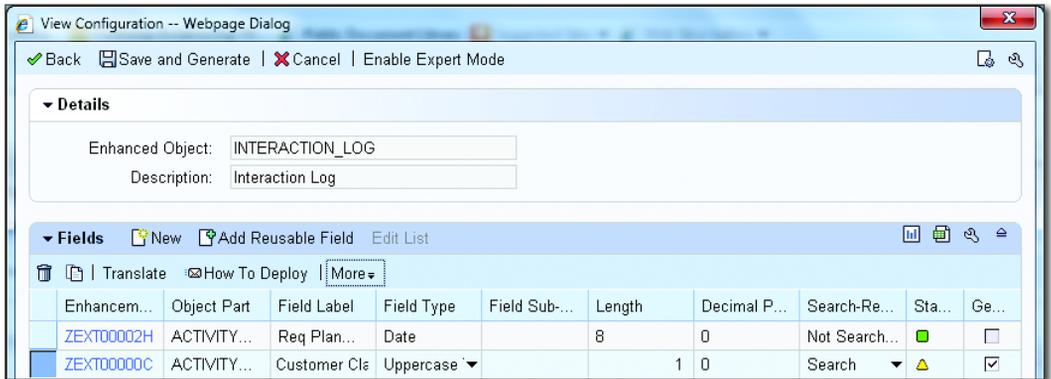


Figure 8.63 Save and Generate the Custom Field

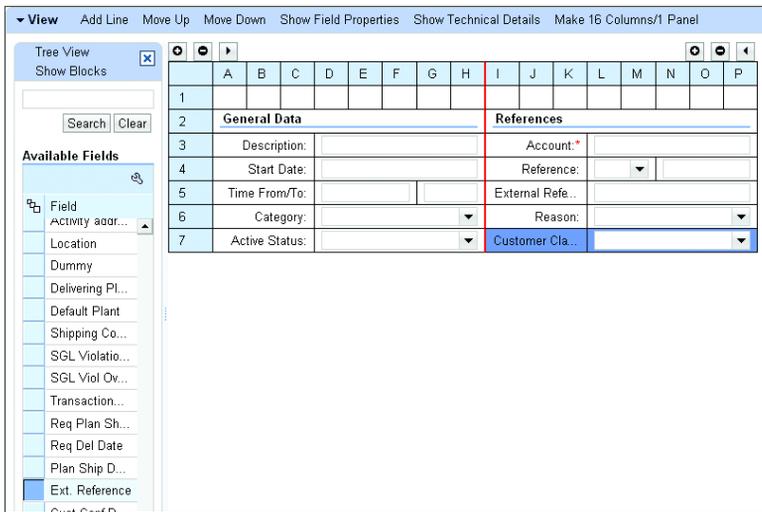


Figure 8.64 Custom Field Added to the Activity Details View

- Go back to the BUSINESS ACTIVITY: NEW screen to see the CUSTOMER CLASS field now available with the GOLD, SILVER, and BRONZE dropdown, as shown in Figure 8.65.

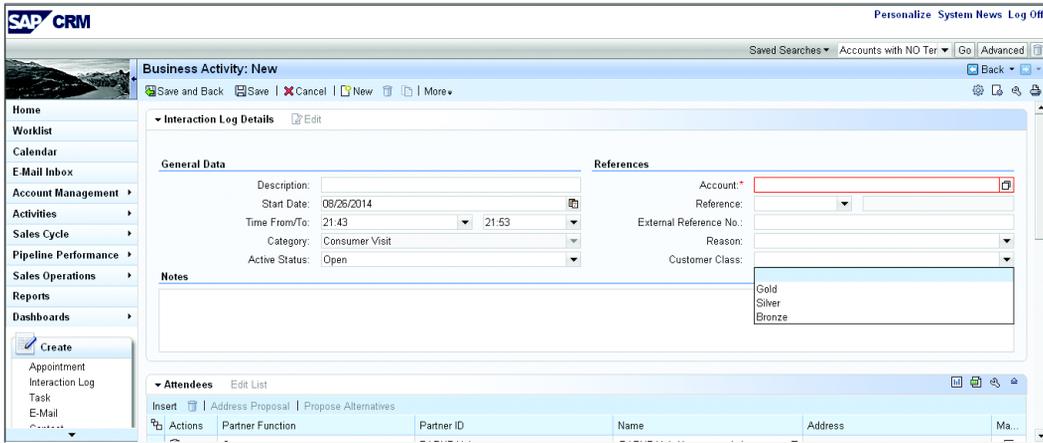


Figure 8.65 Business Activity – Custom Field Customer Class Created

This section provided an overview of the AET and its ability to create new fields. We used an example of creating a new field on the activity header transaction, which explains the tool and how you can use it to meet your specific business needs.

8.6 Summary

This chapter provided an in-depth understanding of the WebClient UI concept in SAP CRM and principles around the UI architecture. Starting with the WebClient UI framework, this chapter covered the Component Workbench and the UI flow logic, including the MVC concept and data flow from the presentation layer to the BOL and GenIL. This chapter also covered business roles and the configuration steps required to set up a business role. From a WebClient UI configuration perspective, the WebClient UI is divided into three areas: the navigation bar, header area, and work area. This chapter described each of these areas and their configuration steps. The Transaction Launcher and AET sections discussed the UI peripherals as well. In the next chapter, we'll look at the Interaction Center.

The Interaction Center is a core SAP CRM application that enables an organization to connect to customers through multiple channels. In this chapter, we'll look at the different Interaction Center integrations and configurations.

9 Interaction Center

As its name insinuates, the Interaction Center (IC) is an interaction between the seller and the buyer through a core SAP CRM application. Customers call an agent to place a new order or to express their grievances regarding a product they bought. The IC effectively manages customer interactions to resolve customer problems and support both the agents and manager who are involved in the interaction. The IC allows agents to manage both inbound and outbound communications in the form of email, phone, fax, chat, web, and more.

The IC is spread across SAP CRM business Marketing, Sales, and Service, which we refer to as IC Marketing, IC Sales, and IC Service, respectively. IC Management corresponds to the different channels when communicating with the customer. In addition, IC Analytics plays an important role in understanding the customer from an interaction record perspective.

In this chapter, we'll look at the different integrations that can be used with the IC, along with the additional functions provided with the application. We'll begin by looking at some of the business functions the IC provides.

9.1 Business Functions

The IC's core capabilities include telemarketing, telesales, customer service, shared service, and IC Analytics. Let's go through each of these core business functions briefly:

- ▶ **Telemarketing**

Telemarketing provides sales representatives in an organization with the ability

to carry out campaigns and generate leads from those campaigns. Through tele-marketing, you can generate a call list that can be used to make cold calls to leads. These leads can be nurtured and converted into opportunities, and finally sales. Additionally, a representative can also personalize certain products and offers for specific customers.

► **Telesales**

Telesales offers a wide range of functionality within accounts management, contact management, quotation management, and sales order management. The motivation of any organization is to sell its products and generate revenue. Sales representatives or customer service can create a quote and sales order from the IC telesales and then review or create accounts and contacts. Customer service has the capability to access account fact sheets (see [Section 9.4.2](#)) and review customer information. With telesales, the sales representative can create leads and opportunities as the part of presales activity.

► **Customer service**

Customers call to place complaints about products purchased from an organization. The IC gives customer service the ability to log those complaints and service the customers appropriately. This helps to quickly resolve customer complaints.

► **Shared services**

IC capabilities also include shared services key functions such as the employee IC, accounting IC, and IT service desk.

► **IC Management**

IC Management allows you to manage key features such as routing rules, communication channels, and assigning customers to the right agent.

► **IC Analytics**

IC Analytics offers reporting capabilities with respect to communication analytics, process-based analytics, and blended analytics.

[Figure 9.1](#) shows the SAP CRM IC WebClient layout highlighted with the following key IC features:

❶ **Scratch pad**

This is a workspace for storing electronic notes in the IC.

❷ **Toolbar**

This shows the different options for customer service representatives to take

when the call is received by the customer. For example, customer service representatives can accept or reject a call, transfer a call, or conference a call.

3 Account information

This shows the information of the active customer on call such as customer name and company.

4 Alert

This shows the information that helps customer service representatives take necessary steps when the customer is on call. For example, an alert might be a reminder to close the call after a specified time period.

5 Communication information

This shows the information from Communication Management Software (CMS), for example, a customer calling number and whether the call is an inbound or outbound with the duration of the call.

6 Broadcasting messaging

This shows the message that can be broadcasted to the whole customer service representative group.

7 Queue status

This shows the business role you've been assigned to and the date and time.

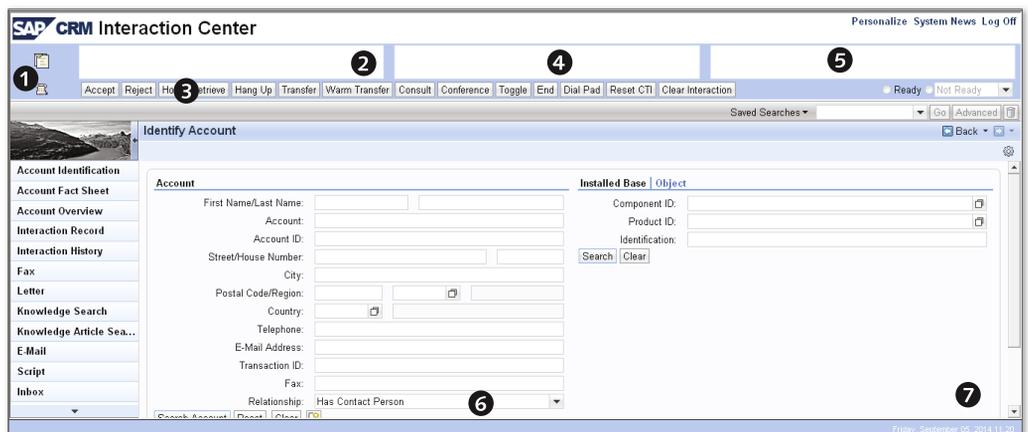


Figure 9.1 Interaction Center WebClient Layout

The IC navigation bar profile can be configured to suit your business needs and include IC Marketing, IC Sales, or IC Service functions. In the sections that follow, we'll look at the IC Marketing, Sales, and Service functionalities available.

9.1.1 IC Marketing

IC Marketing covers most of the marketing functionality, including the marketing planning, Campaign Management, customer segmentation, creating target groups, Lead Management, and Loyalty Management. These topics are covered in detail in [Chapter 4](#) of this book.

The IC comes into the picture when the sales representative needs to execute campaigns by communicating with the customers or possible customers via email or telephone. For example, let's say a company is running some kind of product promotion and has created a campaign to generate product awareness with new and existing customers. First, the company creates the target group based on certain attributes, for example, hobbies, region, and so on. This target group is assigned to the campaign, and the sales representative is asked to call the customers within the target group to raise awareness of the products and discounts that the customer can receive when buying the product. The sales representative generates the call list from the target group and runs the campaign by executing the calls to the customers within the target group. The representative generates the lead based on the customer call acceptance, and those leads are then further converted to opportunities and finally sales. This is one of the examples where IC plays a vital role in executing these tasks.

9.1.2 IC Sales

IC Sales covers a wide range of functionality that customer representatives and sales representatives use as part of their day-to-day activities. Most companies cover the following work centers with the IC Agent role (some of which are shown in [Figure 9.2](#)): ACCOUNT IDENTIFICATION, SALES CYCLE (leads, opportunities, quotes, contracts, and sales orders), COMPLAINTS, AGENT INBOX, PRODUCT INFO, and REPORTS. IC Sales overlaps with the SALESPRO business role.

IC Sales begins with the creation of leads and then turns them into opportunities. Details regarding configuring leads are covered in [Chapter 5](#), and opportunity details are covered in [Chapter 6](#). After the opportunity is set with the status WON, the customer calls to place an order with the customer service representative. The customer service representative confirms the account and accesses the customer's account history. He then places an order for the customer. While placing an order, the customer service representative searches for the product and can also offer some product proposals (i.e., cross-sell or up-sell). After the order is saved, the confirmation is received by the customer via email or fax.

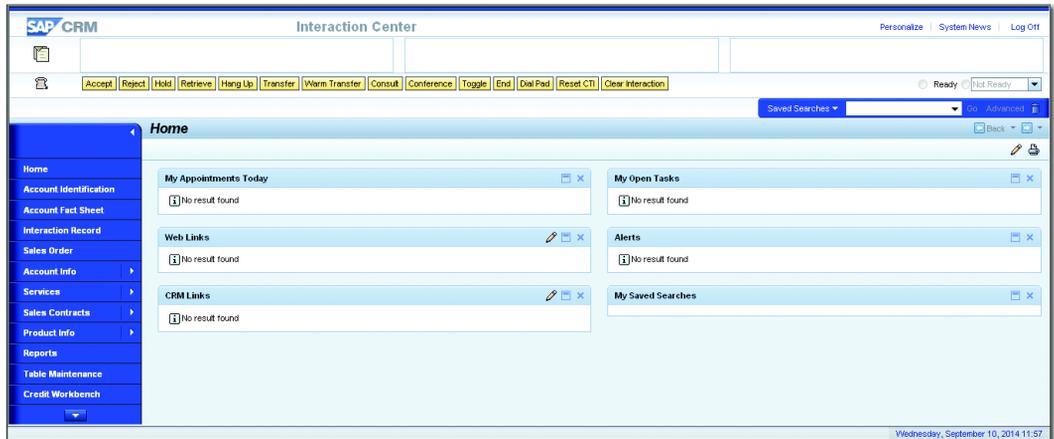


Figure 9.2 Interaction Center Sales

There are two types of sales orders that customer service representatives can place from the IC WebClient: SAP ERP sales orders or SAP CRM sales orders.

When using SAP ERP sales orders, the orders aren't saved in the SAP CRM database but are stored directly in SAP ERP via the LORD Interface (Lean Order Interface). When creating an SAP CRM sales order, however, the orders are saved in the SAP CRM database triggering middleware replication to SAP ERP. This is shown in Figure 9.3. A detailed configuration and scenario regarding these sales order is covered in [Chapter 6](#).

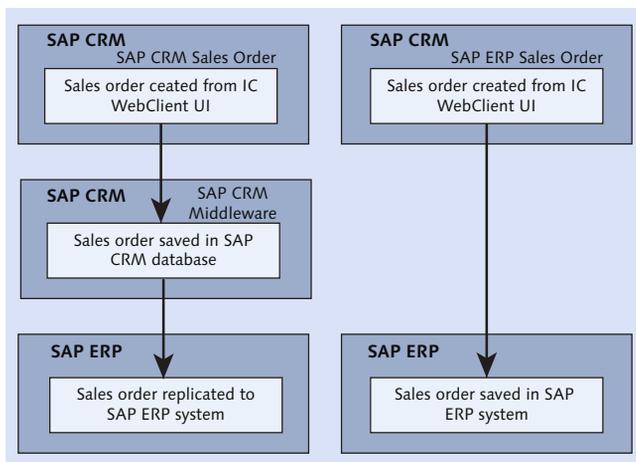


Figure 9.3 SAP ERP Sales Order and SAP CRM Sales Order

9.1.3 IC Service

The IC Service helps an organization conduct and track its service transactions effectively. Real-time communication with service transaction updates results in addressing customer grievances on a timely basis. Customer service is one part of the organization that always has the challenge to keep up with customer complaints and service requests.

To provide optimal customer service, it's imperative to be proactive. Overcoming these problems often results in monetary gains and a good name in the market. Details regarding SAP CRM Service functions, business processes, and configuration are covered in [Chapter 7](#). However, you can perform the following functions with the IC Service:

► **Service order**

As previously described, a service order is a specific agreed-upon service to be performed between the service recipient and service provider. It allows agents to deep dive into technical analysis of the issue received by the customer and categorize the issue based on multilevel categorization. The service order can have service items, service part items, sales items, or expense items.

► **Service request**

A service request transaction within IC Service provides the ability to fulfill customer services and track the progress of the service cycle with a service level agreement (SLA). The service request can be used in the shared services scenario, for example, SAP IT Service Management, or it can be used in the customer-facing service scenario, for example, a customer calls for the delivery of the products or nonfunctioning machinery parts. You can dispatch, set up an approval process, maintain categorization, and so on to fulfill the customer service request.

► **Complaints**

Customers calling for complaints and returns can be logged as complaints in SAP CRM. Complaints have a lot of features. For example, you can categorize complaints based on the customer calls received. This can include late deliveries, over pick, under pick, damaged products, and more. You can assign multi-level categorization to escalate the complaints to different departments and get dollar amount approval. From complaints, you can trigger credit memos, debit memos, free of charge, substitute deliveries, and return requests.

► **Case Management**

Case Management allows companies to manage complex problems. These can be assigned to different groups that need to be work on and resolve the same issue. Case Management service capabilities include change request management, case processing, and activity processing.

► **Product registration**

Product registration allows the agent to search an Installed Base (IBase) and Installed Object (IObject). If the product is registered, the confirmed account shows the list of the products bought by the customer on the account identification screen. This helps to go directly to the details of the product that the customer has called for.

► **Knowledge search**

This allows the agent to identify solutions to known problems and resolve the customer issue on the first call, thereby providing maximum customer satisfaction.

The IC allows companies to maintain core areas of SAP CRM while taking advantage of the many features provided by the IC application. In the next two main sections, we'll look at two integrations that can be performed in the IC: Computer Telephony Integration and Multichannel Integration.

9.2 Computer Telephony Integration

Computer Telephony Integration (CTI) involves connecting an organization's telephone system to the application software to automate call center functions in order to reduce the call cycle time. Sales representatives get the account information readily available on their screen without browsing through the different application screens.

CTI is a technology that has CMS sitting on the Private Branch Exchange (PBX)/Automated Call Distribution (ACD) switches. The CTI system setup can be different for different vendors. Some of the advantages of using the CTI include the following:

- Faster connections for customer service to a specific customer's information in SAP CRM, reducing wait time and total handle time.

- ▶ More complete customer interaction history in SAP CRM, enabling improved customer experiences based on visibility of the last interaction and complete history.
- ▶ Analytics capability through linking the caller ID with the interaction record. This gives a complete view of the call being made and linkages of all the transactions executed for the customer during the call. Customer service and managers can access this information in real time.

9.2.1 Business Functions

Before going through some of the key telephony integration points, let's look at some telephony functions:

▶ **Queuing**

Queuing is most commonly referred to as waiting in line to get someone to answer your call. For heavy inbound calls, the call wait time increases, and sometimes telephony systems direct you to leave your number for the call back option. Queues are managed by ACD, which, as mentioned previously, is a component of the CTI system. It helps you pass the call to the right agent and manage the queues based on the rules set up in the CTI system.

▶ **Call treatment**

Call treatment is also managed by ACD. As soon as a call is received, ACD decides what to do with the call, that is, whether to send it to *Interactive Voice Response (IVR)* or send it to on hold.

▶ **Routing**

Routing customer calls to the right agent is imperative to get the customers serviced properly. ACD also manages the call routing based on the service skill group or the multichannel routing, and so on.

With CTI, certain telephony functions can be carried out in the IC. These functions work as screen popups and include the following:

▶ **Automatic Number Identification (ANI)**

ANI is used to identify an account based on the caller's telephone number. The account identification is only successful when the information on the customer master record in the SAP CRM system matches with the caller's telephone number. This approach is tedious because the caller's telephone number isn't

always the same as the one maintained in the customer master record. Therefore, the success rate isn't very high in this case.

▶ **Dialed Number Identification Service (DNIS)**

DNIS is a functionality that helps route the call to the right agent based on a 1-800 number. Let's say Company ABC is running some kind of promotion or a campaign to launch a new product. For this reason, the company has assigned a specific 1-800 number, which will route the call to the specific skill group. Therefore, anybody calling this number will be routed to the right agent, and the customer information is populated on the screen with the caller number.

▶ **Interactive Voice Response (IVR)**

Presently, many companies have implemented IVR to get a successful account identification as compared to others such as ANI for which the success rate is very low. IVR provides enough key information about the caller to determine who is calling and identify the caller's account within SAP CRM.

▶ **Call Attached Data (CAD)**

Information gathered from the IVR is collected in the CAD, which is then used to identify the account on the ACCOUNT IDENTIFICATION screen. In the IC, it's possible to identify a customer by extracting the customer's account ID from the CAD.

9.2.2 SAP Business Communications Management

SAP provides its own CMS that offers CTI functions: *SAP Business Communication Management (SAP BCM)*.

SAP BCM is used to connect customers with the right agent. The communication between a customer and company agent can be through different channels such as email, phone, or fax. [Figure 9.4](#) shows the SAP BCM and SAP CRM integration architecture. In other words, SAP BCM is a contact center solution that helps organizations connect with customers rapidly and resolve their issues with quality and target costs. The communication can be inbound or outbound.

Following are some of SAP BCM's capabilities:

- ▶ Voice Over IP (VoIP) telephony service
- ▶ Unified multichannel contact routing
- ▶ Voicemail and messaging services

- ▶ Presence and directory services
- ▶ Call recording and contact history services
- ▶ Online monitoring and analysis tool
- ▶ Consolidated administration, management, and control
- ▶ Softphone, IP desk phone, and mobile clients
- ▶ Deep SAP business context integration through open interfaces

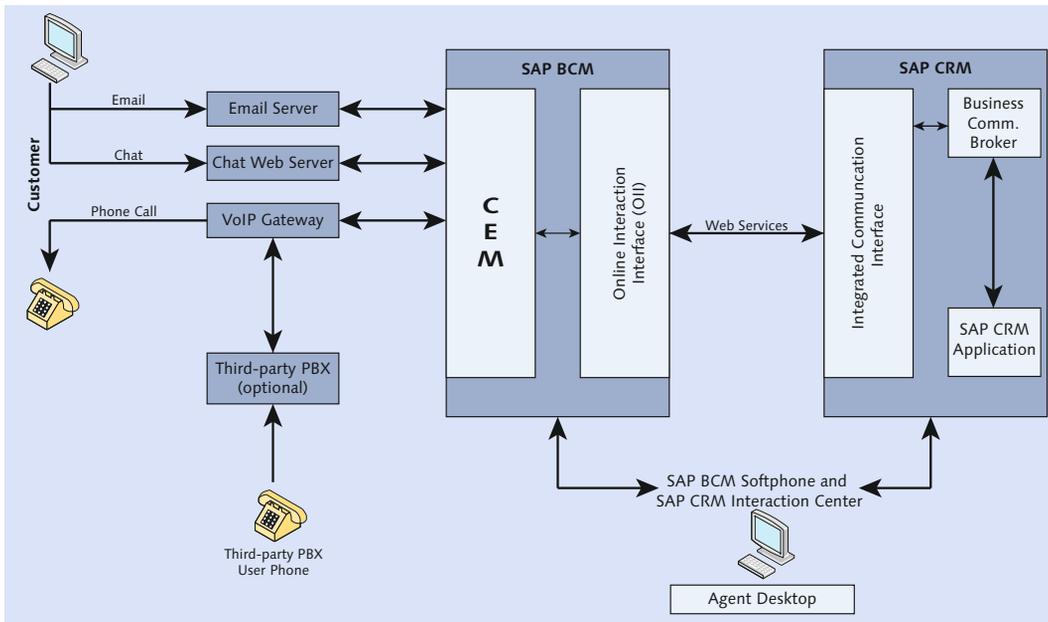


Figure 9.4 SAP BCM and SAP CRM Integration Architecture

9.2.3 Third-Party Computer Management Software

Besides SAP BCM, there are different third-party, SAP-certified CMS vendors, including Genesys, I3, Avaya, and Cisco, which can be connected to SAP CRM via the *SAP CRM Integrated Communication Interface (SAP CRM ICI)*. Similar to SAP BCM, these CMSs support multichannel integration and enable a 360-degree view of customers.

To get a better idea of what a third-party vendor provides, let's look at Genesys as an example. Genesys has a bolt-on called Gplus Adapter that is considered one of the leading multichannel integrations for email, phone, and fax routing capabilities.

Genesys Gplus Adapter is an SAP-certified solution that integrates Genesys' real-time interaction solutions. In the next section, we'll use Genesys as an example system for configuring the CTI integration.

9.2.4 Configuring the Computer Telephony Integration

In this section, we'll look at the steps involve in configuring the external CTI system with the SAP CRM IC WebClient. Follow these steps:

1. Maintain the CMS profile via the SAP CRM configuration by navigating via the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • INTERACTION CENTER WEBCLIENT • BASIC FUNCTIONS • COMMUNICATION CHANNELS • DEFINE COMMUNICATION MANAGEMENT SOFTWARE PROFILES. Add the entries, as shown in [Figure 9.5](#).

Com Mgmt Software Profile	Description	Manual CMS ...	Presence En...	Multisessioning	Manual Channel and Queue Assignment	Work Mode Selection
SAPCCS	FOR CONNECTION TO CONFIGURED SAPCCS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Manual Assignment to Ch...	Radio Buttons Combined wi

Figure 9.5 Define Communication Management Software Profile

2. Next, maintain the CMS connections by following the menu path, INTERACTION CENTER • INTERACTION CENTER WEBCLIENT • ADMINISTRATION • COMMUNICATION MANAGEMENT SOFTWARE • INTERFACE SETTINGS • MAINTAIN COMMUNICATION MANAGEMENT SOFTWARE CONNECTIONS. As shown in [Figure 9.6](#), enter the COMM. MGMT SOFTWARE SYSTEM ID, which for our example is "GENESYS".

Comm. Mgmt Software System ID	Connection	Session Connection
GENESYS	4D933B263AAE2D36E1000000640701EC	INTEGRATION_SERVER

Figure 9.6 Communication Management Software Connections

3. Navigate to INTERACTION CENTER • INTERACTION CENTER WEBCLIENT • ADMINISTRATION • COMMUNICATION MANAGEMENT SOFTWARE • MAINTAIN SYSTEM SETTINGS. In [Figure 9.7](#), maintain the system settings for CMS, including the channels you want to integrate, for example, telephone, email, chat, and so on. [Figure 9.8](#)

shows the configuration to maintain the MAIL E-MAIL and PHONE TELEPHONY channels.

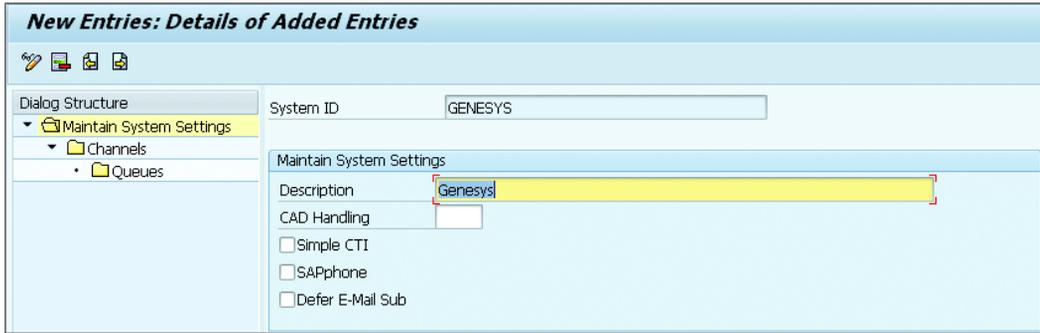


Figure 9.7 Maintain System Settings

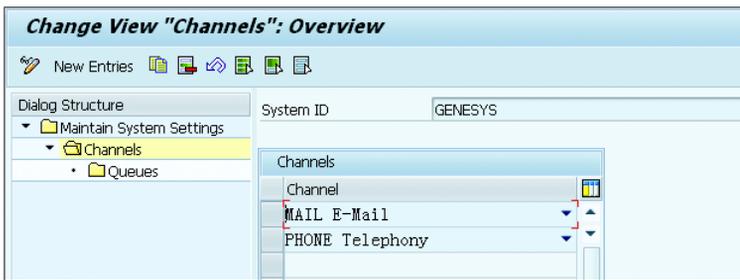


Figure 9.8 Maintain Channels for the CMS

- Again, assign the COMMUNICATION MANAGEMENT SOFTWARE SYSTEM ID to the CMS profile via the menu path, INTERACTION CENTER • INTERACTION CENTER WEBCLIENT • ADMINISTRATION • COMMUNICATION MANAGEMENT SOFTWARE • ASSIGN PROFILES (see [Figure 9.9](#)).

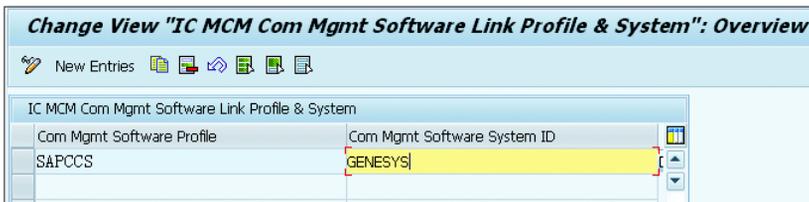


Figure 9.9 IC Communication Management Software Linking the Profile and System

5. Assign the CMS profile created to the function profile CONTACTCENTER, as shown in [Figure 9.10](#). Navigate to CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • BUSINESS ROLES • DEFINE BUSINESS ROLE.

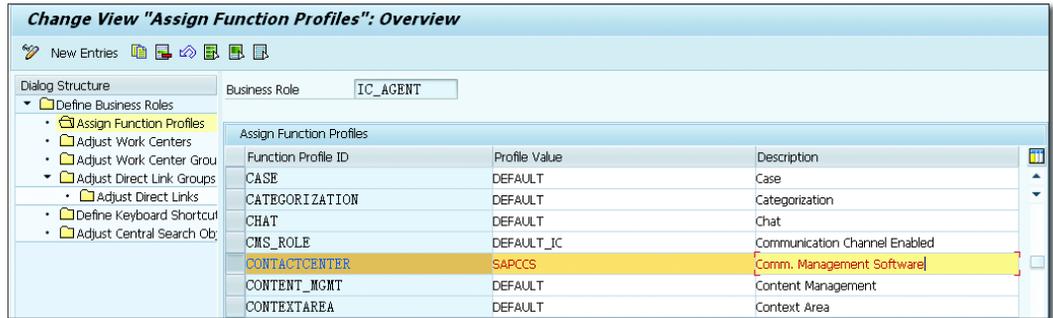


Figure 9.10 Assigning Function Profile CONTACTCENTER

In this section, we've discussed the various features and functions that CTI provides. In addition, we looked at SAP's CMS option, which includes SAP BCM and third-party vendors such as Genesys. These can be used to connect SAP CRM via SAP CRM ICI and Business Communication Broker (BCB) to integrate CTI functionality. Finally, we walked through the configuration steps for connecting SAP CRM to CTI using Genesys as the CMS. Next we'll look at the second type of integration possible in the IC.

9.3 Multichannel Integration

In addition to using the telephone as a form of communication integration, SAP CRM can also be integrate with other communication channels with the help of CMS. In this section, we'll look at multichannel integration for email, fax, letter, SMS, and web chat.

9.3.1 Email

Apart from telephone use, email has become a primary communication channel for organizations. In an environment where customer care on phones isn't feasible, customer communication is highly based on email or fax. Email integration in SAP CRM can be done in two ways:

► Pull email

Figure 9.11 shows the email flow via SAP CRM ICI and SAPConnect. In the pull email mechanism, whenever email is routed via SAPConnect, it goes to the agent group inbox based on the workflow and routing rules within the Email Response Management Service (ERMS). The IC agent then accesses the inbox to pull the emails and work on the issue.

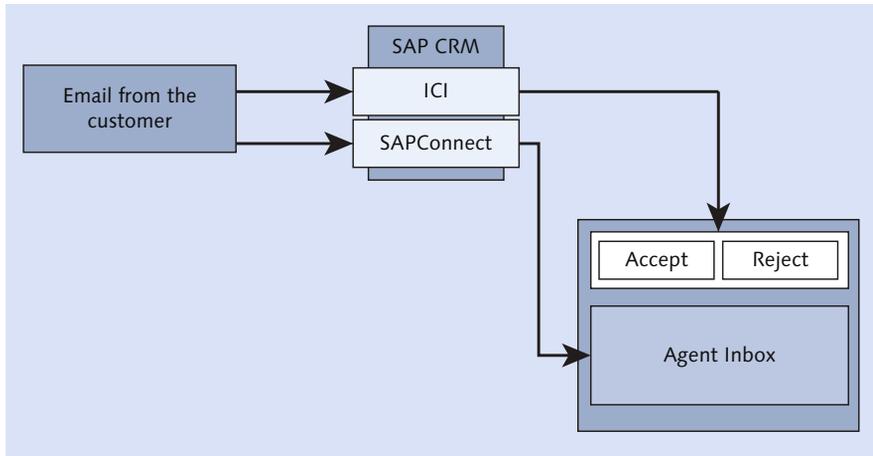


Figure 9.11 Email Flow to the SAP CRM System

► Push email

In the push email mechanism, when the email flows through CMS, which connects the SAP CRM system via SAP CRM ICI, the email shows as accepted or rejected on the ACCOUNT IDENTIFICATION screen of the IC agent. When the agent accepts the email, a screen pops up, and the account information is populated accordingly.

When working through SAPConnect, the email flow is as follows:

1. Email is received from the email server that is connected to SAPConnect.
2. This triggers the inbound flow distribution (i.e., dispatching email to the workflow).
3. Workflow routes the email as a work item to the IC agent.
4. ERMS triggers in to route the email to the agent inbox.
5. The agent inbox receives the email to be worked on.

Figure 9.12 shows the email interaction with the SAP CRM system where you can see one other ERMS diverting the email to SAP CMS as ERMS push emails.

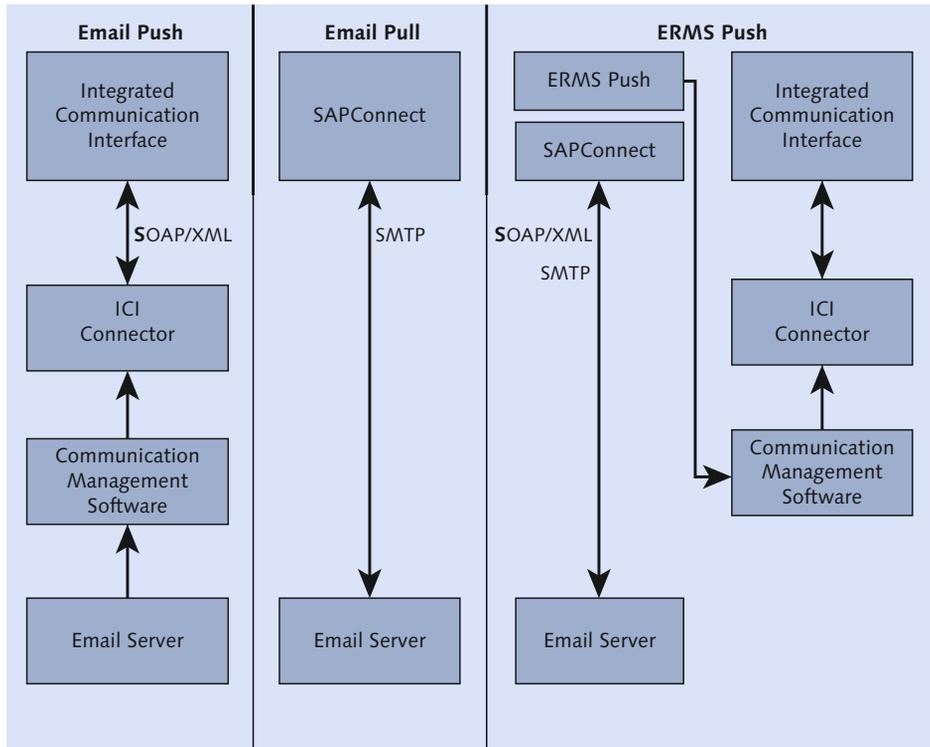


Figure 9.12 Email Interaction within SAP CRM

Agent Inbox

Refer to SAP Note 882653 (Frequently Asked Questions (FAQs) about the Agent Inbox) to understand some of the key concepts of the email flow to the agent inbox. SAP Note 455140 (Configuration of Email, Fax, Paging, or SMS Using SMTP) provides you with the configuration steps to set up SAPConnect.

9.3.2 Fax, Letter, and SMS

Like email, fax, letter, and Short Message Service (SMS) can be integrated with CMS or SAPConnect. The IC can communicate with these different channels. SAPConnect can be connected with the fax server, which is then routed to the IC

agent inbox using SAP workflow similar to the previously described email flow. When using SAP CRM ICI, the faxes are pushed to the IC agent, which results in the screen popup.

Letters aren't very widely used in the day-to-day business environment. The process of pushing letters into the SAP CRM system is a bit different from any other communication channel. When a letter is received from the customer, someone from the company has to scan that letter physically and run the *ArchiveLink* scenario (Transaction OAWD). The ArchiveLink scenario uses the workflow to create the work items and push them to the IC agent group box. These are categorized as letters so that the IC agent can pull these to work on them.

SMS can also be integrated with SAP CRM IC as one of the communication channels. SMS can also be received via SAPConnect just like email via SAP CRM ICI.

9.3.3 Web Chat

Web chat is growing in industries where immediate interaction is a key to solving customer issues. Although this communication channel isn't widely used due to social media awareness, people are more into communicating with messenger services. The IC does provide the capability to accept web chats from customers and reply to address their concerns.

You can also leverage the *interactive scripting* functionality with the web chat. Based on the issues, you can have the text reader available to reply back to the customer. The IC provides the capability for one agent to chat with multiple customers at the same time.

In this section, we discussed the multichannel communication integrations that can be employed with the IC, as well as provided an overview of how these channels can be integrated to SAPConnect or SAP CRM ICI.

9.4 Account Identification and Account Fact Sheets

IC agents can view the account details when a customer calls via the ACCOUNT IDENTIFICATION screen. After a customer account is created, an account fact sheet is made available allowing the IC agents to get an overview of their customers.

In this section, we'll discuss account identifications and account fact sheets, along with the steps involved in their creation and configuration.

9.4.1 Account Identification

As previously stated, IC agents have the ability to review account details when a customer calls in by confirming the account on the ACCOUNT IDENTIFICATION screen. Most companies have requirements to confirm multiple partners. In these scenarios, you need to configure the account identification profile for multiple business partners. After the account is confirmed, the accounts are carried over to the business transaction automatically until the call ends.

Account searches are carried out for the following scenarios:

- ▶ Business-to-business (B2B)
- ▶ Business-to-consumer (B2C)
- ▶ Mixed B2B and B2C
- ▶ Employee

[Figure 9.13](#) shows the ACCOUNT IDENTIFICATION screen for the single account, which shows the confirmed account. The RESULT LIST shows the IBase ID and IObject ID. Based on your configuration of the object component, you can display the list of the IBase or IObject associated with the customer. This helps to directly drill into the product the customer bought and the issue in question, which helps the service representative service the customer appropriately when on a call.

[Figure 9.14](#) shows the customer account details on the ACCOUNT IDENTIFICATION screen. The overview consists of CONTACTS, ADDRESSES, INSTALLED BASE, HISTORY, RELATED PARTNERS, OBJECTS, and COMMUNICATION. You can drill into each of these objects and see the details on the right side of the screen.

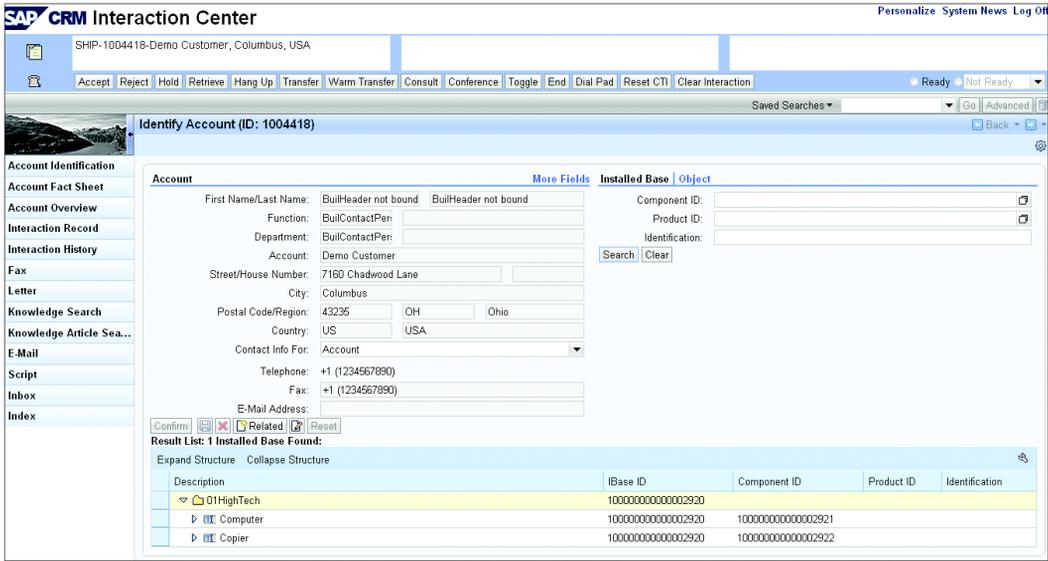


Figure 9.13 Account Identification Screen

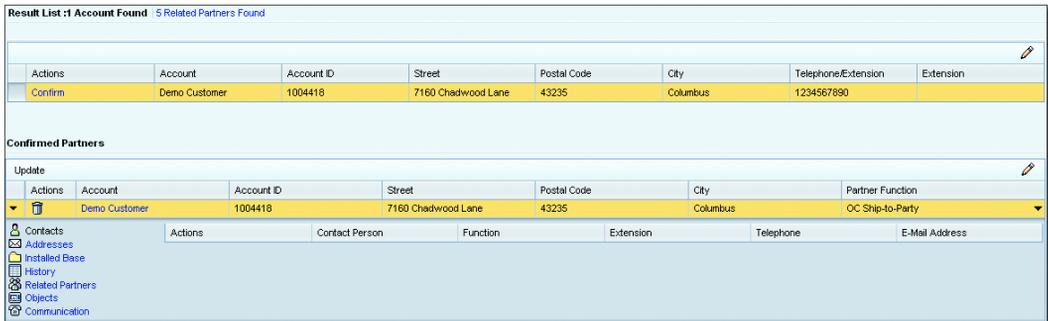


Figure 9.14 Result List and Briefcase

Figure 9.15 shows the multiple ACCOUNT IDENTIFICATION screen wherein the ship-to and sold-to parties are confirmed. The RESULT LIST shows the CONFIRMED PARTNERS.

The screenshot shows the SAP CRM Interaction Center interface for identifying an account. The title bar indicates 'Identify Account (ID: 1004418)'. The search criteria are as follows:

- Account Role: All
- Account: (empty)
- Account ID: 1004418
- Relationship: All
- Related Partner Role: Contact Person
- First Name/Last Name: (empty)

The result list shows one account found:

Actions	Account	Account ID	Street	Postal Code	City	Telephone	Extension	Complete name
Confirm	Demo Customer	1004418	7160 Chadwood...	43235	Columbus	1234567890		BuilHeader not b...

Below the result list, there is a section for 'Confirmed Partners' with an 'Update' button and a table:

Acti...	Account	Account ID	Street	Postal Code	City	Partner Function
▾	Demo Customer	1004418	7160 Chadwood Lane	43235	Columbus	Main Partner
▾	Demo Customer	1004418	7160 Chadwood Lane	43235	Columbus	Contact Partner

Figure 9.15 Multiple Account Identification

Let's now go through the configuration steps required to set up the account identification functionality for multiple partners. Follow these steps:

1. Use the following menu path to configure the ACCOUNT IDENTIFICATION PROFILE: CUSTOMER RELATIONSHIP MANAGEMENT • INTERACTION CENTER WEBCLIENT • MASTER DATA • DEFINE ACCOUNT IDENTIFICATION PROFILES FOR MULTIPLE BUSINESS PARTNERS.
2. Figure 9.16 shows the ACCOUNT IDENTIFICATION PROFILE DETAILS view with the CAD APPLICATION ID and XSLT FILE that allows you to connect with the IVR system. If you maintain the CAD APPLICATION ID name and XSLT FILE, it allows you to use the contact's attached data from the IVR system to identify the account. All the available XSLT tags and attributes are listed and explained in the sample XSLT program CRM_IC_BPIDENT_EXT_IAD_TO_ABAP.
3. Figure 9.17 shows the AUTO CONTINUE functionality that can be activated for different channels. If you activate the CONTINUE check for any of the channels, the confirmation is automatically performed as soon as the unique accounts are found.

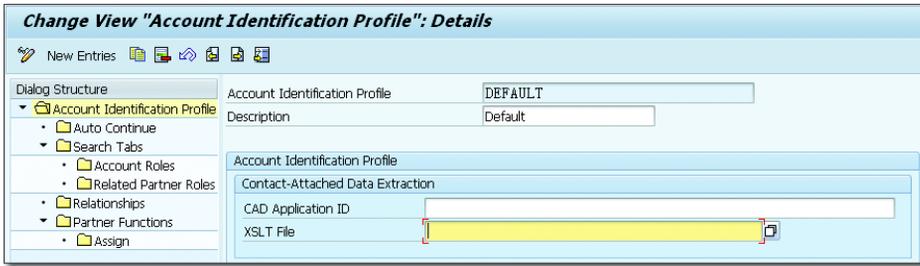


Figure 9.16 Account Identification Profile

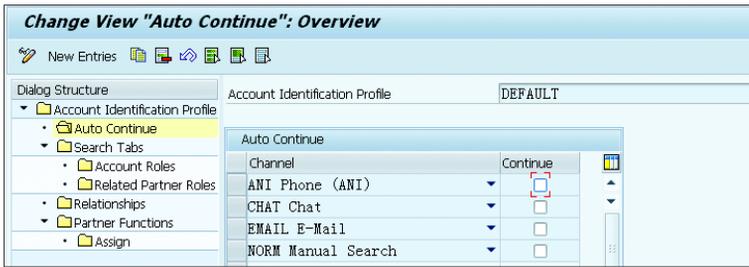


Figure 9.17 Auto Continue

4. Figure 9.18 shows the SEARCH TABS that are available on the ACCOUNT IDENTIFICATION screen. As shown, there are five tabs available: DETAILS, ACCOUNT, EMPLOYEE, INSTALLED BASE, and OBJECT). If your business scenario doesn't require IBASE and OBJECT tabs, you can remove the configuration as shown in Figure 9.18.

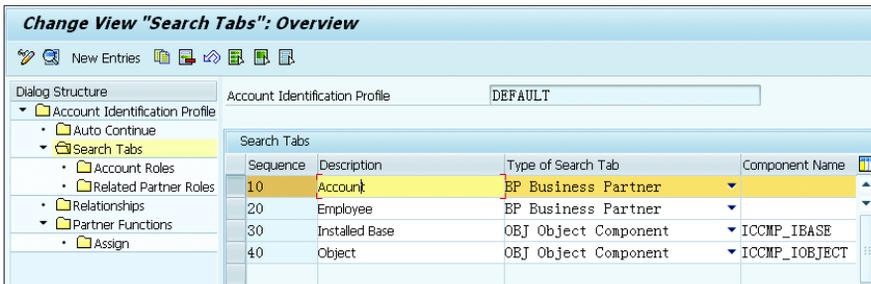


Figure 9.18 Search Tabs

5. The CHANGE VIEW "SEARCH TABS": DETAILS screen allows you to define the account identification scenarios, such as B2B, B2C, or EMPLOYEE (see [Figure 9.19](#)). You can also activate FIND RELATED PARTNERS AUTOMATICALLY and activate the account from the ACCOUNT IDENTIFICATION screen.

Figure 9.19 Search Tab Details

6. [Figure 9.20](#) shows the ACCOUNT ROLES configuration, where you can add the account role; those accounts can be searched on the ACCOUNT IDENTIFICATION screen. The ship-to party isn't listed in [Figure 9.20](#); if you try to search for ship-to, it won't return any account.
7. [Figure 9.21](#) shows the RELATED PARTNER ROLES configuration. The RELATED PARTNER ROLES field on the ACCOUNT IDENTIFICATION screen comes with this configuration.

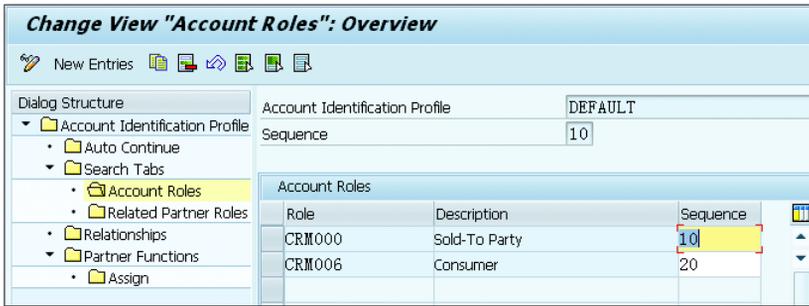


Figure 9.20 Account Roles

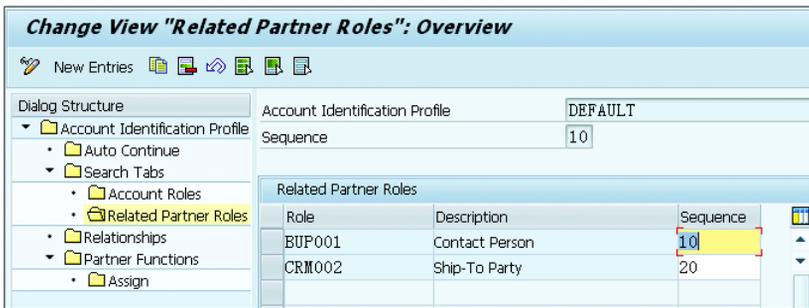


Figure 9.21 Related Partner Roles

8. [Figure 9.22](#) shows the RELATIONSHIPS configuration, which depicts the relationship of the confirmed partner in the result list. Based on this configuration, the result list on the ACCOUNT IDENTIFICATION screen shows related partners.



Figure 9.22 Relationship within Account Identification

After the account is confirmed, you see the list of the accounts with the partner functions (Figure 9.23) in the CONFIRMED PARTNERS section below the result list in the ACCOUNT IDENTIFICATION screen.

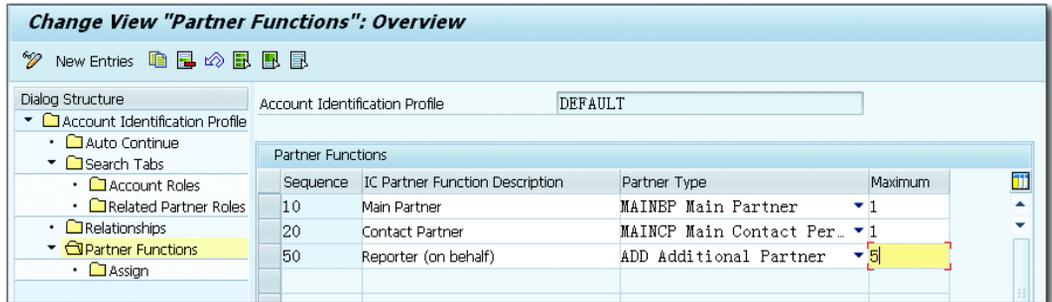


Figure 9.23 Partner Functions within Account Identification

9. The last step in the configuration is to assign the ACCOUNT IDENTIFICATION PROFILE to the FUNCTION PROFILE ID BPINDEPEND_MULTIPLE, as shown in Figure 9.24.

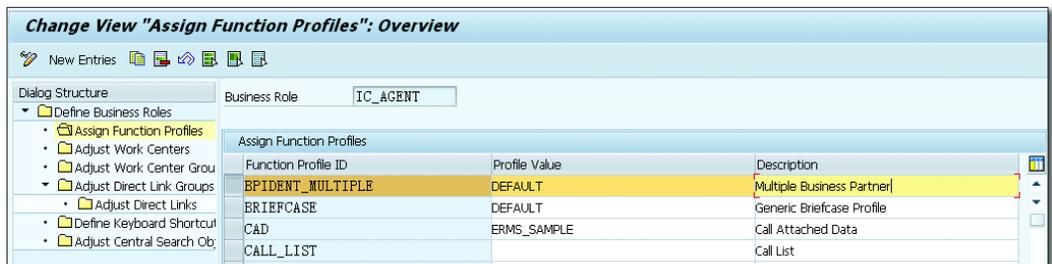


Figure 9.24 Assign Function Profile in the Business Role

9.4.2 Account Fact Sheets

The account fact sheet provides an overview of customers as well as a condensed view of the data based on your specific business needs. Account fact sheets provide key information that customer service representatives should know before interacting with the customer.

The information on the account fact sheet is listed as a part of the assignment block. This means every view on the fact sheet shows that the assignment block

and fact sheet can be launched from the account overview screen, as shown in [Figure 9.25](#). The MORE button on the account overview for the fact sheet is available with the UI PFCG role SAP_CRM_UIU_SLS_PROFESSIONAL. You can copy this UI PFCG role and assign it to your business role.

The information on each fact sheet view can be pulled from different systems or the same system. It can be pulled from SAP BusinessObjects BI, SAP ERP, SAP CRM, or SAP Supply Chain Management (SAP SCM). These can be in the form of master data or transactional data.

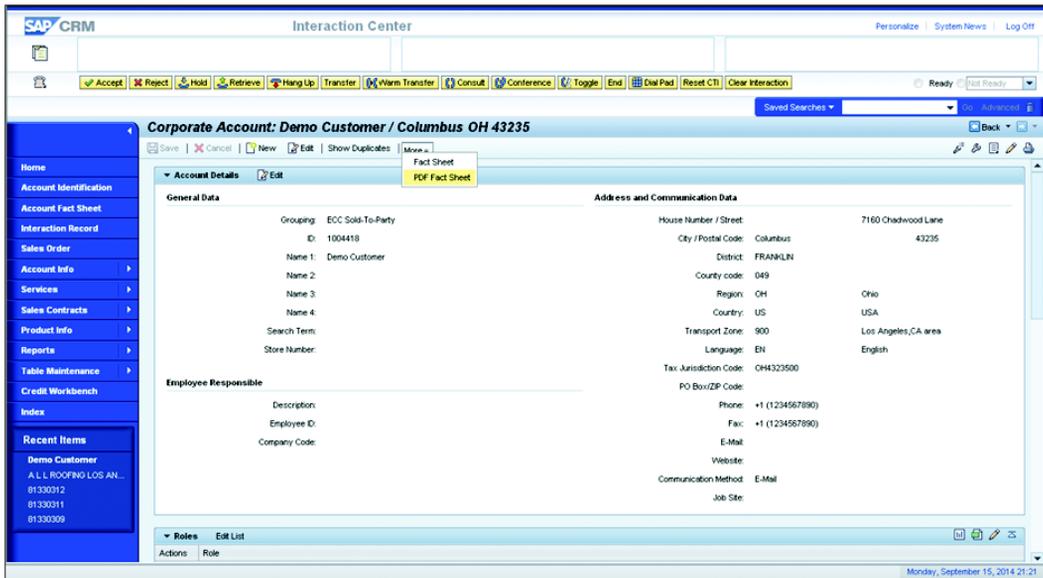


Figure 9.25 Account Overview with Fact Sheet Option

We'll now discuss the steps involved in configuring account fact sheets; you can change or copy the configuration based on your specific requirements. For our purposes, we'll use a standard fact sheet example BP_ACCOUNT_FS. Follow these steps to configure the fact sheet:

1. Review the views or create a new view based on your requirements to pull the data from the other systems. [Figure 9.26](#) shows the different views for the BP_FACTSHEET component that can be accessed via Transaction: BAP_WD_CMPWB. You can configure the fields on each of views that you want to see on the fact sheet.

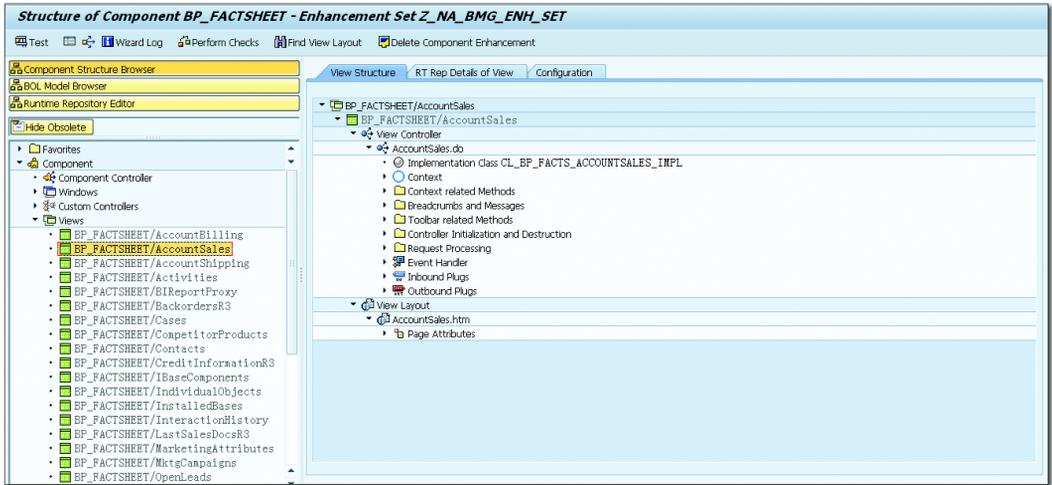


Figure 9.26 Maintaining Fact Sheet Component Views

2. Add the entry of that view if it doesn't exist in the configuration path, CUSTOMER RELATIONSHIP MANAGEMENT • UI FRAMEWORK • UI FRAMEWORK DEFINITION • FACT SHEET • MAINTAIN FACT SHEET. You can create the new FACT SHEET ID and assign the views to the customer FACT SHEET ID. Figure 9.27 shows the view examples from BP_FACTSHEET.

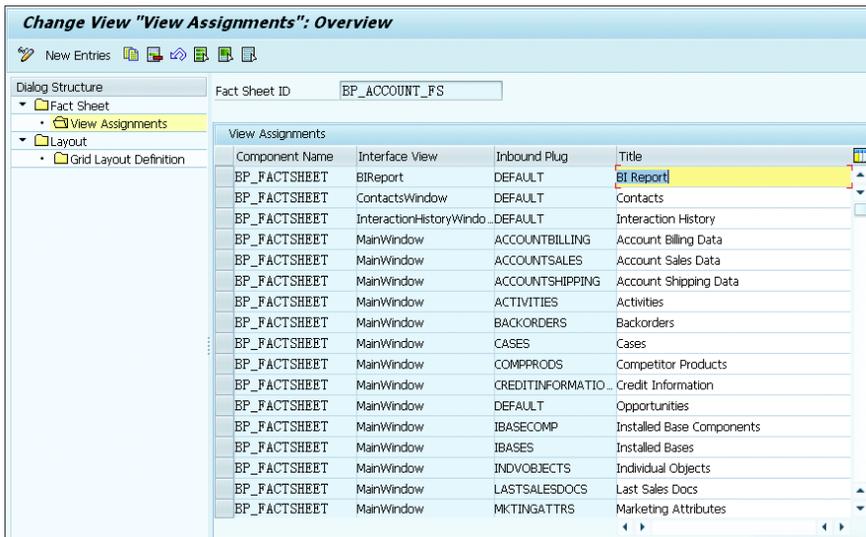


Figure 9.27 Maintaining the Fact Sheet

- Configure the fact sheet component BSP_DLC_FS by going to Transaction BSP_WD_CMPWB and selecting the view BSP_DLC_FS/FACTSHEET. [Figure 9.28](#) shows the fact sheet configuration where you can choose your custom fact sheet or select the existing fact sheet, for example, ACCOUNT FACT SHEET BP_ACCOUNT_FS, and create the new configuration with your business role configuration key (ROLE CONFIG. KEY).

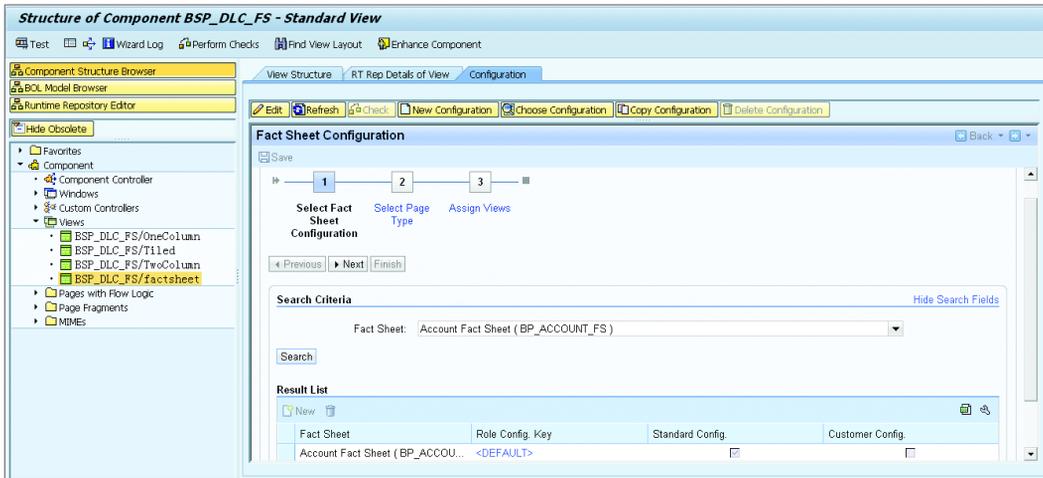


Figure 9.28 Fact Sheet Configuration

- Select the fact sheet and click the NEXT button to select the page type. After you've selected the page type, click NEXT again to assign the existing views to the fact sheet.
- [Figure 9.29](#) shows the AVAILABLE FACT SHEET VIEWS and ASSIGNED FACT SHEET VIEWS lists. Within the ASSIGNED FACT SHEET VIEWS, you can access the configuration to add or remove the view fields based on your specific requirements.

In this section, we discussed the account identification overview and account fact sheet concept. We walked through the configuration steps involved in creating both. In the next section, we'll look at interaction records.

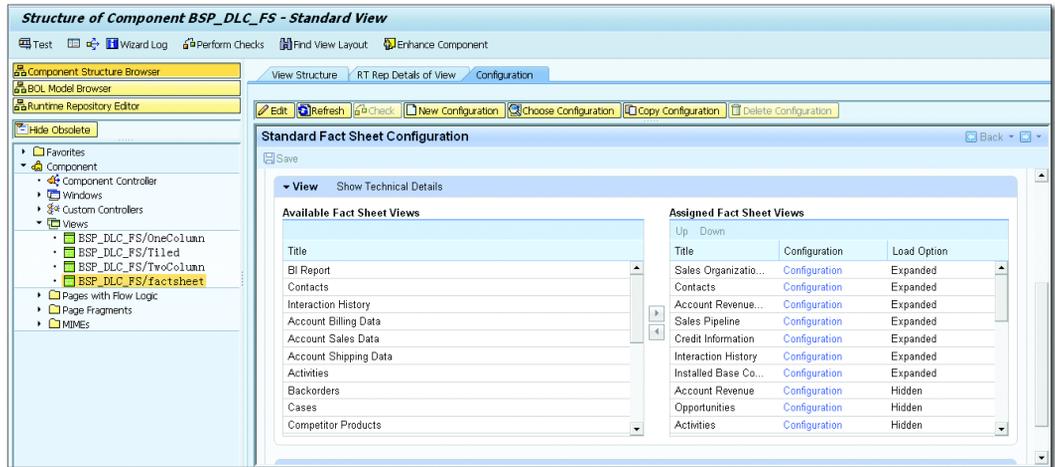


Figure 9.29 Fact Sheet Views

9.5 Interaction Records

An interaction record logs all of the interactions that have taken place between a customer service representative and customer while on a call. Any transaction placed during a call with the customer is logged into the interaction record under the activity clipboard. This becomes a basis to fetch the report based on the call received. In addition, you can get the call time report from other reports, but the interaction record gives you more specific details related to the call with the customer.

Interaction records are a central navigation point in the IC, and SAP highly recommends avoiding switching off this functionality because it's core to IC capabilities. After the call is completed and the customer service representative ends the call, an interaction record is saved with all the necessary information that has been executed during the call.

Figure 9.30 shows the INTERACTION RECORD screen with some details such as the ACTIVITY CLIPBOARD with the customer and transaction attached to it executed during the call with the customer. Some of the last interactions can be viewed from the INTERACTION RECORD screen as well.

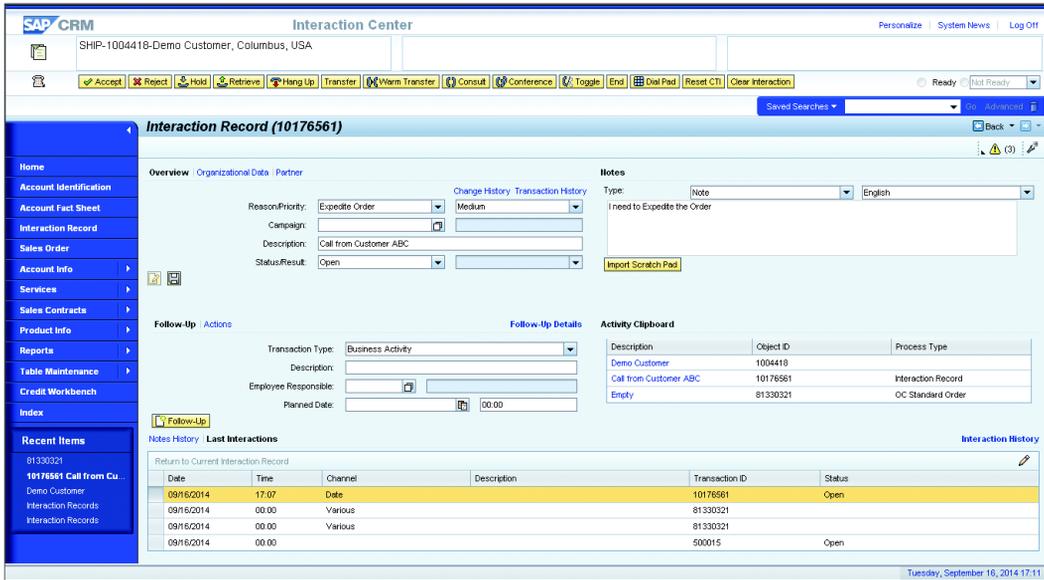


Figure 9.30 Interaction Record

Note

SAP has provided BAdI CRM_IC_IARECORD that can be used to suppress the creation of the interaction record. See SAP Note 828402 BAdI of Interaction Record, for more details.

9.6 Agent Inbox

The agent inbox helps the customer service representative work on incoming items, such as incoming calls, emails, faxes, and so on, and respond to the customer to solve any issues and answer any queries.

From the agent inbox, customer service representatives can view all of the business transactions and work items assigned to their respective group. This helps them pull these work items on their name and resolve the issues in a timely manner. The agent inbox can also be used for IC Marketing functions, for example, running planned activities created from the call list, contacting leads to convert them to opportunities, and later triggering some sales out of the leads. [Figure 9.31](#) shows the agent INBOX screen with various selection criteria and the **RESULT**

LIST. The business role is IC_AGENT where the inbox is readily available. You can copy the IC_AGENT business role to suit your specific needs.

The SEARCH CRITERIA consists of MAIN CATEGORY, which includes the transactions that you want to search; STATUS, TIME PERIOD, OBJECT ID, ASSIGNED TO, DESCRIPTION, DATE TYPE, PRIORITY, ACCOUNT, and FROM/TO date.

The screenshot displays the SAP CRM Interaction Center Agent Inbox. The search criteria section includes the following fields:

- Main Category: [Dropdown]
- Status: Open
- Time Period: [Dropdown]
- Object ID: [Text]
- Sort by: Priority (ID)
- Assigned To: [Dropdown]
- Description: [Text]
- Date Type: Creation Date
- Then Sort by: Main Category (ID)
- Priority: [Dropdown]
- Account: [Text]
- From/To: [Text]

The result list shows 7 items found. The table below represents the data shown in the screenshot:

Node	Status (D...)	Priority (...)	Overdue	Main Category (D...)	Object (ID)	Description	Employee Respon...	Created On/At
▶	Open		⬢	Problem	810000001		Chandrakant Agar...	07/27/2014 13:34:04
▶	Open		⬢	Lead	500013		Chandrakant Agar...	06/07/2014 10:29:33
▶	Open		⬢	Lead	500001		Chandrakant Agar...	05/22/2014 22:30:06
▶	Open		⬢	Service Request	8100003339		Chandrakant Agar...	07/26/2014 15:54:58
▶	Open	Very high	⬢	Service Request	8100003338		Chandrakant Agar...	07/24/2014 14:28:39
▶	Open	Very high	⬢	Lead	500012		Chandrakant Agar...	06/07/2014 10:28:55
▶	Open	High	⬢	Lead	500011		Chandrakant Agar...	06/07/2014 10:23:09

Figure 9.31 Agent Inbox

The search RESULT LIST includes the NODE, which shows the link of a specific transaction to the different transactions in the tree structure; STATUS; PRIORITY; and Overdue, which shows the status of the item being red, yellow, or green based on whether the work item has missed an SLA, object ID, description, employee responsible, and so on.

9.6.1 Business Functions

The following are some functions that customer service can perform from the agent inbox:

▶ Emails, faxes, and scanned letters

Organizations receive complaints, orders, or any other service request via

emails, faxes, or scanned letters. These get stored in SAP CRM as a transaction, which is assigned to the customer service representative's group. This can be done through the routing rules based on organization-specific needs. Customer service representatives can pull these emails, faxes, and scanned letters in their agent inbox and work on those items to resolve them within the SLA specified on each of the transactions.

► **Work items**

You can process all the work items (i.e., SAP and any of your custom work items in the agent inbox). Some examples of customer work items can be the creation of the backoffice work items and tasks for issues such as an incompletion log, under/over-DELIVERY, back order exceptions, or any kind of other exception that customer service representatives should work on to resolve customer issues.

► **Business transactions**

You can pull any of the business transactions in the agent inbox, for example, sales orders, sales contracts, service orders, confirmations, and so on.

► **Advanced warning for due date**

Customer service representatives can view their work items that are nearing their SLAs. These items are marked with a yellow STATUS Indicator in the OVERDUE column. This is termed as advanced warning for due dates.

9.6.2 Configuring the Agent Inbox

For the purposes of example, let's consider a business scenario where we create a work item that shows up on the agent inbox screen to resolve a customer issue by communicating with the customer.

Let's say that a customer sends an email with information to place an order, but he forgets to mention in the email whether the product ordered is a customer pick up or should be delivered by an organization. This is controlled via the shipping condition on the sales order. In this case, the customer service representative places an order and puts the order on delivery block. This creates the work item in the form of a task where customer service should contact the customer and confirm the shipping conditions on the sales order.

This process plays out as follows:

1. An order is created with all information from the email received by the customer service representative except the shipping condition piece, so the order is placed on the delivery block (see [Figure 9.32](#)).

The screenshot displays a 'Sales Order Details' form with the following sections:

- General Data:**
 - Type: Standard Order
 - Order ID: 81330334
 - Sold-To Party: Demo Customer
 - Sold-To Party Address: 7160 Chadwood Lane / Columbus OH 43235
 - Contact:
 - Employee Responsible: Chandrakant Agarwal
 - External Reference: Delivery Block
 - Territory:
 - Delivery Block: No Items Blocked for Delivery
 - Billing Block: Fully Blocked
 - Rejection Reason:
- Processing Data:**
 - Status: Order Submitted
 - Rejection Status: Nothing Rejected
 - Credit Status: All Items Have a Credit Block
 - Output Blocked:
- Dates:**
 - Posting Date (Free): 09/20/2014
 - Reference Date: 09/20/2014
 - Request. Deliv. Date: 09/30/2014
- Value:**
 - Net Value: USD
 - Tax Amount: 0.00 USD
 - Gross Value: 0.00 USD
- Notes:** (Empty text area)
- Transaction History:**

Transaction	Transaction Type	Date
Delivery Block	Task	09/20/2014

Figure 9.32 Order Created with Delivery Block

2. As soon as the order is placed on the delivery block, the task is created and routed to the service skill group. This functionality can be achieved by configuring the actions to trigger the task based on the scheduled condition in status for delivery block. The routing rule can be configured with the rule modeler functionality covered in [Chapter 4](#). You can implement routing rules based on your specific needs and the customer master attribute.
3. [Figure 9.33](#) shows the DELIVERY BLOCK TASK created and assigned to the sales order. The task is assigned to the skill group; the skill group has multiple employees assigned to it as well. Any of the employees can yank the task on their name and call the customer to get the specific information on the shipping condition.

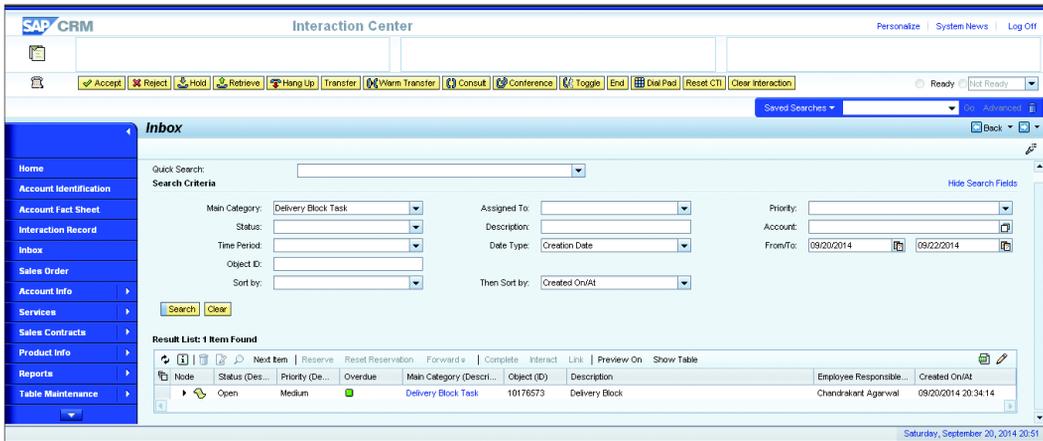


Figure 9.33 Agent Inbox Showing the Delivery Block Task

After the employee receives the information, he can update the order and close the task. You can also assign a SLA to the task so that you can monitor the high-priority issues more closely. The OVERDUE column helps you identify those tasks that are nearing their SLA.

9.7 Business Transaction Routing

Business transaction routing helps an organization assign the appropriate skill group to work on an SAP CRM business transactions. This can be done manually or automatically. When business transactions are created, mostly service transactions, these transactions can be escalated to different groups based on the category listed. The category is based on the customer calls received; for example, if a customer calls an organization saying that the product purchased isn't up to the standard quality, this would be pushed to a service skills group to escalate this issue to the quality control department. In this case, you can either manually escalate the issue to the quality control department or configure the routing rules to escalate the issue to the quality control department based on the transaction category. In either case, the quality control team then views the service transaction in its inbox and takes the necessary action.

In SAP CRM, the *rule modeler* is used to execute the automatic routing and consists of various contexts. A context is a group of related attributes, operators, and

actions that support a particular scenario or process, such as EMAIL RESPONSE MANAGEMENT SYSTEM, BOUNCE MANAGEMENT, ORDER ROUTING, INTENT DRIVEN INTERACTION (IC WEBCLIENT), or LEAD DISTRIBUTION, as shown in [Figure 9.34](#).

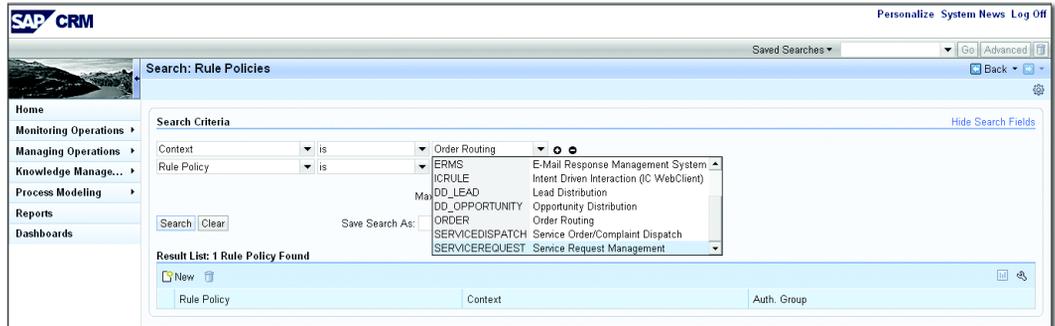


Figure 9.34 Rule Policies Context

Each context has unique and specific attributes and actions, for example, for escalating service tickets, you need ORDER ROUTING context. The ORDER ROUTING context has the following attributes in standard SAP CRM:

- ▶ TRANSACTION TYPE
- ▶ CUSTOMER
- ▶ PRODUCT
- ▶ CATEGORY
- ▶ STATUS
- ▶ PRIORITY

As shown in [Figure 9.35](#), order routing also allows the following actions within the system:

- ▶ INVOKE POLICY

You can use this action to branch from one policy to another policy based on rules. Separating rules where the requirement results in multiple rules causes huge performance issues. Therefore, it makes sense to separate the rules and make use of the invoke policy based on your specific needs.
- ▶ ROUTING

This changes the RESPONSIBLE GROUP of the transaction to the organizational unit defined in the rule and removes the other current EMPLOYEE RESPONSIBLE.

► STOP FURTHER RULE PROCESSING

This stops further rule processing within a policy. You typically use this action in nested rules to stop rule evaluation at a desired outcome. This avoids superfluous evaluation of the rest of the rules in the policy.

The screenshot shows the 'Change View "Actions": Overview' window. On the left is a 'Dialog Structure' tree with 'Contexts' expanded to 'ORDER'. The main area displays a table of actions:

Action ID	Description	Show Act.	Action Service ID	Conflict
10_BPP_SEND_PARA	Send business process push parameter	<input checked="" type="checkbox"/>	10_BPP_SEND_PARA	0 Any Nu
10_BPP_SET_PARA	Set business process push parameter	<input checked="" type="checkbox"/>	10_BPP_SET_PARA	0 Any Nu
APPLY_POLICY	Invoke Policy	<input checked="" type="checkbox"/>	AH_APPLY_POLICY	0 Any Nu
ROUTE	Routing	<input checked="" type="checkbox"/>	FG_ICWC_ORDER	0 Any Nu
STOP_RULE_EVAL	Stop Further Rule Processing	<input checked="" type="checkbox"/>	AH_STOP_RULE_EVL	0 Any Nu

Figure 9.35 Actions within the Order Routing Context

9.8 Call List Management

Call list management allows companies to organize new or existing customer and make calls regarding any kind of promotion that the company is running. They can execute these calls from the IC application. In most cases, managers create the call list and assign the call list with the relevant agents. You can also assign a call script to the call list so that agent knows exactly what to communicate to the customer.

Marketing professionals might want to make sure that existing customers are satisfied with the services provided by the company or execute some kind of campaigns for a target group of customers. In this scenario, call lists and planned activities play an important role because they help call the list of the customers based on the customer calling time. Call list management can involve activities such as telesales, telemarketing, service follow-ups, and more.

SAP CRM enables you to generate call lists and create planned activities (outgoing call), as shown in [Figure 9.36](#).

Generate planned call list from BP call times

General

Transaction Type: PCAL Planned Telephone Call (Outgoing)

Check for Existing Calls

Reason: A001 Regular Activity

Processing Horizon from: 09/23/2014 00:00:00 to 09/25/2014 23:59:59 EST

Business Partner

Business Routing Scenario: []

Target Group: []

Business Partner: 1004418 to []

Use Contact ...

Account and Contact Filter

Apply Marketing Permissions

Scheduling

Standard, based on ...

Business Hours: A Calling Hours

Create One Activity for each Call Time

Create Activity also without Call Time

Advanced, Using the Rule ...

Figure 9.36 Generating a Planned Call List from the Business Partner Call Times

For the purposes of example, let's say an organization has a requirement to generate a call list for a specific set of customers as a part of a regular activity and service follow-up. Most companies hire employees to execute this kind of task and run telemarketing activities to create new customers and service existing customers. In these scenarios, creating call lists and planned activities comes in handy for generating the call list that can be maintained by the marketing manager and agents involved.

The planned activities and the call list refer to the business partner calling hours, and you have the option of creating one activity for each call time. This means that one activity is created for the calling hours maintained for the business partner; for example, calling hours for Monday are 10:00 am to 11:00 am and for Tuesday are 11:00 am to 12:00 am. Therefore, two planned activities will be created, one for each set of calling hours. You can create the call list and planned activities via the menu path, INTERACTION CENTER • SUPPORTING PROCESSES • OUTBOUND CALLING • CRMD_CALL_LIST - GENERATE BUSINESS TRANSACTIONS AND CALL LISTS.

Within Transaction CRMD_CALL_LIST, it's important that you keep the **GENERATE CALL LIST** checkbox activated. You can assign the responsible user or organizational unit to assign the call list that is generated.

Figure 9.37 shows the **CALL LIST MAINTENANCE: CHANGE** screen where, along with deleting, viewing, copying, splitting, and merging the call list, you can also search for the call list, assign the call list to the agent, synchronize call lists with the CTI tool that requires automated dialing, and view the call list statistics.

You can maintain the call list via the menu path, **INTERACTION CENTER • SUPPORTING PROCESSES • OUTBOUND CALLING • CRMD_TM_CLDIST – CALL LIST MAINTENANCE**.

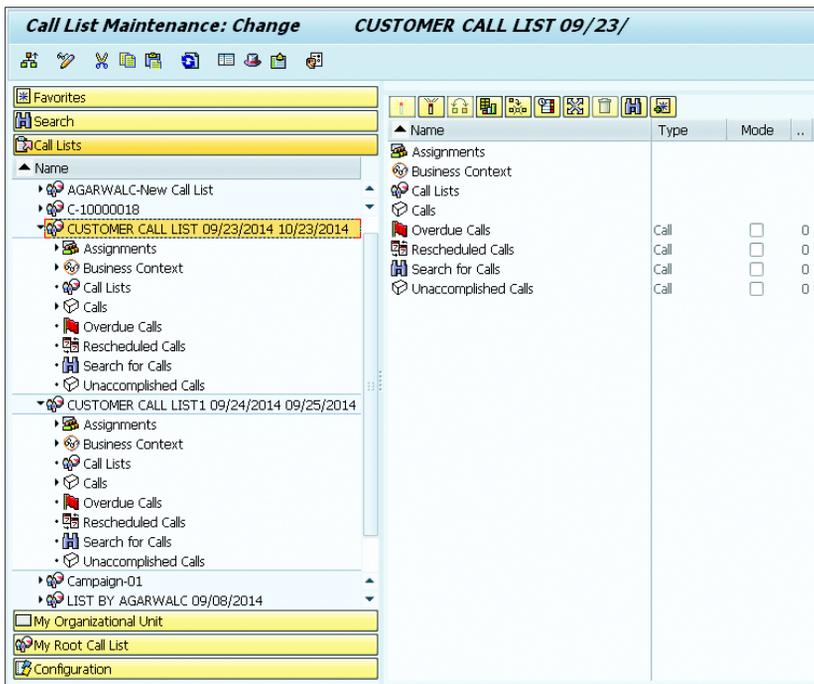


Figure 9.37 Call List Maintenance

Call List Maintenance

You can't access the **CALL LIST MAINTENANCE** screen from the SAP CRM WebClient UI because this function is only available in the SAP CRM GUI. In addition, this transaction isn't marked for SAP GUI for HTML, so you can't launch this transaction on SAP CRM WebClient UI either.

After the call list is created and maintained, you can view the call list and the customer calls that need to be executed in the WebClient UI screen, that is, the CALL LISTS work center, as shown in [Figure 9.38](#).

The call list can be executed as a part of MANUAL dialing or AUTOMATED dialing as designated in the MODE column. Manual dialing is simple: the call list generated is assigned to the agent, and the agent executes each call within the call list manually. For automated dialing, the call list is transferred to the CTI tool, which sends the call to the agent as an incoming call if the business partner answers the call.

Warning	Name	Mode	Progress %
	CUSTOMER CALL LIST 09/23/2014 10/23/2014	Manual	0
	CUSTOMER CALL LIST1 09/24/2014 09/25/2014	Manual	0

Company	Name	Call After	Call Before
Demo Customer		09/23 08:00	09/23 16:00
Demo Customer		09/24 08:00	09/24 16:00

Figure 9.38 Call List on the WebClient UI Screen

A call list is a helpful and powerful tool that allows an agent to connect with customers and reduce the service cycle time. We've covered some basic aspects of call list creation, maintenance, and execution. In the next section, we'll look at how scripts can be generated for customer calls.

9.9 Interactive Scripting

The Interactive Script Editor enables you to create the script with specific questions directed to the customer. This is very helpful in cases where an organization is running some kind of campaign or a promotion and requires you to provide the product information to the customer.

The Interactive Script Editor is an extension of the call list functionality, which means the interactive script can be assigned to a call list that the agent works on. The Interactive Script Editor is available under the business role IC_MANAGER and can be created by a marketing promotion manager. The script created is then assigned to the agent to run the promotion.

The Interactive Script Editor allows you to create questions, answers, and actions. It also consists of a repository of existing and searchable scripts. Interactive

scripts are useful for guiding a newly hired agent through the call. It also improves the communication between the agent and customer.

9.10 Knowledge Search

The knowledge search function within SAP CRM allows an agent to search for solutions for recurring customer problems. Furthermore, knowledge search is comprised of knowledge articles that provide information such as user manuals, storing transaction templates, how-to documents, troubleshooting articles, and so on. It's one place where all information regarding any problem resides.

While organizations often do have solutions to customer problems, the information is scattered and not collated at one place. Knowledge search provides a way to store the answers to key problems in order to react quickly to customers needs. One example of knowledge search is the SAP Support Portal; before logging any kind of incident to the SAP help desk, the SAP Support Portal takes you to the Prepare Solution Search and Find Solution steps. This means you can find SAP Notes in the SAP Support Portal solution database that can resolve your issue before logging the incident.

A knowledge article resides in a knowledge base. The SAP default knowledge base is Solution Database (SDB). If you want to create your own knowledge base, you can do so by implementing BAdI: Knowledge Bases. The knowledge article search is carried out by the TREX search engine.

9.11 Email Response Management System

The *Email Response Management System (ERMS)* allows an organization to manage incoming email effectively. Sometimes companies have difficulty managing their incoming mail due to the sheer volume. This results in delayed responses to customer issues.

To avoid any kind of customer issues, it's imperative to properly manage incoming emails and route them to the corresponding service skill group to work on to reduce the time gap between receiving emails and executing the actions. This is an automated way of managing emails with minimal manual intervention. ERMS also helps managers view the complete email lifecycle and monitor those emails.

This functionality adds value to an organization because it saves both time and money. In some instances, an organization may want to auto-respond to certain issues without creating any business object in the system. ERMS provides some of the automated features that help organizations respond to customers on certain issues without agent intervention. Based on your business needs, you can also auto-prepare emails before responding to the customer and send it for approval to the agent. The three automated email response features are email acknowledgement, auto respond, and auto prepare. With email acknowledgement, you typically create the transaction with the incoming email like a service ticket, whereas with auto respond, you don't need to create a transaction for the incoming email and respond to the customer with the issue resolution.

9.11.1 Business Functions

ERMS provides a number of functions. Some of these features belong to the IC_MANAGER business role, whereas some falls under the IC_AGENT business role:

▶ Rule policies

Rule policy is used to achieve certain business functions that are carried out by an organization on a frequent basis. It invokes specific actions automatically as soon as predefined conditions are met. For example, with certain email addresses, you can configure the rule policy to create a specific transaction. ERMS services trigger the rule policy assigned in the configuration.

▶ ERMS Simulator

ERMS Simulator helps the IC manager simulate the rules created within the rule policy. This way the IC Manager can see the result of the rules created.

▶ Email Workbench

The Email Workbench provides the capability to assign, route, forward, edit rules for, and set the email to complete. These are IC manager functions that give a manager an overview of the email processing in the IC.

▶ Email threading

Email threading allows you to link an email to the service transaction. This means that any email coming from the customer or agent replies are linked into one tree structure with the service transaction. Tracking text is used to link the emails to the transaction and mail forms are used to create a tracking text.

► Auto-transaction creation

Any email received by a customer can create a transaction in the SAP CRM system if the rule policies are set up appropriately.

9.11.2 ERMS Setup

Following are some of the basic steps required to set up ERMS in your system:

1. Activate the workflow customizing, which is carried out in SAP NetWeaver under APPLICATION SERVER • BUSINESS MANAGEMENT • SAP BUSINESS WORKFLOW • MAINTAIN STANDARD SETTINGS (see [Figure 9.39](#)).

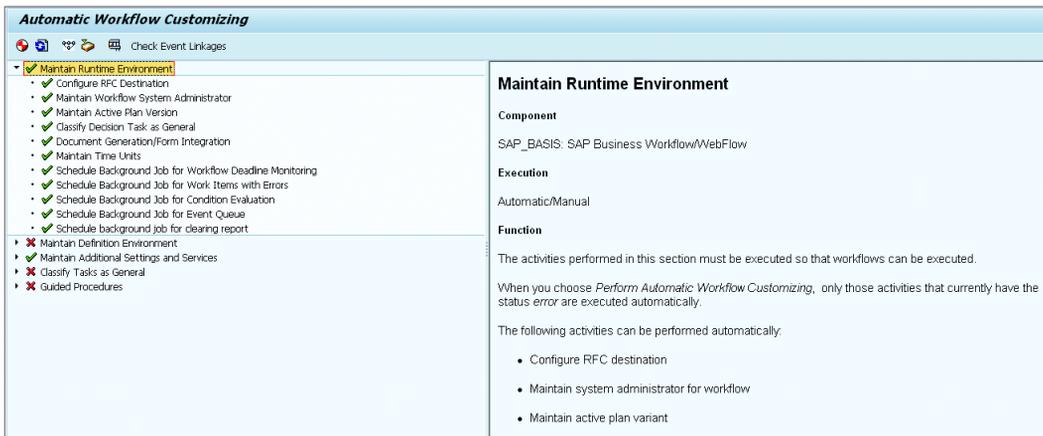


Figure 9.39 Maintaining Workflow Standard Settings

2. Create the receiving email address that the customer is going to use to send an email to the organization. This is maintained in the SAP menu; choose INTERACTION CENTER • E-MAIL RESPONSE MANAGEMENT SYSTEM • SETTINGS • DEFINE RECEIVING E-MAIL ADDRESSES/FAX NUMBERS (see [Figure 9.40](#)). Enter the DESCRIPTION.

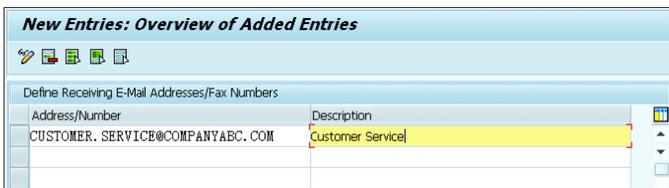


Figure 9.40 Defining the Receiving Email Address

- To trigger the ERMS workflow, assign the receiving email address to the ERMS workflow. In the SAP menu, choose INTERACTION CENTER • E-MAIL RESPONSE MANAGEMENT SYSTEM • SETTINGS • MAINTAIN RECIPIENT DISTRIBUTION. The NEW RECIPIENT is assigned based on the SAP OBJECT INSTANCE – ERMS SUPPORT 2 (see [Figure 9.41](#) and [Figure 9.42](#)).

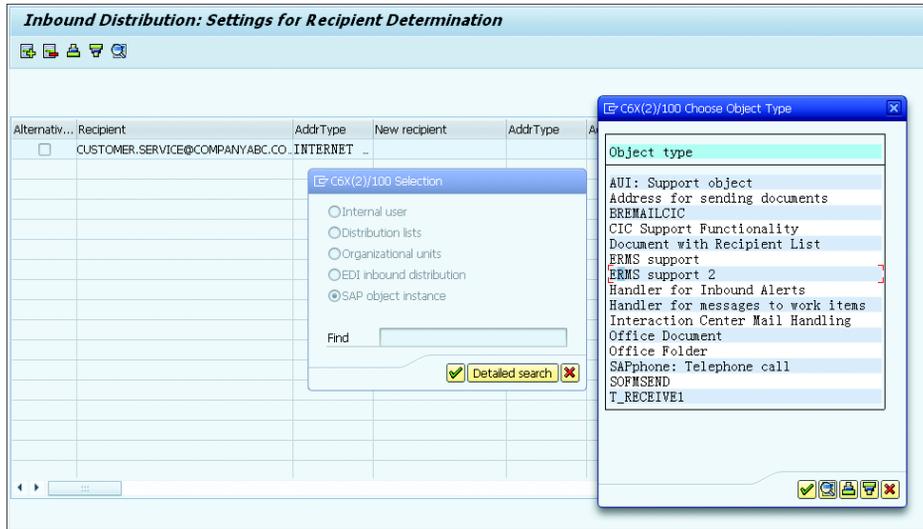


Figure 9.41 Inbound Distribution: Settings for Recipient Distribution (1)

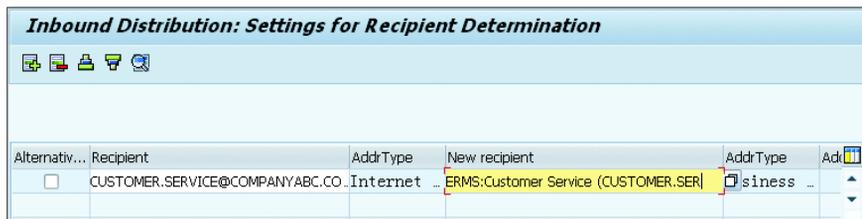


Figure 9.42 Inbound Distribution: Settings for Recipient Distribution (2)

- Next, assign agents to the general ERMS task to allow the email to be routed to the specific skill group. You can see the task when accessing the ASSIGN AGENTS hyperlink shown in [Figure 9.43](#). Then activate the workflow event by selecting ACTIVATE EVENT LINKING. To activate the event link, access INTERACTION CENTER • E-MAIL RESPONSE MANAGEMENT SYSTEM • SETTINGS • ASSIGN AGENT FOR E-MAIL HANDLING (see [Figure 9.44](#)).

Task Customizing Overview			
Application Component Abbr...	Application Component Description	Agent Assignment	Event Linkage
• 66100001	ERMS	Assign Agents	Activate event linking

Figure 9.43 Activate Event Linking

Event Linkage: Triggering events

Tasks/Events	Task/Event Description	Activate/dea...	Details
▼ TG 66100001	ERMS		
▼ WS 00200001	ERMS 1		
• ») ERMSSUPRT2MAILRECEIVED	ERMSSUPRT2 MailReceived	Activated	

C6X(2)/100 Properties of Event Linkage

Object type	ERMSSUPRT2
Event	MAILRECEIVED
Receiver Type	WS00200001
Properties	
Linkage status	No errors
<input checked="" type="checkbox"/> Event linkage activated	
<input type="checkbox"/> Enable usage of event queue	
Behavior if linkage with errors	
System Defaults	Deactivation of linkage
Error feedback	0 System defaults

Figure 9.44 Event Linkage: Triggering Events

5. Object type ERMSSUPRT2 is executed when the customer sends an email to the email ID assigned to the new recipient ERMSSUPRT2. This initiates the ERMS object type, as shown in [Figure 9.45](#). The methods within this object type are initiated, and after the processing of the object type is completed, the event MailReceived triggers the workflow 200001 ERMS1, which triggers the service manager profile assigned to the receiving email ID.

[Figure 9.46](#) shows the assignment of the OBJECT TYPE ERMSUPRT2 to the WORKFLOW TEMPLATE 200001 ERMS1.

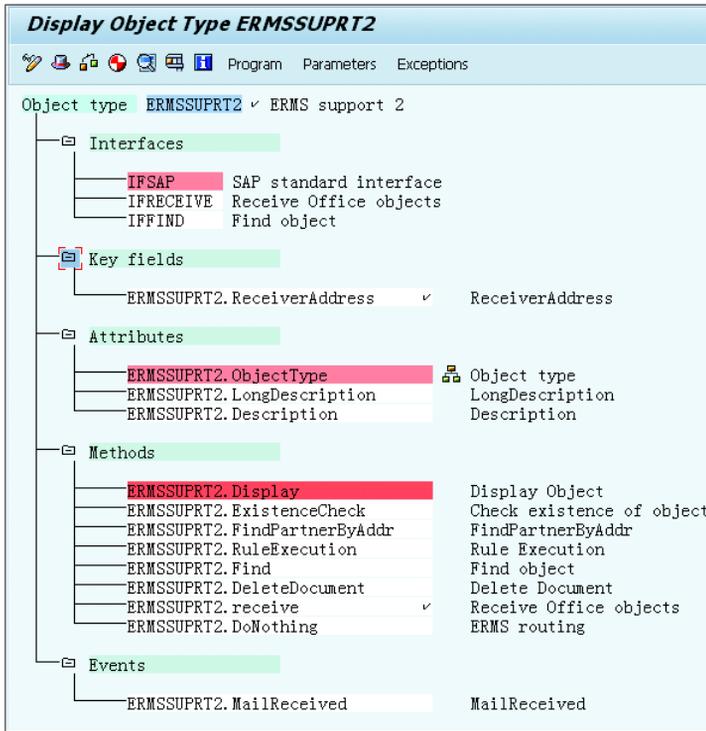


Figure 9.45 Object Type: ERMSSUPRT2 ERMS Support 2

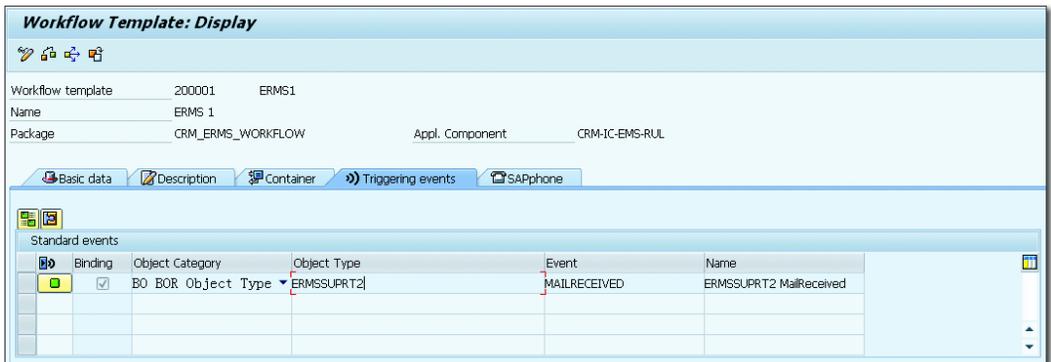


Figure 9.46 Object Type ERMSSUPRT2 Assigned to the Workflow 200001 ERMS 1

6. Navigate via the menu path, CUSTOMER RELATIONSHIP MANAGEMENT • E-MAIL RESPONSE MANAGEMENT SYSTEM • SERVICE MANAGER • DEFINE SERVICE MANAGER

PROFILES. In this step, you configure the ERMS service manager profile (SRV MGR PROFILE) and assign the profile to the RECEIVING E-MAIL ID. The DEFAULT rule is assigned to the INVOCORDER 50 under DIRECTLY CALLED SERVICES (see [Figure 9.47](#) and [Figure 9.48](#)).

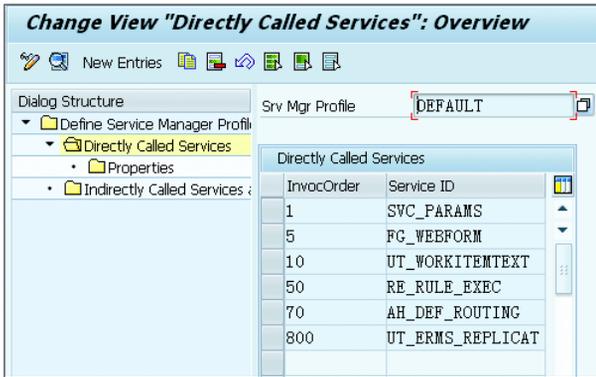


Figure 9.47 Service Manager ID

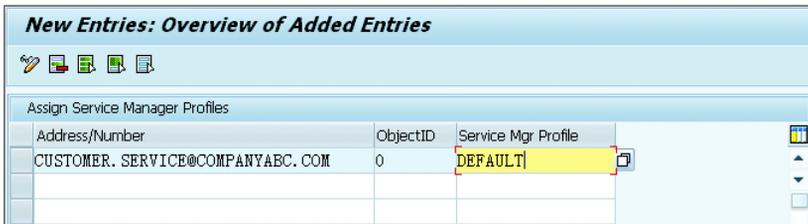


Figure 9.48 Assigning the Email ID to the Service Manager Profile

After these steps are configured, you can create the ERMS rule policies and rules under PROCESS MODELING • RULE POLICIES by accessing the IC_MANAGER role.

ERMS Configuration

For more details about ERMS and its configuration, refer to SAP Note 940882 ERMS FAQ Note.

In this section, we gave an overview of ERMS features and setup. ERMS allows an organization to manage incoming emails and route them to a specific group that can reply back to the customer in a timely manner.

9.12 Summary

In this chapter, we discussed the integrations, features, and functions available in the IC. We covered the CTI, multichannel integration, account identification and fact sheets, interaction record, agent inbox, business transaction routing, call list management, interactive scripting, knowledge articles, and ERMS functionality. In addition to these, different business functions such as IC Sales, IC Marketing, and IC Service were also discussed. In the next chapter, we'll look at another SAP CRM application: the Web Channel.

Web Channel applications cover web-based sales and services transactions and targeted marketing. In this chapter, we'll discuss Web Channel applications functionality and configuration settings.

10 Web Channel

Web Channel applications enable the use of web technologies to conduct sales, services, and interactions between an organization and customer. SAP E-Commerce turns the web into a profitable sales and interaction channel. SAP CRM has provided a complete E-Commerce solution that supports both business-to-business (B2B) and business-to-customer (B2C) business scenarios. SAP E-Commerce helps organizations carry out their business with minimal manual intervention, allowing customers to place orders and initiate services from the Web Channel. This results in fewer order errors and fewer calls to the customer call center. With SAP E-Commerce capabilities, an organization can reduce its overall sales transaction costs and maximize customer satisfaction by providing information they need on the web.

In this chapter, we'll look at the E-Commerce architecture as well as the general Web Channel functions. From there, we'll move on to the B2B and B2C Web Channel capabilities, before diving into the product catalog, Extended Configuration Management (XCM) settings, and Web Channel user management settings. Finally, we'll look at Web Channel Experience Management (WCEM).

10.1 E-Commerce Architecture

SAP CRM provides a web tool to enable customers to conduct order placements and agents to carry out customer service with the help of the Internet. This application allows customers to track their orders and enter service requests in real time. With Internet sales and service being one of the important mediums in

today's market, SAP has leveraged its application to include web applications as a core competency within the SAP CRM space.

To deploy SAP E-Commerce, you need a Java stack, which is installed as a part of SAP NetWeaver Application Server (AS) Java and consists of the SAP CRM Java components. When you implement SAP CRM, you already have SAP NetWeaver AS ABAP, which includes the Internet Pricing and Configurator (IPC) engine for calculating pricing and other SAP CRM components.

SAP CRM is connected to the SAP ERP backend system to realize the shipment and invoicing for the orders that are placed from the Web Channel, and SAP Advanced Planning and Optimization (SAP APO) is used to carry out an availability check on the web orders. [Figure 10.1](#) shows details around the Java 2 Enterprise Edition Application Server (J2EE AS), which is a part of the Java stack.

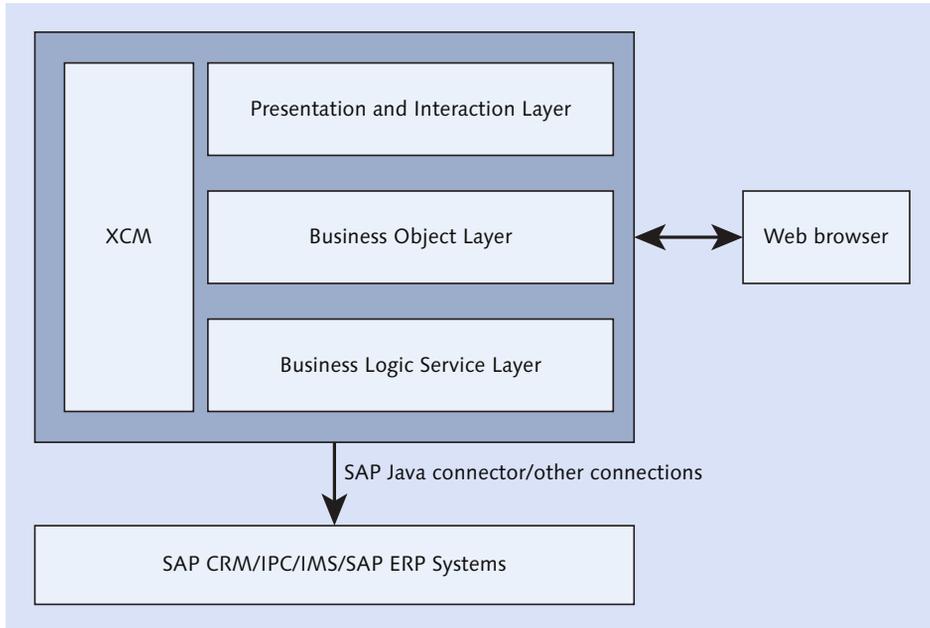


Figure 10.1 J2EE Application Server

As shown in [Figure 10.1](#), the following layers are part of the J2EE AS:

▶ **Presentation and interaction layer**

The web user sends the request to the presentation and interaction layer triggering specific Java classes from the business object layer (BOL) based on the user-specific action.

▶ **Business object layer (BOL)**

The BOL layer consists of the Java classes that help communicate user actions to the SAP CRM backend. Java classes within BOL include the shopping basket and catalog, which provide the business functionality that can be customized based on your needs.

▶ **Business Logic Service layer (BLS)**

This BLS layer provides access to business functions placed in different Enterprise Information System (EIS) such as SAP CRM, SAP ERP, and so on. For every object in the BOL, a corresponding backend object is available as well. An interface within the BLS layer is used to connect to the backend you're using, which may be BasketCRM or BasketR3. The complete lifecycle of the object management is controlled by Backend Object Manager (BEM). Java Connector (JCo) is used to connect the BLS layer to the enterprise application system, that is, SAP CRM or SAP ERP. The object flow details are shown in [Figure 10.2](#).

▶ **Extended Configuration Management (XCM)**

XCM is used to configure the Web Channel after you've deployed the web components. XCM is used to configure the application based on your specific needs and to activate Shop Management and User Management, as well as configure the specific application configuration.

[Figure 10.2](#) shows a more detailed view of BOL and BLS with backend communication. It shows the logic flow of the basket backend within BLS connecting to the enterprise application system.

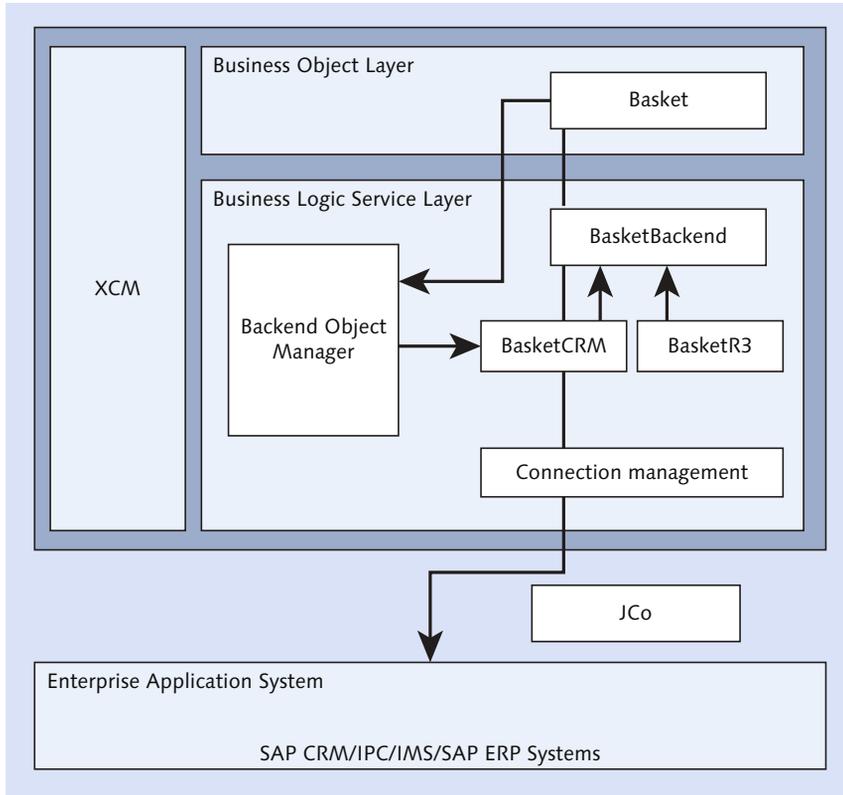


Figure 10.2 SAP CRM Web Channel Java Interaction Layer – Business Logic Service Layer

10.2 Business Functions

The Web Channel is a web-based marketing, sales, and services application that enables customers to access product information and place orders anytime, anywhere. SAP CRM provides a customer portal to access the web shop, E-Services, billing, and E-Analytics as a single point of entry.

Partner Channel Management

Partner Channel Management consists of a partner portal that helps partners collaborate with the end customer and provides partners with self-service capabilities, including key company information that helps businesses grow.

The Web Channel has a number of capabilities that allow companies to interact with customers and conduct web-based transactions:

▶ **E-Selling**

SAP CRM provides E-Selling capabilities to both B2B and B2C customers. E-Selling can overcome some of the key issues that an organization faces when deploying any e-selling tools. With E-Selling, an organization uses functionalities that provide information on the availability of products, tools, customer order statuses, and more.

▶ **E-Marketing**

E-Marketing capabilities allow an organization to set up its own web shop with product recommendations. This helps companies increase their sales by providing information on product recommendations, accessories, and cross-sell or up-sell.

▶ **E-Services**

E-Services allows customers to execute self-services for items they have bought. This reduces the overall service costs and results in minimal error. E-Services capabilities include account self-service registration, Knowledge Management (KM), product registration, Service Request Management, and Complaints and Returns Management.

▶ **E-Analytics**

E-Analytics helps an organization analyze its customers' buying behaviors and sales-related information.

In the sections that follow, we'll look at the three core SAP CRM functions that can be used in the Web Channel applications: Marketing area, Sales area, and Internet Customer Self-Service (ICSS).

10.2.1 Web Channel Marketing

Web Channel Marketing provides functionality that enables customers to apply campaigns or determine the campaigns on a sales order, carry out global product recommendations, and check for accessory products. It also helps organizations propose products to customers via cross-selling, down-selling, and up-selling. The following are some marketing functions within the Web Channel:

▶ **Campaign determination in the web shop**

Customers can enter campaigns manually in the web shop or determine the

campaign automatically on the sales order in the web shop. After the campaign is applied, the prices are adjusted accordingly, and the customer benefits from the campaign from that organization.

The B2C web shop has some limitations on the automatic campaign determination, but a customer can add the campaign manually to apply certain discounts to the products purchased.

► **Global product recommendations**

With this functionality, companies can recommend products to customers based on specific target groups. Target groups are assigned to the web shop during setup so a company can see which products were bought by specific customers. This way, you can promote the right products to the right customers.

► **Accessory products**

A company can create and maintain accessory products for core items that a customer may purchase. For example, if a customer is buying a camera, the customer may buy the camera bag separately. The camera bag is an accessory product to the camera. These can be maintained and shown to the customer on the web shop for purchase.

Such a process can allow a company to “bundle” certain products together and promote products that a customer otherwise may not have seen.

► **Cross-sell, up-sell, and down-sell**

Like accessory products, an organization can cross-sell, up-sell, and down-sell items that aren't available so that the customer has the option of buying similar products at lower costs.

For example, if a product ordered by the customer isn't available on the requested date, a typical cross-sell is to offer a similar available product of a different brand. A customer can opt for that product and place an order. Up-selling and down-selling options are also available where customers can check lower cost or higher value products of a similar kind.

10.2.2 Web Channel Sales

Web Channel Sales covers functions of creating quotations, contracts, and orders, as well as some of the key sales order functions such as product determination, batch characteristics in the sales transaction, free goods processing, and more. Web Channel Sales lets a customer browse through the product catalog on the web shop and carry out contracts and sales orders.

With the product catalog, customers can view product prices and availability before adding the product to their shopping cart. With certain web shop configurations, customers can view the complete document flow and the sales statuses (e.g., delivery) and invoice number from the web shop. We discuss product catalogs further in [Section 10.5](#).

The following are sales functions within the Web Channel:

► **Contracts**

Web Channel Sales provides the functionality to determine contracts from the web shop. If the proper web shop settings are activated for the contract determination, a contract can take place when placing an order. You can specify the contract attributes in the configuration that you want to display on the web shop, for example, product list, product details, and more.

► **Quotations and order processing**

Order processing within the web shop allows customers to order products online and provide companies with information on the sales statuses based on where the product is in the sales cycle. An organization can mention one transaction type on the web shop for the sales order and one transaction type for the quotation when setting up its web shop. This is a core feature of the web shop functionality that allows customer to get the pricing information on products when requested.

► **Batches**

Companies can enter batches on the sales order line item or select batches from the dropdown function on the shopping cart. Batches can be entered only on the shopping cart and aren't available on the product catalog. The batch determination occurs on the delivery document in SAP ERP, but SAP CRM provides the functionality to enter it on the web shop if needed. This is then used in the Available to Promise (ATP) check.

► **Product determination**

SAP CRM provides two important product determination functions on the Web Channel: product alternative ID and product substitution. The product alternative ID helps to identify SAP products when creating business transactions. This can be in the form of a customer product ID, vendor product ID, alternative ID (own attribute), and Global Trade Item Number (GTIN).

Within the product substitution functionality, the system can automatically replace one product with another within the order entry. If there are any seasonal

demands for a product where your organization requires a product to be substituted, then using this functionality will help overcome any product substitution obstacles.

► **Price determination**

Web Channel Sales also provides the ability to view product prices on the product catalog and when placing the order in the shopping basket. When creating the product catalog, you need to assign the required pricing procedure to view the pricing on the product catalog. There are two options to select the price on the catalog: price determination via IPC and reading the price from the index server (list price).

► **ATP check**

Web Channel provides the functionality to carry out the ATP check when placing an order on the web shop or when accessing the product catalog. There are two options to choose from: availability check via SAP APO or availability check via SAP ERP. You can select either of the options based on your business needs when setting up your web shop. ATP configuration was covered in [Chapter 6](#).

10.2.3 Web Channel Internet Customer Self-Service

Web Channel Internet Customer Self-Service (ICSS) provides organizations with customer self-service capabilities. When accessing and checking the status of their Web Channel sales order, if customers see any kind of late deliveries or any issue with their order, they can create the service request without involving or calling a customer service representative.

The following are ICSS features available through the Web Channel application:

► **Account self-registration**

From the Web Channel, you can register an account and administer the user. With this application you can also check the account status, update account information, and verify account history.

► **Knowledge Management**

The Knowledge Management functionality provides customer with solutions for products they ordered to resolve issues without involving any service representatives. The knowledge base for the problem and the solution are maintained for each product and can be view on the Web Channel.

▶ **Installed Base (IBase) Management**

IBase Management allows customers to manage their products and keep their product portfolios. This helps keep track of the products purchased and creates service requests for any issues or malfunctioning of their products.

▶ **Service Request Management**

Service Request Management allows customers to track the service cycle for their problem products. Customers can create, monitor, and update the service request during the complete service process cycle.

▶ **Complaints and Returns Management**

Complaints and Returns Management helps customers create the complaints that they have with their product, and the organization can in turn issue the credit or return the product from the customer. Customers can view the status of the credit or returns on the web.

In this section, we looked at the core Web Channel Marketing, Sales, and ICSS business functions. In the next section, we'll look at the B2B services provided by the Web Channel.

10.3 B2B SAP CRM Web Channel

The Web Channel allows a company to exchange services, products, and information with B2B, B2C, business on behalf, collaborative showroom, and more. With the B2B SAP CRM Web Channel, companies and direct business partners to the B2B web shop log in to order products.

In a typical B2B scenario, a manufacturer sets up the web shop where a distributor can log in and carry out its daily activities by logging business transactions. Before any channel partner logs in to the web shop, the partner first need to be set up in the manufacturer's system. The product catalog is set up based on the specific channel partner.

The following describes the typical B2B Web Channel cycle:

1. Before the business partner logs in to the web shop, the company makes sure that the business partner record is set up for his ID in the manufacturer's system. The business partner logs on to the web shop.

2. The business partner views the product catalog and browses for the desired product to be ordered.
3. After the product is selected, the user adds the product to the shopping cart.
4. The business partner verifies the contract details.
5. The business partner checks for cross-sell, up-sell, and down-sell to order any additional products.
6. An availability check is performed on the product selected in the shopping cart, and the business partner verifies the delivery address or changes it if necessary.
7. The order is then ready to save. After the order is saved, the business partner receives the confirmation and can monitor the status to make sure the delivery dates are committed based on the order request date.

10.4 B2C SAP CRM Web Channel

In B2C, a consumer can log on to the web shop to place an order. There are some basic differences between B2B and B2C from a web shop perspective:

- ▶ The user registration is different between B2B and B2C.
- ▶ A B2B has customer-specific pricing, meaning that prices differ from customer to customer, whereas B2C price offerings are standard across all consumers.
- ▶ Business partner classification in SAP CRM is different between a B2B customer and B2C consumer.
- ▶ A product catalog is assigned to a specific target group for B2B customers.

The B2C Web Channel cycle involves the following steps:

1. The consumer registers on the web shop to log in to the shopping site.
2. The consumer browses the web shop and searches for the product he wants to order.
3. The product is selected and added to the shopping cart.
4. The consumer checks for cross-sell, up-sell, and down-sell to order any additional products.

5. An availability check is performed on the sales order to check whether the order can be confirmed for the order request date.
6. The delivery type is chosen, and the delivery address is changed if required. The consumer selects the payment type before saving the order.
7. The order is then ready to save. After the order is saved, the consumer receives the confirmation and can monitor the status to make sure the delivery dates are committed based on the order request date.

10.5 Product Catalog

A *product catalog* is the grouping of products in a hierarchical manner to be displayed on the web shop. The product catalog can be maintained based on the product hierarchy in the product master, or you can create your own product catalog which isn't a replica of the product hierarchy.

The product catalog in SAP CRM can be created by copying an existing product catalog or in the same structure as the product hierarchy in SAP ERP. When selecting products from the Web Channel product catalog, customers can check product availability and prices and then transfer the product to their shopping cart.

Figure 10.3 shows the product catalog setup and architectural flow. The product catalog is created via web-based catalog management and is stored in the SAP CRM database. The product catalog is replicated to the index server, which serves as a product catalog search engine. To ensure that the index server is updated with the latest product catalog version, any changes to the product catalog requires replication to the index server.

The index server is the product catalog database on the web and increases product search efficiency within Web Channel. Multimedia objects are published from SAP CRM to the web server. If the necessary HTTP and FTP setting are maintained, then the images on the product catalog are replicated from SAP CRM to the web server. The index server doesn't support binary data such as images and other MIME objects.

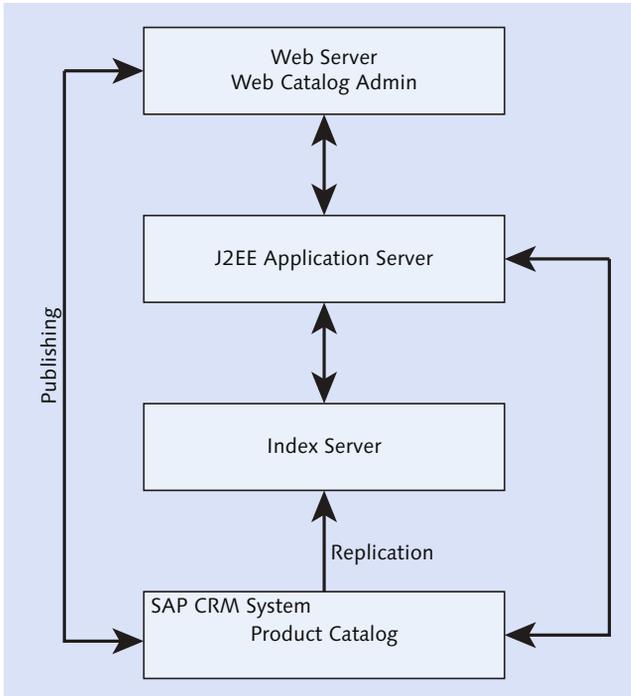


Figure 10.3 Product Catalog Architectural Flow

10.5.1 Hierarchical Elements

The product catalog consists of different elements that comprise the product hierarchical structure displayed in the web shop. The product catalog consists of a variant that allows you to feed in the pricing procedure and the sales area to determine the price of the product in the product catalog. You can restrict the view of the product catalog to a list of specific business partners based on your business needs. [Figure 10.4](#) shows the product catalog structure and its element.

The following sections look at the different elements of the product catalog's structural hierarchy.

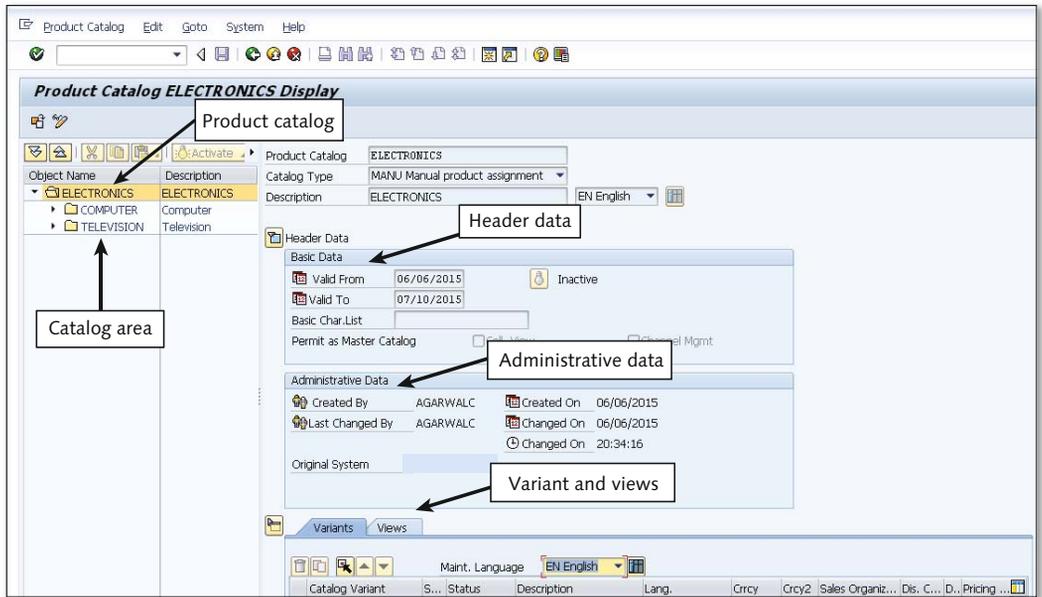


Figure 10.4 Product Catalog Structures

Catalog Header

The catalog header consists of the basic and administrative data of the product catalog. Figure 10.5 shows the catalog header that consists of the CATALOG TYPE, validity period of the product catalog (VALID FROM/VALID TO), STATUS, and basic characteristics list (BASIC LOC).

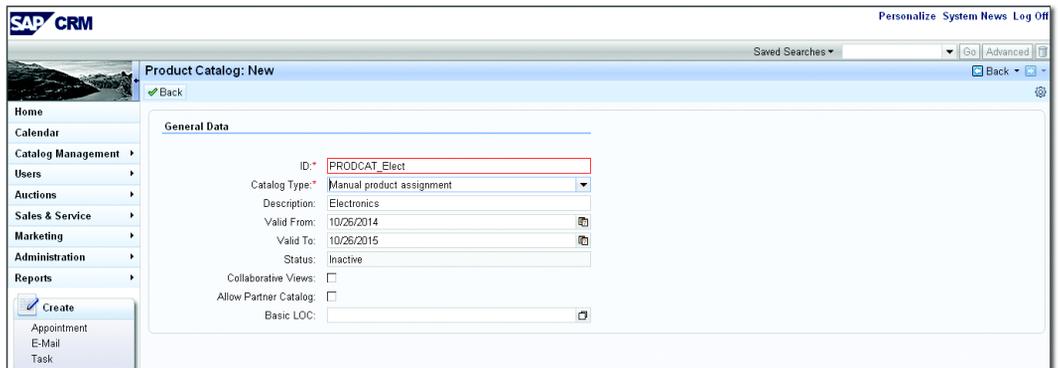


Figure 10.5 Catalog Header

The catalog type determines the following:

- ▶ The type of product assignment (manual, automatic, or both) possible and the product types allowed (i.e., MATERIAL or SERVICE)
- ▶ The text determination procedure for catalog areas and product items
- ▶ Which structure of directories will be automatically suggested and created during the initial creation of documents for a catalog area or catalog item

The product catalog types are shown in [Figure 10.6](#). They can be either an automatic product assignment or a manual product assignment. If you choose the automatic product assignment when creating the product catalog, then the products belonging to the product hierarchy that you assign to the product catalog will be copied in the item list automatically. If you choose the manual product assignment, you have to manually assign the product under the item list of the catalog area.

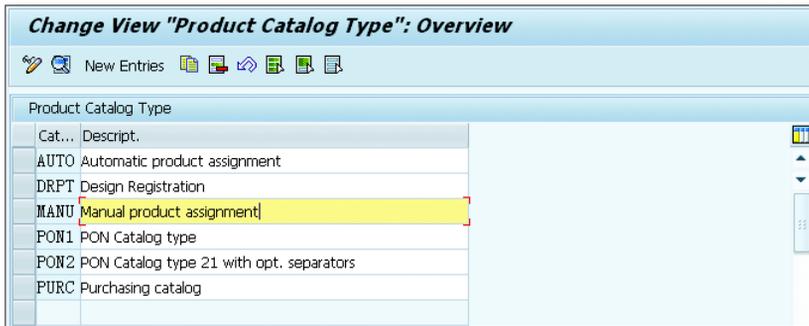


Figure 10.6 Product Catalog Types

To configure the product catalog type, follow the configuration path, CUSTOMER RELATIONSHIP MANAGEMENT • MASTER DATA • PRODUCT CATALOG • DEFINE CATALOG TYPES.

[Figure 10.7](#) shows the product catalog type detail configuration for the manual product assignment.

Change View "Product Catalog Type": Details

New Entries [Icons]

Catalog Type: MANU [Manual product assignment]

Definition

Prod. Assignmnt: A Manual product assignment only

Usage: Sales catalog

Product Types Allowed

Material

Service

Text Determination Procedure

For Areas: S1

For Items: S2

Folder Template

For Areas: MANU-AREA

For Items: MANU-ITEM

Product Order Number

Use Product Order Number

Format of Product Order Numbers:

Left Separator:

Right Separator:

Print Campaign ID on Order Card

Figure 10.7 Product Catalog Type Details

Catalog Areas

The catalog area shows the product catalog in the hierarchical structure. You can enter the basic information while creating the product catalog hierarchy, as shown in [Figure 10.8](#). You assign the documents, for example, images, to the catalog area. You can index the catalog area if the catalog and the catalog area are active. [Figure 10.9](#) shows the GENERAL DATA AREA, AREA TEXTS, and the AREA IMAGES & DOCUMENT of the product catalog hierarchical structure.

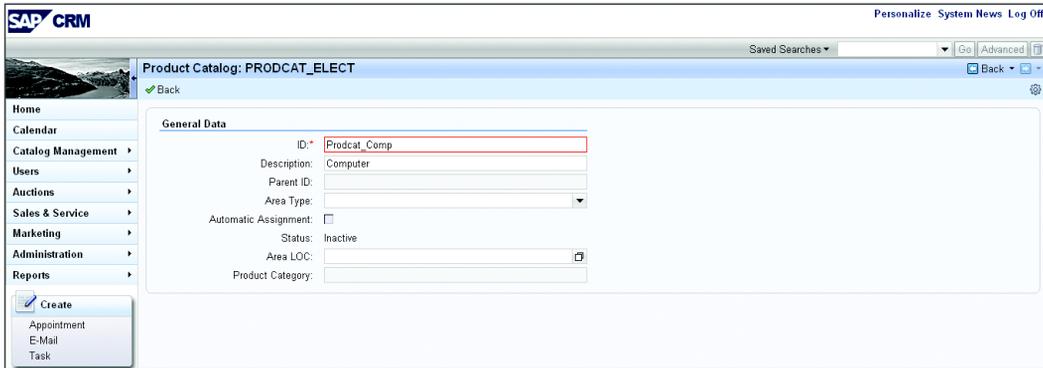


Figure 10.8 Catalog Subarea

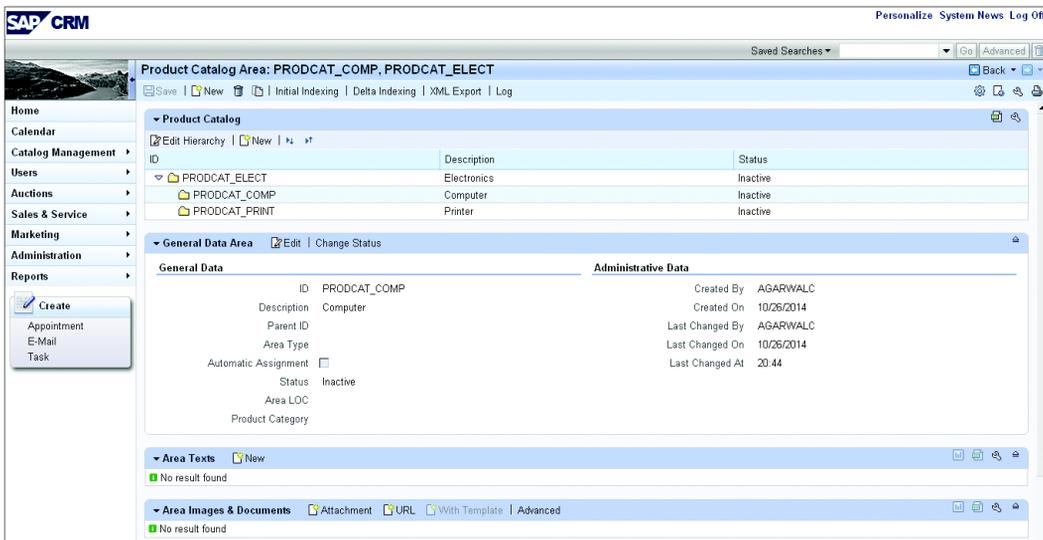


Figure 10.9 Catalog Area

Variants

Catalog variants allow a company to use multiple languages, pricing models, currencies, and distribution chains for one product catalog. Figure 10.10 shows the catalog variant with the language, currency, pricing procedure, sales organization, distribution channel, division, customer group, price group, and price list options. You can create the catalog variant with the validity period to be activated along with the catalog and catalog area.

General Data

ID*	ZCATVAR_ELEC
Description:	Electronic Variant
Language*	English
Currency*	US Dollar
Pricing Procedure:	
UOM Type*	Sales unit
Sales Organisation*	Sales Org S1
Responsible Sales Org.:	
Distribution Channel*	00
Header Division*	01

Customer Group:
Price Group:
Price List:
Valid From: 10/26/2014
Valid To: 10/26/2015

Figure 10.10 Catalog Variant (1)

Figure 10.11 shows the catalog variant created for the product catalog PRODCAT_ELECT. The catalog VARIANT ID is ZCATVAR_ELEC.

General Data

ID	PRODCAT_ELECT
Catalog Type	Manual product assignment
Description	Electronics
Valid From	10/26/2014
Valid To	10/26/2015
Status	Inactive
Collaborative Views	<input type="checkbox"/>
Allow Partner Catalog	<input type="checkbox"/>
Basic LOC	

Administrative Data

Created By	AGARWALC
Created On	10/26/2014
Last Changed By	AGARWALC
Last Changed On	10/26/2014
Last Changed At	20:40

Catalog Variants

Actions	Variant ID	Description	Language	Currency	Pricing Procedure	Status
Change Status	ZCATVAR_ELEC	Electronic Variant	English	US Dollar		Inactive

Figure 10.11 Catalog Variant (2)

Views

Catalog views act as filters to the product catalog and allow you to assign a business partner or target group to the catalog view. This allows you to restrict the specific product catalog views to the specific customer. This also increases the overall selling efficiency and helps organizations understand customer buying behavior. As shown in the CATALOG VIEW screen (see Figure 10.12), in the PRODUCT CATALOG HIERARCHY section, COMPUTER is activated under the USED IN CATALOG VIEW

column and assigned to a business partner. When this business partner logs in to the web shop, he will view the products under "Computer" only.

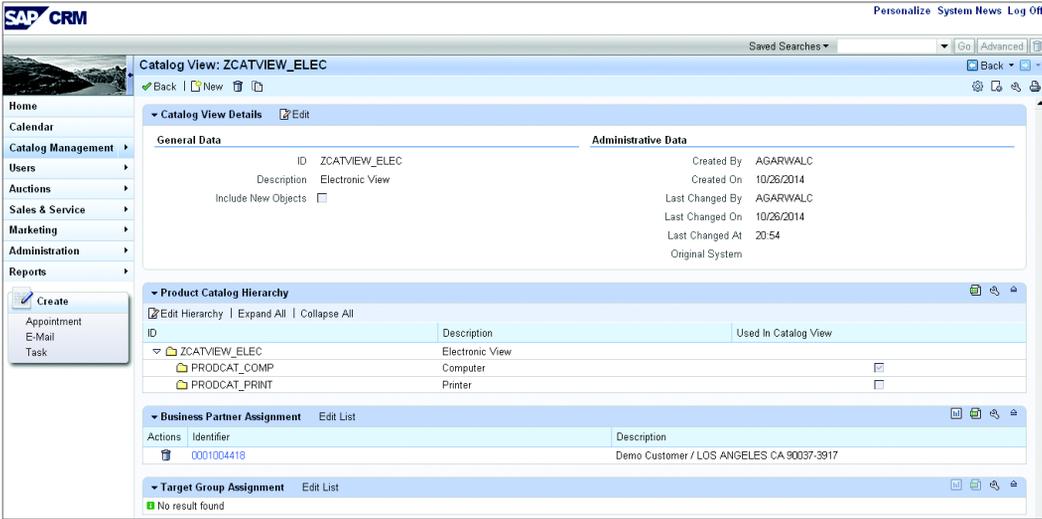


Figure 10.12 Catalog Views

Item List and Details

The catalog area consists of the items that are viewed on the web shop. The product catalog shows these items with price information and availability details. Figure 10.13 shows the ITEM OVERVIEW section within PRODUCT CATALOG AREA, which consists of the ITEM ID, DESCRIPTION, STATUS, ACCESSORIES, and CONFIGURABLE PRODUCT options. The list must be activated to be visible on the web shop.

The PRODUCT CATALOG ITEM details consist of GENERAL DATA, ITEM TEXTS, and ITEM IMAGES & DOCUMENTS. Multimedia objects such as images can be assigned to the product and then replicated to the web shop to be viewed by the customer (see Figure 10.14).

The screenshot shows the SAP CRM interface for the Product Catalog Area. The breadcrumb path is 'Product Catalog Area: PRODCAT_COMP, PRODCAT_ELECT'. The main content area displays a list of items under the 'General Data Area' tab. The items are:

Item ID	Description	Status
PRODCAT_ELECT	Electronics	Inactive
PRODCAT_COMP	Computer	Inactive
PRODCAT_PRINT	Printer	Inactive

Below the list, the 'General Data' and 'Administrative Data' tabs are visible. The 'General Data' tab shows details for item ID 'PRODCAT_COMP':

Field	Value	Field	Value
ID	PRODCAT_COMP	Created By	AGARWALC
Description	Computer	Created On	10/26/2014
Parent ID		Last Changed By	AGARWALC
Area Type		Last Changed On	10/26/2014
Automatic Assignment	<input type="checkbox"/>	Last Changed At	20:44
Status	Inactive		
Area LOC			
Product Category			

The 'Item Overview' tab at the bottom shows a table with columns for Actions, Item ID, Description, Status, Accessories, and Configurable Pro... The table contains one row for item ID '423487' with description 'Demo Product' and status 'Inactive'.

Figure 10.13 Item Overview List within the Product Catalog Area

The screenshot shows the SAP CRM interface for the Product Catalog Item Details. The breadcrumb path is 'Product Catalog Item: 423487'. The main content area displays details for item ID '423487' under the 'Product Catalog Item Details' tab. The details are organized into sections:

- General Data:**
 - ID: 423487
 - Description: Demo Product
 - Configurable Product:
 - Status: Inactive
 - Product Type: Material
- Administrative Data:**
 - Created By: AGARWALC
 - Created On: 10/26/2014
 - Last Changed By: AGARWALC
 - Last Changed On: 10/26/2014
 - Last Changed At: 21:02
 - Original System: OSXCLNT100
- Item Texts:** No result found
- Item Images & Documents:** No result found
- Possible Accessories:** No result found
- Attributes:** No result found
- Assigned Products:** No result found

Figure 10.14 Item Details

After the product catalog is set up, you need to activate the product catalog at different levels, that is, catalog header, catalog variant, catalog area, and product item (see [Figure 10.15](#)). After the product catalog is activated at all levels, it's replicated to the Index Management Service (IMS) server.

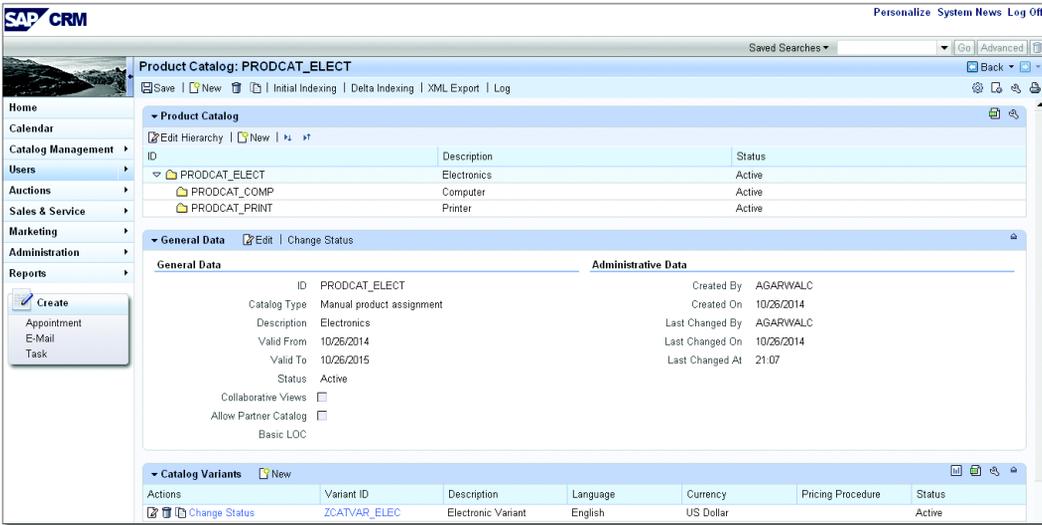


Figure 10.15 Product Catalog Activated at All Levels

10.5.2 Indexing

Product catalog indexing enables products to be replicated to the TREX index server so that the product catalog can be viewed in the web shop by the customer logging in.

SAP provides two types of indexing: initial indexing and delta indexing. [Figure 10.16](#) shows the INITIAL INDEXING and DELTA INDEXING buttons highlighted on the PRODUCT CATALOG screen.

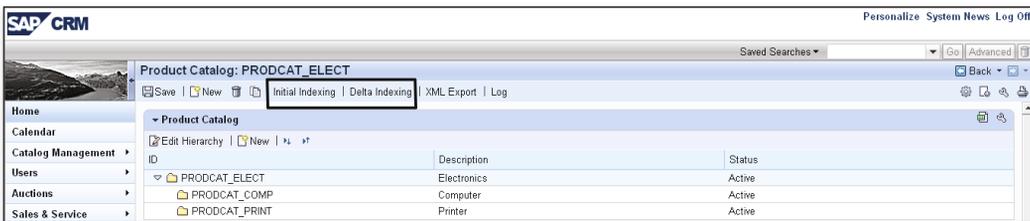


Figure 10.16 Product Catalog Indexing

Initial indexing is done when you create the product catalog, and it's the first time that you're carrying out the product catalog indexing. Any further changes to the product catalog are replicated to the TREX index server via delta indexing.

10.5.3 Pricing Concept

Product catalog pricing is one of the key elements in any Web Channel application. A customer needs to know the price of the product before adding the product to the shopping cart. SAP CRM enables companies to show product prices in the product catalog while browsing through the products to help customers make informed decisions about their purchase. [Figure 10.17](#) shows the flow diagram for product catalog pricing.

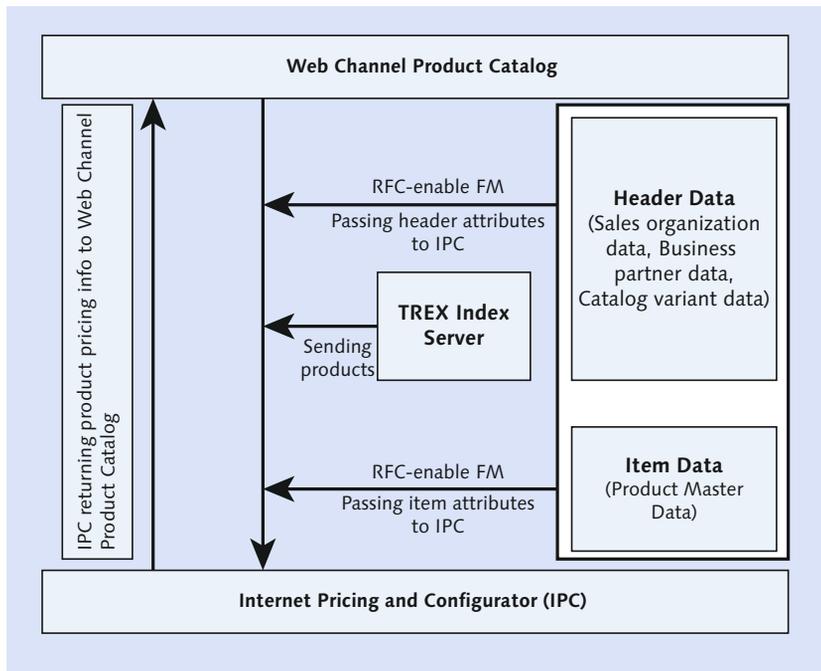


Figure 10.17 Product Catalog Pricing Flow

As shown in [Figure 10.17](#), the list price is assigned to the product catalog and replicated to the TREX index server with the other product information. When the product catalog is accessed via the Web Channel, the prices in the product catalog are retrieved from the TREX index during runtime. This results in quick product price information for the list price, whereas the IPC price calculates the price on the product catalog based on the pricing procedure assigned to the catalog variant in the product catalog. The IPC further follows the route of determining the price based on the specific condition records with a combination of master data fields.

The following describes the product catalog pricing cycle:

1. A customer logs in to the web shop and chooses a catalog variant; as soon as the catalog variant is selected, the RFC-enabled function module `CRM_ISA_PRICING_HDRDATA_GET` is triggered to retrieve the pricing-relevant header attributes. As shown in [Figure 10.17](#), these attributes are business partner data, sales organization data, or catalog variant data.
2. The product IDs are then retrieved from the TREX index and passed to the IPC.
3. In addition to the header attributes, further pricing-relevant item attributes are retrieved via the RFC-enabled function module `CRM_ISA_PRICING_ITM_DATA_GET`. The attributes retrieved are specific to the product master data.
4. After all the pricing-relevant attributes have been retrieved, these attributes are sent to IPC for pricing of the products in the web catalog.
5. After IPC calculates the product price, these prices are then published on the Web Channel product catalog.

In this section, we discussed the overall functionality of the product catalog in the SAP CRM Web Channel. We looked at the different hierarchical elements, product catalog indexing, and how prices can be displayed in the product catalog. In the next section, we'll walk through the XCM settings required to set up the web shop and User Management.

10.6 XCM Settings

Extended Configuration Management (XCM) is used to configure Web Channel applications after installing the web components. SAP provides various options to suit your specific needs. The XCM configuration settings are required to launch the shop administration application, user administration application, and B2B application.

[Figure 10.18](#) shows the Shop Management process required to set up the web shop. It consists of settings such as GENERAL INFORMATION, CATALOG, ORDER, and MARKETING. General application settings such as application security are applicable to the whole web application.



Figure 10.18 Shop Management Process

10.6.1 Shop Administration Settings

Before configuring the web shop, it's necessary to set up the shop for maintaining the web shop configuration via `http://servername:port/shopadmin/admin/xcm/init.do`.

Figure 10.19 shows the shop administration settings screen, which displays the application configurations CRMSHOP, ERPCRMESHOP, and R3SHOP from SAP. Based on your business scenario, you can configure the shop administration with the appropriate JCo. CRMSHOP is used if you're using an SAP CRM sales order and an SAP CRM catalog. ERPCRMESHOP is used if you're using an SAP ERP sales order and an SAP CRM product catalog.

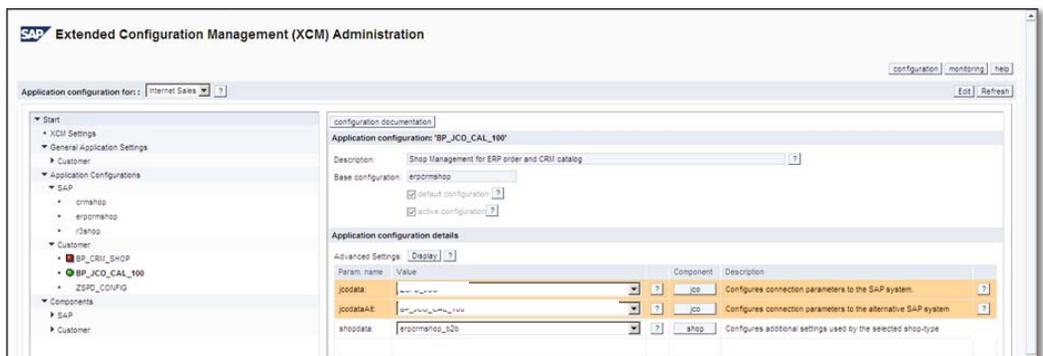


Figure 10.19 Shop Administration Settings

In this specific example, the customer configuration is a copy of ERPCRMSHOP, which needs a JCo pointing to SAP ERP and JCODATAALT pointing to SAP CRM. For crmshop, both JCos will be pointing to SAP CRM.

After the shop administration configuration is completed, you can log in to the web shop and configure the web shop GENERAL INFORMATION, CATALOG, TRANSACTIONS, CUSTOMERS, and MARKETING tabs as shown in [Figure 10.20](#) and [Figure 10.21](#), respectively. The GENERAL INFORMATION tab includes options for LANGUAGE, COUNTRY, ADDRESS FORMAT, IPC ACTIVE, and USAGE.

The screenshot shows the 'General Information' tab of a web shop configuration interface. The 'General Settings' section includes fields for Language (EN), Country (US), Departure Country, and Country Group (0002). There are radio buttons for Address Format (European and American) and a checked checkbox for IPC active. The 'User Management' section has a Reference User field. The 'Usage' section has a radio button selected for Internet Sales B2B. At the bottom are 'Change', 'Delete', and 'Cancel' buttons.

Figure 10.20 Web Shop General Information Tab Configuration

[Figure 10.21](#) shows the PRODUCT CATALOG configuration that consists of the CATALOG and CATALOG VARIANT fields. You can also configure whether the price on the product catalog can be a list price or be determined via the IPC.

The screenshot shows the 'Catalog' tab of a web shop configuration interface. The 'Product Catalog' section includes fields for Catalog (*), Catalog Variant (*), and Catalog View. Below these are radio buttons for 'Controlling Price Determination in the Catalog' with options: via IPC (*), List Prices (*), and No Price Display (*). The 'List Prices' option is selected. At the bottom are 'Change', 'Delete', and 'Cancel' buttons.

Figure 10.21 Web Shop Catalog Tab Configuration

Figure 10.22 shows the TRANSACTIONS tab where you can configure the type of the transaction to be created when the order is placed from the web shop. Because the example configured here is ERPCRMESHOP, you should populate the R/3 ORDER TYPE field in the transaction configuration.

Figure 10.22 Web Shop Transactions Tab Configuration

Additional functionality that you can configure with the web shop transaction is ALLOW ORDER CHANGES if you want the order to be changed by the customer if required, ENABLE CONTRACT DISPLAY, DISPLAY INVOICES, DOWN PAYMENTS AND CREDIT MEMOS, and ALLOW ORDERING OF QUOTATIONS.

10.6.2 Application Settings

SAP has provided predefined configurations that customers can use and copy from. You can change the B2B application configuration based on your specific needs. You configure the application in the link, <http://servername:port/b2b/admin/xcm/init.do>.

Figure 10.23 shows the EXTENDED CONFIGURATION MANAGEMENT (XCM) ADMINISTRATION screen for ERPCRMSTANDARD. You can copy the standard configuration, which is used when configuring B2B for the product catalog in SAP CRM and when

orders are created in SAP ERP. The customer configuration is a copy of ERPCRMSTANDARD, which is configured with a JCo pointing to SAP ERP and JCODATAAALT pointing to SAP CRM. Some of the predefined configuration applications provided by SAP are b2bWithUME, b2bcmstandard, erpcrmstandard, homcrmstandard, mcmstandard, ocicrmstandard, and oobcrmstandard. You can configure the field-related settings for the web shop within the XCM customer configuration.

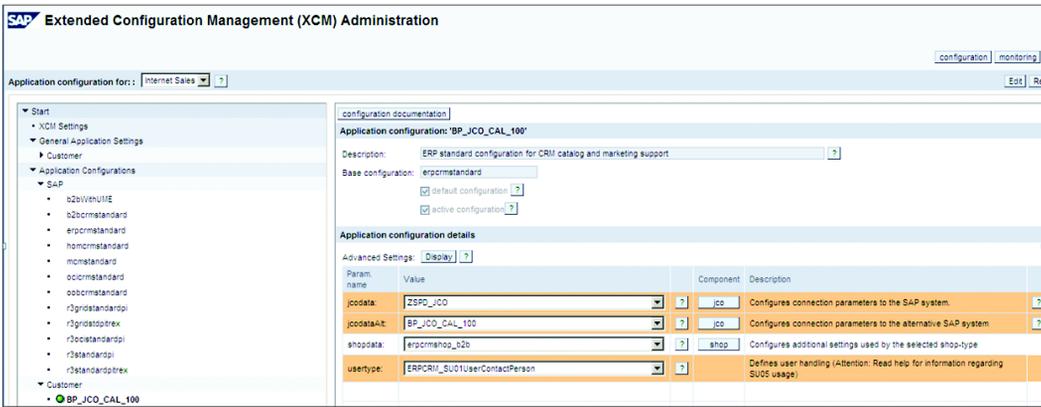


Figure 10.23 XCM Administration for B2B Application

SAP has provided two types of shopping baskets that control the data storage and how the shopping basket behaves in the web shop:

- **crmbasket**

This is managed by the SAP CRM order functionality, which doesn't require any further configuration.

- **javabasket**

This is managed by the Java Application Server and requires the configuration to be set up if activated. Basket data is stored in the J2EE database.

10.6.3 User Administration Settings

After the configuration on the shop administration and B2B application is completed, you need to configure the user administration so that you can log in to the user administration portal to create the contact person and assign the relationship.

To configure the user administration portal, log in to the following link: <http://servername:port/isauseradm/admin/xcm/init.do>.

Figure 10.24 shows the EXTENDED CONFIGURATION MANAGEMENT (XCM) ADMINISTRATION screen for user administration wherein the XCM configuration is copied from ISAR3USERADMSTANDARD. Because this is an SAP ERP sales order example, the JCo connection is pointing to the SAP ERP system. If an SAP CRM sales order is used, then you need to configure isuseradmstandard.

After the configuration is completed, you can access the user administration portal to create new users.

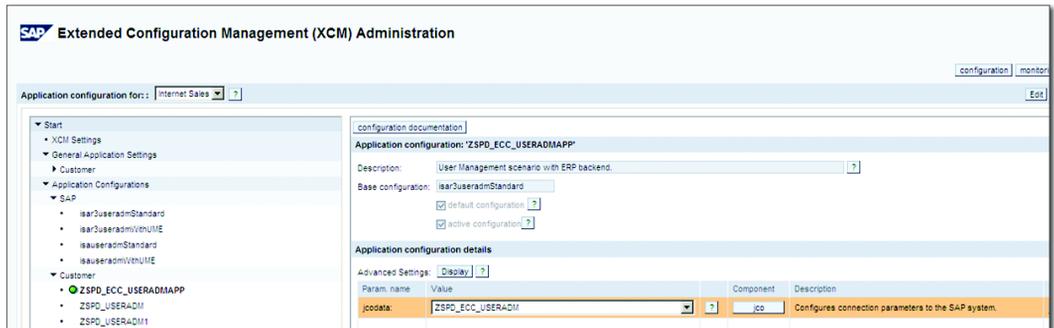


Figure 10.24 XCM Administration for User Administration

The user administration application is used to create a user as the contact person and maintain the relationship with the customer. To create the new contact, use the link, <http://servername:port/isuseradm/admin/init.do>.

Figure 10.25 shows the E-SELLING USER MANAGEMENT login page.

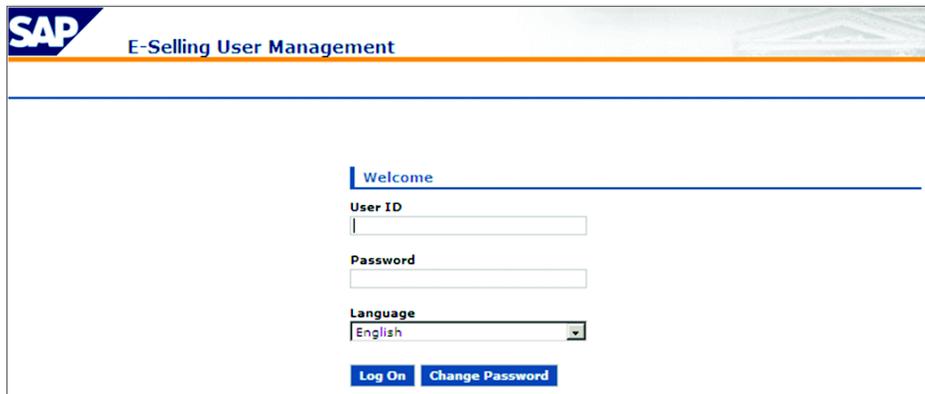


Figure 10.25 E-Selling User Management Login Page

After you log in to the User Management portal, you can create the new user or change the existing user from the link, as shown in [Figure 10.26](#).

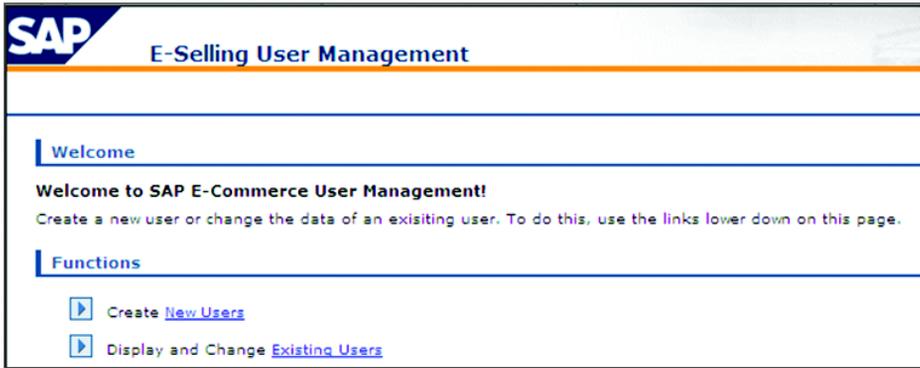


Figure 10.26 User Management Portal to Create a New User

After completing the web shop configuration and setting up the user B2B, the application is ready to access the shop and place an order via link <http://servername:port/b2b/b2b/init.do>.

[Figure 10.27](#) shows the E-COMMERCE BUSINESS-TO-BUSINESS APPLICATION login page.

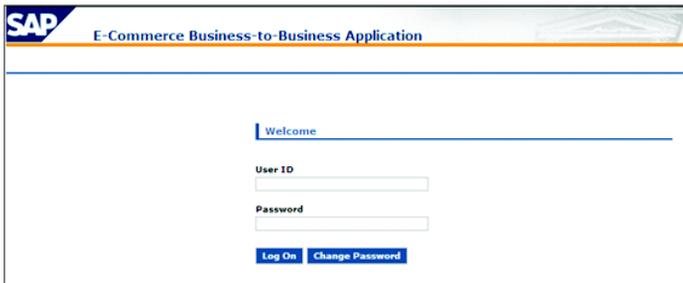


Figure 10.27 E-Commerce Business-to-Business Application Login Page

In this section, we covered the basic concepts and settings of XCM. We've also specified the links required for setting up each of the XCM functions required to set up the web shop. In the next section, we'll discuss in greater depth the User Management settings that can be configured for the Web Channel.

10.7 User Management

User Management within Web Channel is used to create and manage existing Internet users that carry out day-to-day activities in the web shop. You can create users for two types of shops: a B2B shop and a B2C shop. The users can be created in the SAP CRM backend system for those who access both shops. The Web Channel User Management application is applicable to B2B shop users only.

When Internet users are created, authorization roles are assigned to them so that they can shop on the Web Channel. The authorization roles are assigned to both the B2B and B2C users. The authorization roles are different for normal Internet users than for web shop managers and super users.

10.7.1 User Creation in a B2C Web Shop

Figure 10.28 shows the B2C web shop user creation process where the consumer registers its user as a part of self-registration, and the user is created in the SAP CRM system and then replicates back to the SAP ERP system.

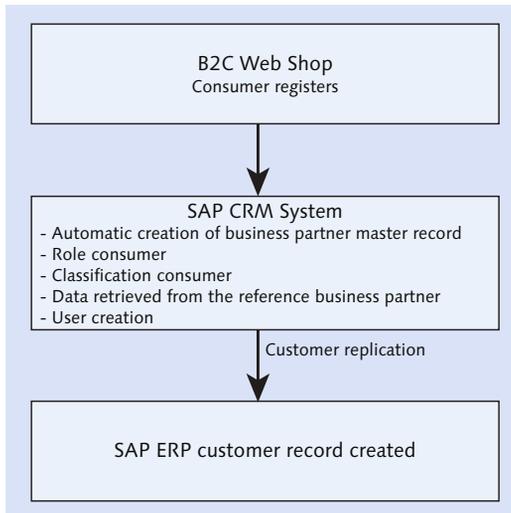


Figure 10.28 B2C Web Shop User Creation Process

The authorization role is created and assigned to the reference user so that after the consumer registers, he will be assigned with the authorization role from the reference user. This creates the Internet user for the consumer in the backend

SAP CRM system, and the Internet user is assigned to the business partner with the role and classification consumer. [Figure 10.28](#) shows the registration process for the B2C web shop where the system creates the business partner and the Internet user in step 2. After the business partner is created, it uploads to SAP ERP in step 3.

10.7.2 User Creation in a B2B Web Shop

[Figure 10.29](#) shows the user creation process in a B2B web shop where you can make use of the User Management application set up via XCM.

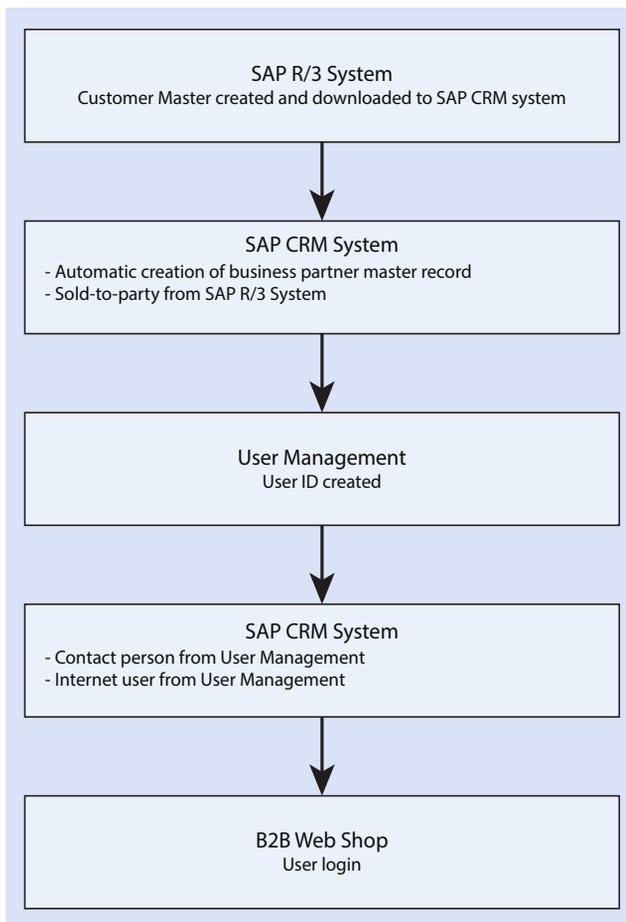


Figure 10.29 B2B Web Shop User Creation Process

In this scenario, the system administrator creates the web shop manager user via Transaction SU01 and assigns the appropriate authorization roles. The web shop manager then logs in to the web-based User Management application, creates the super user from the customer side, and links him to the sold-to party.

The sold-to party is replicated from SAP ERP to SAP CRM. After the super user is created from the User Management application, the system sends the user ID and password to the super user. The contact person is created with the contact person role. The Internet user role is created for the same contact person who was assigned with the authorization roles. This helps them to log in to the web shop and carry out their day-to-day activities on the B2B web shop.

This section described how the web-based User Management application can be used to manage existing users or create new users for the B2B web shop application. The process flow definition and the diagrammatic representation of the user flow helps to show the user-creation process for both shops.

10.8 Web Channel Experience Management

SAP Web Channel Experience Management (WCEM) evolved from a demand for e-business solutions based on market needs. Current licensed users of WCEM can benefit from this platform's multi-channel, customer self-service capabilities. New users are encouraged to use hybris Omni Commerce as described in the note box below.

Important!

As of January 2014, SAP has removed WCEM from its price list due to the acquisition of hybris by SAP and the innovations brought by the hybris Commerce Suite. As of now, hybris Omni Commerce is poised to succeed WCEM. More information on hybris can be found at <https://www.hybris.com/en/>. The information here pertains only to SAP CRM.

The WCEM framework is supported with backend object layer that communicates with the backend system, BOL, UI, and interaction layer, which allows users to log in and access the web shop. The web service layer allows users to access business objects via SAP CRM Mobile browser or apps.

The configuration tool includes Web Channel Builder, which helps companies set up their web shops, and SAP NetWeaver Developer Studio (NWDS) is used to modify the UI based on the customer-specific business needs.

The following are business functions provided by WCEM:

▶ **E-Marketing**

E-Marketing delivers personalized recommendations, Loyalty Management, campaigns and promotions, ability to target catalog content based on a specific business partner, product ratings and integration to third-party web content management systems.

▶ **E-Commerce**

E-Commerce delivers order management, product catalog management, check out and payment processing, availability check in store, and pick up capability.

▶ **E-Service**

E-Service delivers self-service, Service Request Management, Complaints and Returns Management, product registration, IBase Management, and Knowledge Management.

WCEM also provides new architecture around how the product catalog is displayed in the web shop. One of the options from WCEM for showing the product catalog is multi-channel catalog (based on SAP Master Data Management) with the SAP CRM backend. In this option, the product catalog in the web shop isn't retrieved from the SAP CRM system, and therefore catalog variants for maintaining the currency and language don't exist in SAP CRM. The products from SAP CRM are loaded to SAP MDM via FTP (SAP Process Integration [PI] isn't required). The web shop then retrieves the product, images, and multimedia objects from SAP MDM to show and display in the web shop for the business users.

10.9 Summary

The Web Channel allows consumers to order online and distributors to buy from manufacturers. In this chapter, we discussed the Web Channel application architecture and business functions. We then dove into the different applications that can be used to configure the Web Channel. In the next chapter, we'll discuss SAP CRM Mobile solutions.

Mobility is vital to business modernity in a society that is constantly on the move. In this chapter, we'll discuss the SAP CRM Mobile solution.

11 SAP CRM Mobile Technology

For companies that have field employees out working with customers, system mobility is key. Employees need to be equipped with the devices and infrastructure to provide accurate information on business transactions or customer information. Therefore, it becomes important to provide them with the right tools to overcome mobility issues.

SAP CRM provides mobile solutions that can help an organization do just that. In this chapter, we'll look at the mobile solutions for SAP CRM processes. We'll also identify key SAP CRM Mobile business functions and implementations. To begin, let's look at an overview of the SAP CRM Mobile platform.

11.1 SAP CRM Mobile Overview

SAP CRM Mobile provides sales and service functionalities that cover most of the key transactions and information required for a technician or a sales professional. This enables field employees to carry out their work more effectively at a customer location. They can easily access tools for interaction logs and business transaction information. This also reduces data redundancy and the duplicate effort of maintaining data.

As discussed in previous chapters, SAP CRM architecture covers different channels that connect to the backend systems required to support SAP CRM, providing information on availability, reporting capability, and executing the logistics transactions. These include SAP Supply Chain Management (SAP SCM), SAP BusinessObjects Business Intelligence (SAP BusinessObjects BI), and SAP ERP.

As part of the SAP CRM architecture, field applications also serve as a channel that connects field technicians and sales professionals with customers anywhere, offering the latest information on purchases or product information.

Field applications in SAP CRM consist of mobile clients and handheld devices. Mobile clients connect the SAP CRM backend system to laptops and handheld devices like iPhones, BlackBerrys, or any Android phones. We'll discuss more about mobile clients and handheld devices in the next section.

11.2 SAP CRM Mobile Business Functions

SAP CRM Mobile business functions allow an organization to log its transactions and access master data information from laptops to handheld devices. Mobile clients are normally laptop computers on which the SAP CRM Mobile Sales and SAP CRM Mobile Service applications are executed. Mobile clients are connected to the SAP CRM server for data exchange via the communication station.

Figure 11.1 shows the SAP CRM mobile client connected to the SAP CRM server via a communication station. Figure 11.1 shows high-level information on how the SAP CRM system connects with the SAP CRM mobile client, SAP ERP, and any other third-party system.

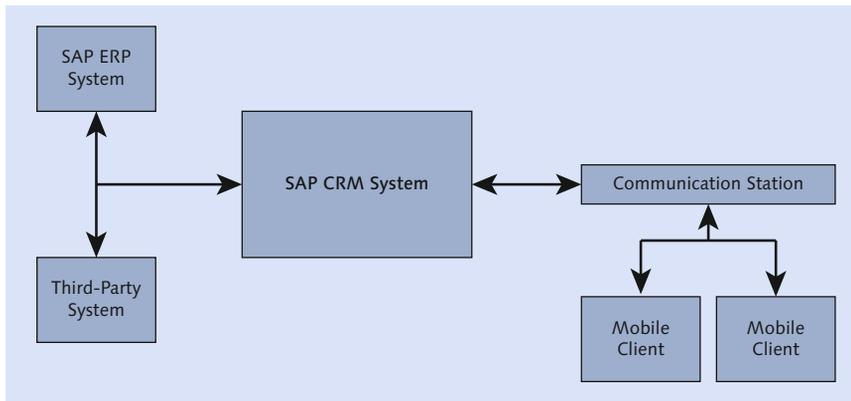


Figure 11.1 SAP CRM Mobile Client Connection to the SAP CRM Server via a Communication Station

The field service or field sales representative executes different business functionalities and then adds the relevant information to the SAP CRM mobile client. This

reduces the time and effort to enter the same information when on-premise within the company's SAP CRM system. Following are some of the business functions that are available on the SAP CRM mobile client that field sales/service representatives can carry out when communicating with the customer. The information added for these transactions on the SAP CRM mobile client is synced back to the SAP CRM server:

- ▶ Activity
- ▶ Leads
- ▶ Opportunities
- ▶ Sales orders
- ▶ Service orders
- ▶ Service confirmations
- ▶ Installed Bases (IBases)
- ▶ Complaints and returns processing
- ▶ Service Contract Management
- ▶ Products and business partner management
- ▶ Service Parts Management

11.3 Implementing SAP CRM Mobile

SAP CRM provides multiple options to enable SAP CRM Mobile solutions that provides you with the capability to connect with SAP CRM applications on laptops and handheld devices. The following sections discuss these various options.

11.3.1 Mobile Client

A mobile client is used by field sales and service employees on laptop computers to connect to the SAP CRM server via the communication station. The mobile client is usually disconnected to the SAP CRM server and can be synced with master and transaction data via a request. This can be done by the field sales/service representative once a day when the mobile client establishes the connection to the SAP CRM server.

The connection between the mobile client and the SAP CRM server is established via ConnTrans. If ConnTrans is activated by the sales representative, the data flow

from the mobile client and the SAP CRM server is initiated. Any change in the data from the SAP CRM mobile UI is queued up in the outbound of the mobile client and is triggered to update the SAP CRM server via a communication station when ConnTrans is activated. The data transfer is done via Distributed Component Object Model (DCOM) and is received from the message transfer service server via the communication station. For mobile clients, a Synchronous BDoc (SBDoc) is generated, and this undergoes validation, replication of the data, and confirmations to the mobile clients for the data receipt from the SAP CRM server.

Figure 11.2 shows the SAP CRM mobile client landscape with different components connected to each other. This is a typical mobile client landscape used by an organization.

The following list provides more information on these components:

❶ SAP ERP system

The SAP ERP system is connected to SAP CRM and is the source of all master data that flows to SAP CRM.

❷ SAP CRM system

The SAP CRM server consists of all middleware services and data that are required to pass on to the mobile client. The consolidated database is a part of the SAP CRM server, which receives the Customizing objects master data loaded from the SAP CRM database to the consolidated database.

❸ Mobile Repository Server

The Mobile Repository Server (MRS) resides in the Mobile Application Repository (MAR) and is used as a test application database.

❹ Communication Station

The communication station is used for data exchange between the SAP CRM server and the SAP CRM mobile client.

❺ Mobile Development Workstation

The Mobile Development Workstation (MDW) is used to design the SAP CRM mobile client applications. It's also used to provide authorization to SAP CRM mobile client users. The Mobile Application Studio (MAS) is the tool used to design the applications, and the Authorization Management Tool (AMT) is used to provide appropriate authorizations to users.

❻ Mobile client

The mobile client is the application used by field sales/service representatives to log their work and access relevant customer information.

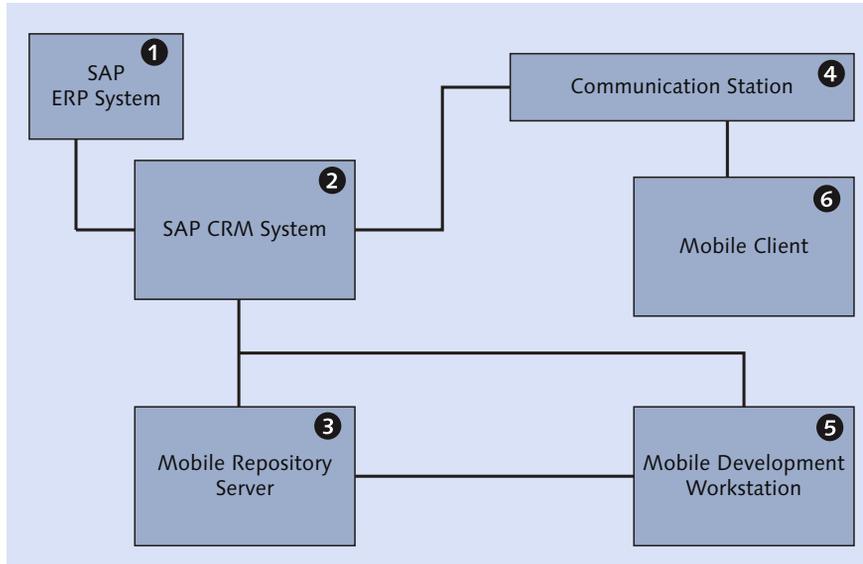


Figure 11.2 SAP CRM Mobile Client System Landscape

In addition to these components, the workgroup server and workgroup clients can also play a part when in use via the workgroup solution. The workgroup service is connected to the SAP CRM communication station. It's used for storing the central database that the workgroup clients connect with.

11.3.2 Sybase Mobile Sales for SAP CRM

Sybase Mobile Sales for SAP CRM provides organizations with the capability to connect SAP CRM to SAP mobile applications. Sales representatives can use the mobile applications to meet their needs. The data from the SAP CRM backend system is transformed by the Sybase Unwired Platform to view it in a mobile format.

The Sybase Unwired Platform consists of the following different tiers that have different functions: Mobile Business Objects (MBOs), Data Orchestration Engine (DOE), UI capabilities, databases, software applications, and web services.

The Sybase Unwired Platform consists of the mobile SDK, which allows the creation of applications and supports the complete development lifecycle for object API apps, HTML5/JavaScript hybrid apps, and Open Data (OData) SDK applications.

Figure 11.3 shows the Sybase Mobile Sales architecture that provides an overview of the system components involved to set up the SAP CRM Mobile Sales on the Sybase Unwired Platform.

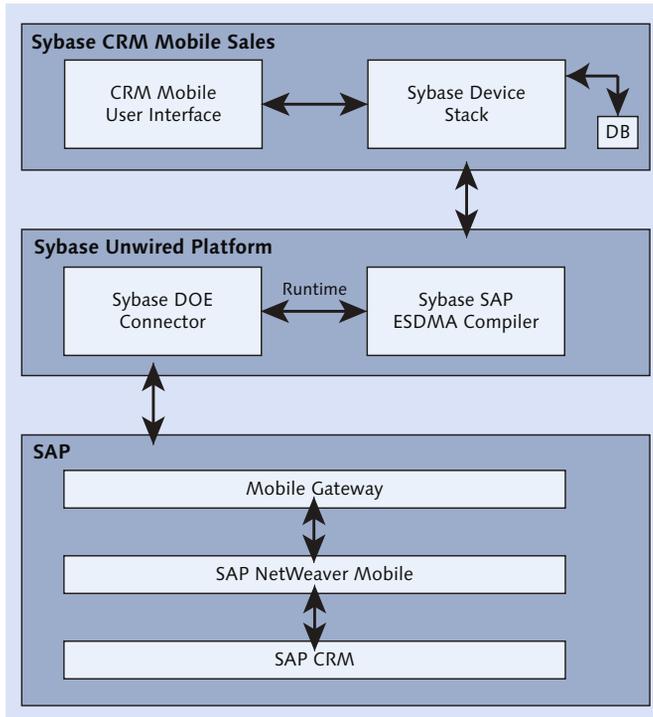


Figure 11.3 Sybase Mobile Sales Architecture

Sybase Mobile Sales for SAP CRM provides sales representatives with the account management functionality, contact management, activities, leads, opportunities, and analytics. It provides organizations with better operability, easy adaptation, quick issue resolution, better quality, and competitive advantage on user experience.

Figure 11.3 shows SAP CRM with SAP NetWeaver Mobile and the gateway required to connect to Sybase Unwired Platform. The Sybase Unwired Platform transforms the SAP CRM data into the format that is pushed to the mobile application and is then accessed by sales representative.

SAP Business Suite consists of Business Application Programming Interface (BAPI) wrappers and events that connects to the Sybase Unwired Platform via

SAP NetWeaver Mobile and its gateway entry point. DOE consolidates and distributes the data to the Sybase Mobile application via the gateway. DOE uses messaging to transmit the data to and from devices. On the Sybase Unwired Platform, the Entry Set Definitions for Mobile Applications (ESDMA) converter utility converts the ESDMA bundle into a Sybase Unwired Platform package that is deployed to unwired servers.

11.3.3 SAP CRM Mobile Sales Applications

There are a number of SAP CRM Mobile Sales applications that can be implemented with a number of devices. In this section, we'll discuss not only the specific mobile application for SAP CRM Sales but also the other applications and devices that the module can be used with.

Mobile Application

Similar to Sybase Mobile Sales for SAP CRM, the SAP CRM Mobile Sales application requires an add-on to the SAP CRM system. The SAP CRM Mobile Sales application enables sales representatives to log their daily activities on the mobile application to maintain their work data at multiple places and increase their productivity. In addition to this, they can also access customer information anytime and anywhere.

The following list shows the key functionality provided with the SAP CRM Mobile Sales application. These functions can be searched, create, and updated from the mobile applications:

- ▶ Accounts and contact management
- ▶ Lead Management
- ▶ Opportunities
- ▶ Activities
- ▶ Quotation management and order management
- ▶ Analytics

Figure 11.4 shows the SAP CRM Mobile Sales application overview with the connection and the flow from the SAP CRM backend components to the mobile adaptation and device connection.

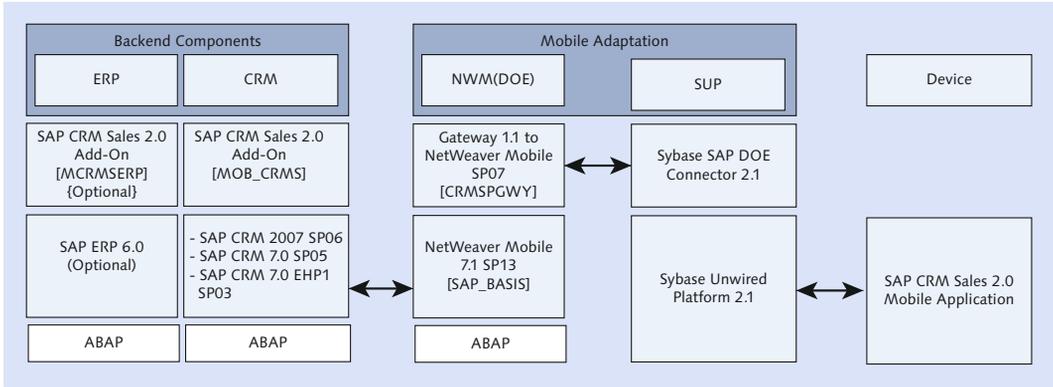


Figure 11.4 SAP CRM Mobile Sales Overview

Figure 11.5 shows the detailed SAP CRM Mobile Sales flow diagram, including the SAP CRM add-on MOB_CRMS required on the SAP CRM server and SAP NetWeaver Mobile for connecting to Sybase Unwired Platform. The Sybase Unwired Platform is required for both the SAP CRM Mobile Sales application and the Sybase Mobile Sales application. The data flows back and forth from the SAP CRM system to the device via mobile adaptation add-ons.

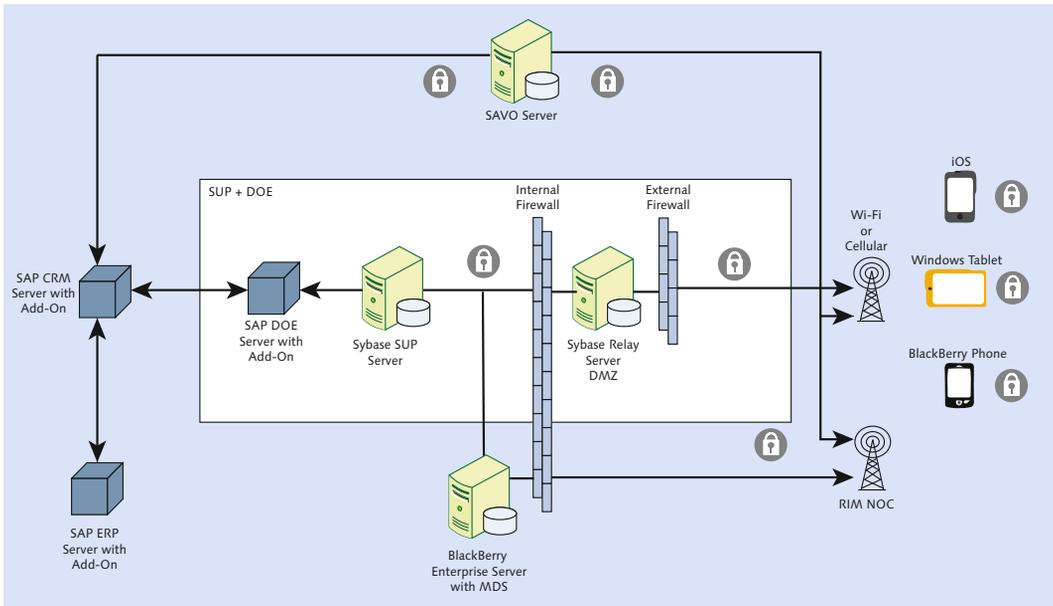


Figure 11.5 SAP CRM Mobile Sales Flow Diagram

SAP Sales Diary for iPad

The SAP Sales Diary for iPad allows an employee to capture notes and log them in the SAP CRM system as accounts, opportunities, and activities. This functionality comes in handy for sales representatives because they can convert the captured notes to the task within SAP CRM system.

Figure 11.6 shows the SAP Sales Diary for iPad architectural flow, which requires the SAP Sales Diary add-on (LWM_CR004) to SAP CRM. SAP Gateway is connected to the Sybase Unwired Platform/SAP Mobile Platform. The relay server acts as a messaging channel that connects to the mobile device.

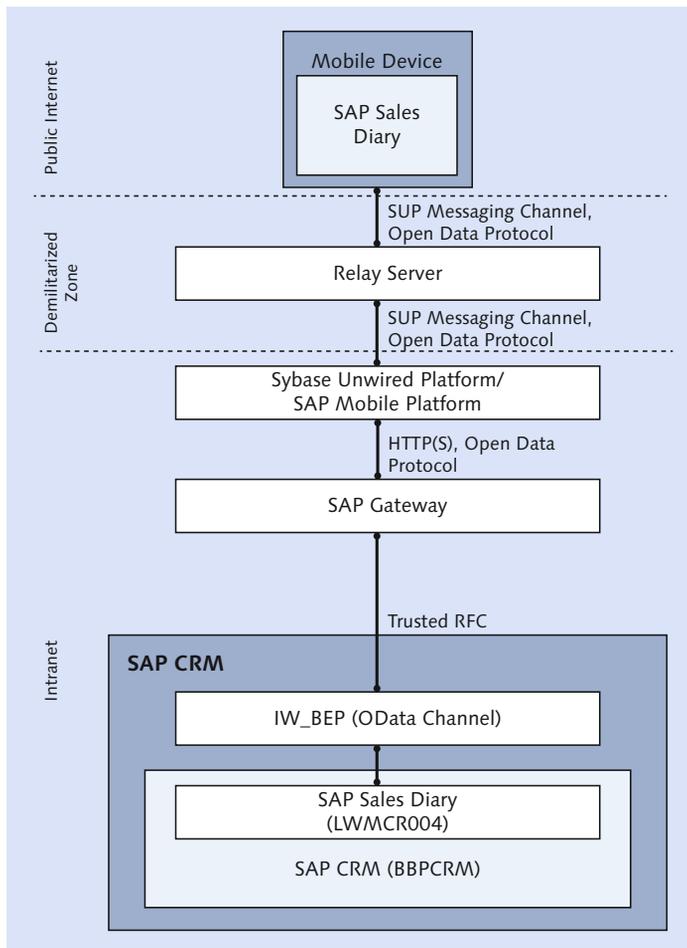


Figure 11.6 SAP Sales Diary for iPad Architectural Flow

SAP Sales Pipeline Simulator for Windows Tablets

The SAP Sales Pipeline Simulator for Windows tablets allows a company to view the sales pipeline of the customer. The sales representative can view the details of the opportunity pipeline and monitor the dates, total revenue, and chance of success of an opportunity. This app provides the opportunity pipeline as a bubble chart that helps sales representative visualize the total revenue of the opportunity pipeline.

Figure 11.7 shows the SAP Sales Pipeline Simulator for Windows tablets architectural flow, which requires the SAP Sales Pipeline Simulator add-on (LWMCRO05) to SAP CRM. SAP Gateway is connected to the Sybase Unwired Platform. The relay server acts as a messaging channel that connects to the mobile device. The supported device for the SAP Sales Pipeline Simulator is Windows 8 tablets.

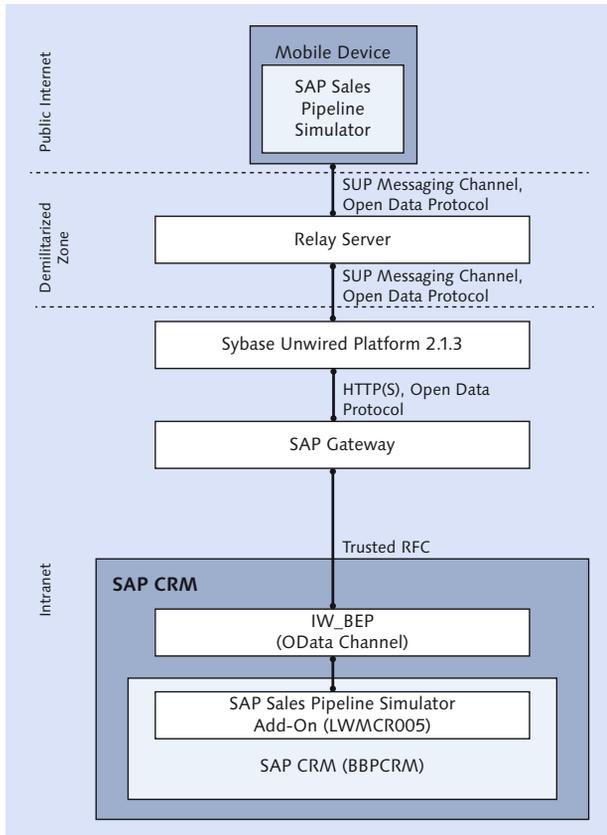


Figure 11.7 SAP Sales Pipeline Simulator for Windows Tablets Architectural Flow

SAP Sales Companion for iPad

Just like the SAP Customer Briefing app (see [Section 11.3.4](#)) and the SAP Sales Diary app, the SAP Sales Companion for iPad app provides even more options in customer analytics. The SAP Sales Companion for iPad app is also powered by SAP HANA. The app also has the benefit of integration with groupware calendars and tasks.

Figure 11.8 shows the SAP Sales Companion for iPad architectural flow, which requires the SAP Sales Companion add-ons (SALECOM1, SALECOM2, and SMOBFND) to SAP CRM. SAP Gateway is connected to the Sybase Unwired Platform. The relay server acts as a messaging channel that connects to the mobile device. The supported device for SAP Sales Companion is the iPad.

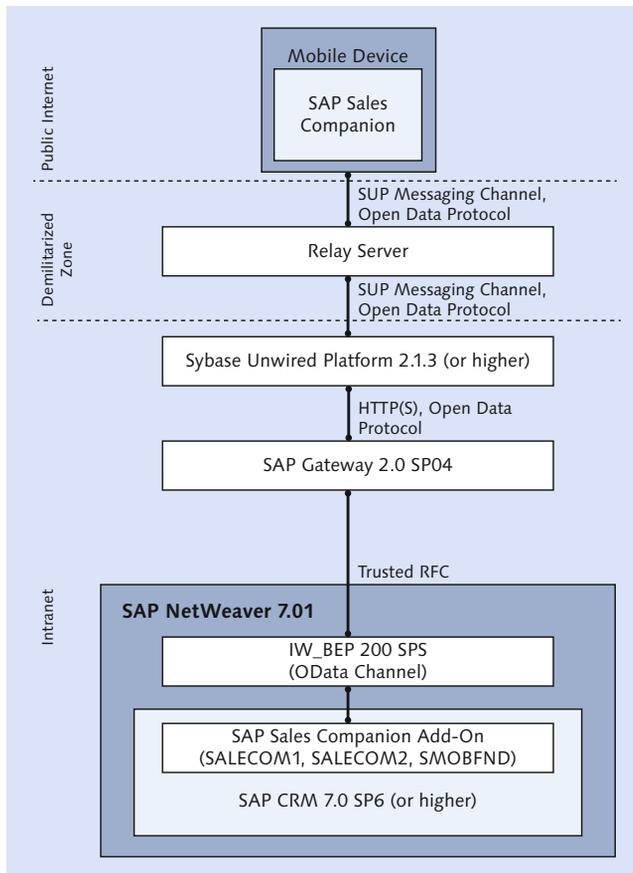


Figure 11.8 SAP Sales Companion for iPad Architectural Flow

11.3.4 SAP Customer Briefing for iPad

The SAP Customer Briefing for iPad allows sales representatives access to information that relates to the customer. This includes information on open activities, opportunities, and display documents that may be important to review when meeting with customers.

Figure 11.9 shows the SAP Customer Briefing for iPad architectural flow, which requires the SAP Customer Briefing add-on (LWMCR003) to SAP CRM. SAP Gateway is connected to the Sybase Unwired Platform/SAP Mobile Platform. The relay server acts as a messaging channel that connects to the mobile device.

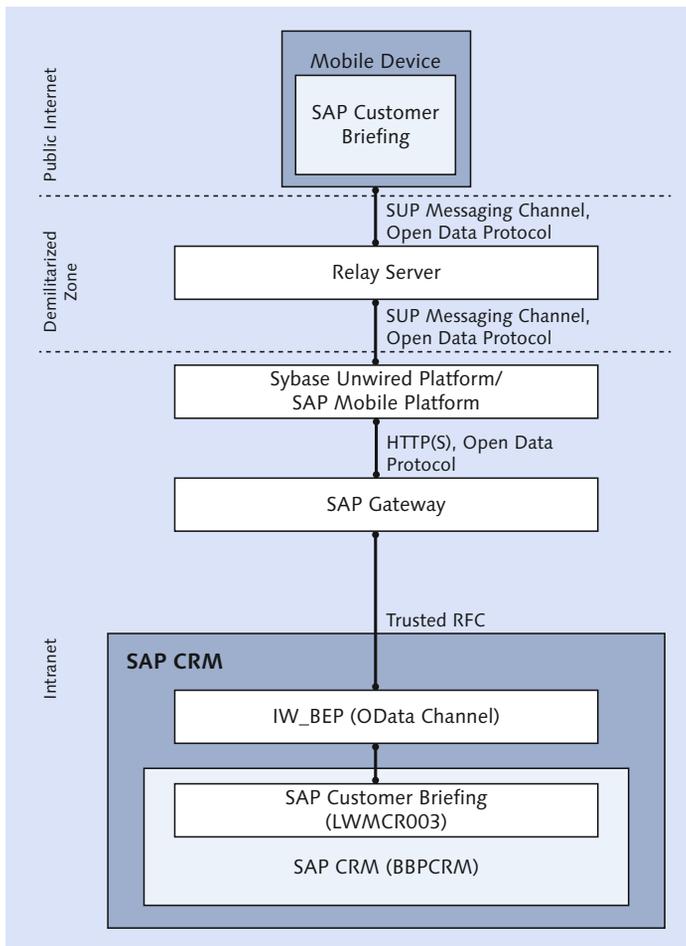


Figure 11.9 SAP Customer Briefing for iPad Architectural Flow

11.3.5 SAP Citizen Connect for iPhone and iPad

SAP Citizen Connect for iPhone and iPad is specifically used in municipality scenarios. If you want to report issues related to debris, potholes, and so on, then you can use the SAP Citizen Connect app to log an issue and get the proper attention in a timely manner to resolve these issues quickly.

This also reduces the overall customer call center activity within the municipality offices, increases efficiency, and reduces overall costs to improve customer satisfaction. It helps to categorize the issue quickly and locate it via GPS.

[Figure 11.10](#) shows the SAP Citizen Connect for iPhone and iPad architectural flow, which requires the SAP Citizen Connect add-on (LWM_CCC) to the SAP CRM system. For SAP Citizen Connect, only SAP Gateway is required to run the mobile application. The relay server acts as a messaging channel that connects to the mobile device.

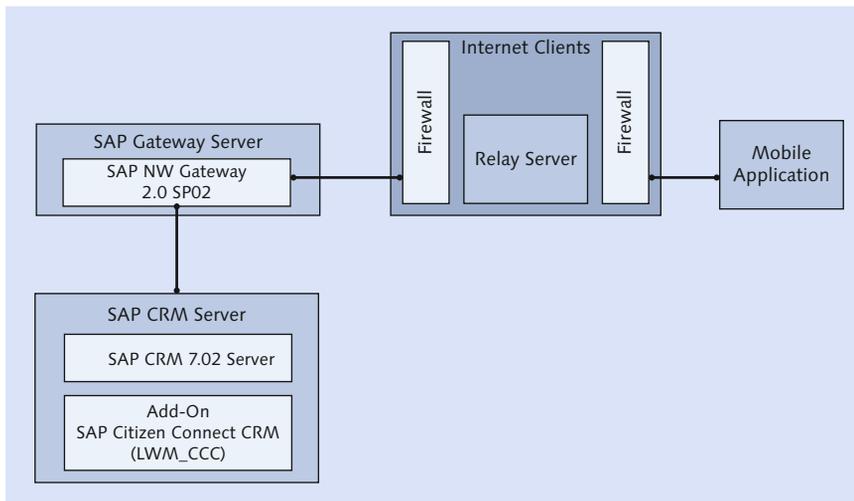


Figure 11.10 SAP Citizen Connect for iPhone and iPad Architectural Flow

11.3.6 SAP Fiori for SAP CRM

SAP Fiori is a new user experience (UX) software that provides responsive, personalized, and easy-to-use applications for any users within an organization. SAP Fiori can be used in conjunction with SAP CRM to provide great UX and increase productivity. The SAP Fiori UI is based on modern design principles that accelerate and boost UX.

SAP Fiori Apps

SAP Fiori provides transactional apps that support different SAP CRM functionalities. These apps are available for the following SAP CRM releases:

- ▶ SAP EHP 3 for SAP CRM 7.0 SPS 8 or higher
- ▶ SAP CRM 7.0 SPS 6 or higher
- ▶ SAP EHP 1 for SAP CRM 7.0 SPS 3 or higher
- ▶ SAP EHP 2 for SAP CRM 7.0 SPS 1 or higher

In the sections that follow, we'll look at the different SAP Fiori apps compatible with SAP CRM.

My Accounts

The My Accounts app helps you search and display the account that you're working on and provides your account information with contacts, appointments, and opportunities in detail. This helps you prepare for any meetings and discussions with customers. You can also share the account in SAP Jam.

The My Account app is only available with SAP EHP 3 for SAP CRM 7.0. This app provides the following features:

- ▶ Create new accounts and edit existing account data.
- ▶ Create contracts, opportunities, tasks, and more for an account.
- ▶ Perform account searches for your personal account, customer accounts, colleague accounts, and corporate or company accounts. You can also filter the account search option by account group.
- ▶ Display account details such as expected opportunity revenue, SAP ERP quotations and sales orders, contracts, tasks, appointments, leads, and more for an account. You can then click on these details to display even more information.
- ▶ Customize the layout of the app to change the order of search columns in the search list, views, and so on.

My Appointments

The My Appointments app helps you create, change, and manage appointments. You can create follow-up appointments, follow-up tasks, and opportunities with this app. The appointment is also synced with the SAP CRM backend.

The My Appointment app provides the following options:

- ▶ Create new appointments with attendees and assigned accounts and contacts. You can also create appoints using multiple transactions.
- ▶ Display the details of an appointments accounts and points of contact.
- ▶ View your calendar and other employee calendars. Within your calendar, you can change the view to monthly, weekly, or daily.
- ▶ Provide notes for an appointment. Notes and other documents can also be attached to appointments.

My Contacts

The My Contacts app helps you manage your contacts by creating the contacts and accessing existing contacts in the SAP CRM backend. You can also view communication data, create follow-up activities, edit existing contacts, and add notes and attachments to the contacts.

Other features available with the My Contacts app include the following:

- ▶ Search and sort capabilities by contact first name, last name, and account name.
- ▶ Edit contact information.
- ▶ Take a quick look at account details and overviews.

My Leads

The My Leads app helps you manage your leads effectively and efficiently. You can add partners and products to the leads. You can edit and view leads that belong to you. You can also add notes and attachment to the leads.

This app includes additional key features such as the following:

- ▶ Have your assigned leads sent directly to you for acceptance or rejection.
- ▶ View and edit parties involved in a lead. You can add, edit, and view the employee responsible for a lead. You can also add and view participants.
- ▶ Add, edit, and remove products.
- ▶ Edit header data.

My Tasks

With the My Tasks app, you can create or change the existing task, which is synchronized with the SAP CRM backend. You can create follow-up tasks,

opportunities, and appointments. You can also display all the tasks that are due today or this week.

Additional important features for this app include the following:

- ▶ View and edit task statuses. You can change your existing tasks and set them to be shown as complete.
- ▶ Create new tasks. These can have specific transaction types assigned to them as well.
- ▶ Search for tasks based on key words, or accounts and contacts connected to the tasks.

My Opportunities

The My Opportunities app allows you to create, edit, and display your opportunities. Like leads, you can manage partners on the opportunity and view competitor information. This helps you connect with your customer effectively and make key decisions when meeting customers. You can add notes and attachments to an opportunity, and you can also share and discuss topics related to an opportunity using SAP Jam.

Additional key features for this app include the following:

- ▶ View, add, or edit the employee responsible for the opportunity.
- ▶ Add or edit participants, and view information on the parties involved.
- ▶ Add, edit, and delete products involved in the opportunity.
- ▶ Create follow-up activities for tasks, appointments, and opportunities.

My Notes

With the My Notes app, you can manage your personal notes while you're visiting customers or during discussions with the customers. You can create, change, or delete the note text. You can also forward notes as an email.

Additional features for the My Notes app include the following:

- ▶ Sort notes alphabetically or by date.
- ▶ Create notes in Activity Management as appointments or tasks. You can also connect with the My Appointments and My Tasks apps.
- ▶ Locate character strings within notes.

Simulate Sales Pipeline

The Simulate Sales Pipeline app allows you to change the expected sales volume, closing date, and chance of success of opportunity. With these attributes, you can simulate the target achievements. Opportunities are retrieved from SAP CRM, and changes within the app are then synced back to the SAP CRM backend.

Additional features of this app include the following:

- ▶ View opportunity details such as contract information, accounts, and so on.
- ▶ Display opportunities by time period and view your opportunity pipeline.
- ▶ Edit opportunity information such as value, end date, and success ratio.

Track Sales Pipeline

The Track Sales Pipeline app helps you view the overall targets achieved by your employees against the set targets. You can also view the top 10 opportunities within your team and the opportunities assigned to the respective employees. You also have the capability to view opportunity by sales organization and filter top opportunities.

Additional key features for this app include the following:

- ▶ Display opportunities by time period.
- ▶ View opportunity details such as account information, employee responsible, and contact information.

SAP Fiori Architecture

[Figure 11.11](#) shows an overview of SAP Fiori's architecture, which requires the SAP Fiori apps to be installed at the frontend server. SAP Fiori apps consists of frontend and backend components. The frontend component is the UI, and the backend component is the OData service connected to the SAP Business Suite backend via SAP Gateway.

SAP UI components for SAP Fiori and SAP Gateway are deployed on the same server. The UI component is an SAP Fiori product that is required to be installed on the SAP NetWeaver AS ABAP, as shown in [Figure 11.11](#). SAP Fiori runs on desktops, smartphones, and tablets. To run SAP Fiori apps, a client (e.g., a browser) should be compatible with HTML5. The information flows from the client to SAP Gateway via OData and then connects to the backend SAP Business Suite.

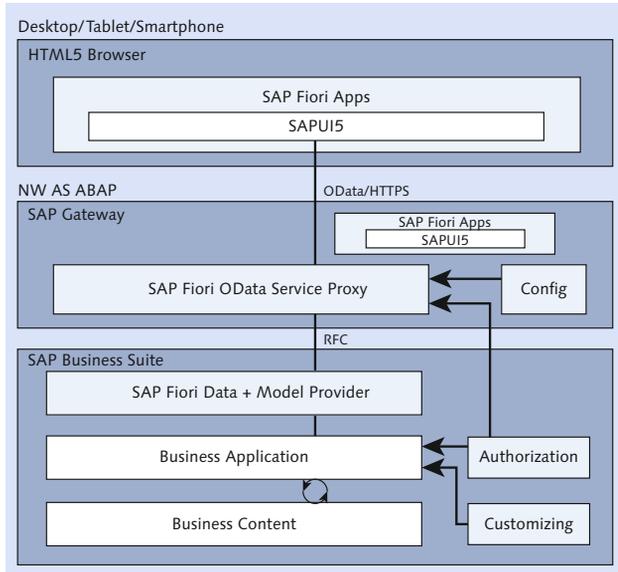


Figure 11.11 SAP Fiori Architecture Overview

Installation of the SAP Fiori UI components, SAP Gateway, and its compatibility with the SAP CRM version should be assessed properly before using and implementing SAP Fiori for SAP CRM.

11.4 Summary

In this chapter, we discussed SAP CRM Mobile and how field representatives can connect with the key information required to communicate and interact with customers. There are different accessibility and implementation options available with SAP CRM Mobile technology and some of the basic functions were described in the chapter. SAP CRM technology can be implemented to suit your business needs and provides different options for implementing mobile solutions.

In the next chapter, we'll dive into SAP CRM's solution to cloud-based functionality: SAP Cloud for Customer.

This chapter describes SAP Cloud for Customer, including its major features, how it fits into SAP's overall cloud and customer engagement strategy, and use cases for deployment with SAP CRM.

12 SAP Cloud for Customer

SAP Cloud for Customer is part of the SAP Customer Engagement and Commerce portfolio (SAP CEC). The key capabilities of SAP CEC include sales, commerce, billing, marketing, customer service, loyalty management, and social engagement. SAP Cloud for Customer complements SAP CRM on-premise. This chapter describes the features of SAP Cloud for Customer and its integration with SAP CRM.

When integrating SAP Cloud for Customer and SAP CRM, you gain several advantages by leveraging both:

- ▶ Packaged integration, with single vendor accountability for your end-to-end value chain
- ▶ Real-time master data synchronization of accounts, account hierarchies, prospects, contacts, territory assignments, competitors, products, and campaign headers
- ▶ Real-time integration of transactional SAP CRM data, such as leads, opportunities, activities, and service requests
- ▶ Lead-to-opportunity process with initiation of an SAP CRM order

SAP Cloud for Customer comprises SAP Cloud for Sales, SAP Cloud for Services, SAP Cloud for Social Engagement, and SAP Digital for Customer Engagement. SAP Cloud for Customer also delivers optional industry solutions for professional services, banking, retail, insurance, and high tech, to name a few.

This chapter describes core capabilities across SAP Cloud for Customer as well as specific SAP Cloud for Sales, SAP Cloud for Services, SAP Cloud for Social Engagement, and SAP Digital for Social Engagement capabilities. We'll also look

at business cases for when to use SAP Cloud for Customer and SAP CRM. Additionally, SAP Cloud for Customer extension capabilities and common integration scenarios will also be described. First, let's look at SAP's strategy for customer engagement and commerce.

12.1 SAP Customer Engagement and Commerce Strategy

SAP's customer engagement and commerce paradigm complements its SAP CRM offering by helping companies reach their customers across multiple channels, devices, and touch points. SAP's solutions for customer engagement include the omni-channel hybris platform, SAP Cloud for Sales, SAP Cloud for Service, and SAP Cloud for Social Engagement; together, these enable B2B and B2C companies to interact with their customers in real-time.

For example, when a customer first purchases your product or service via a web site, you email them information about support and other products and services. The customer responds using Short Message Service (SMS) for support. Later, the customer tweets about his experience or puts a note on your Facebook page. With all the different interactions and touch points, the information and context is consistent regardless of how the customer interacts with your company.

SAP CEC includes four pillars:

- ▶ **Commerce**

The commerce pillar includes hybris Commerce, hybris Product Content Management, hybris Order Management System, and SAP Billing and Revenue Innovation Management (SAP BRIM) (convergent billing software).

- ▶ **Marketing**

The marketing pillar includes hybris Marketing, Loyalty Management, and See-Why.

- ▶ **Service**

The service pillar includes SAP Cloud for Services, SAP CRM, and SAP Jam.

- ▶ **Sales**

The sales pillar includes SAP Cloud for Sales, SAP CRM, and SAP Jam.

This chapter focused on the details of SAP Cloud for Customer only. More details on hybris can be found at www.hybris.com.

12.2 Landscape

The SAP Cloud offerings include cloud platform offerings, private cloud offerings, and SAP public cloud applications. SAP Cloud applications have no on-premise installation and no requirements to install patches, upgrades, and so on. SAP Cloud applications are maintained by SAP Cloud support. As features are added, customers can activate them as needed.

Customers access their cloud application via a URL that is unique to their account: *myXXXXXXX.crm.ondemand.com*. The XXXXXX is replaced with a value unique for each customer. SAP Cloud for Customer is SAP's public cloud solution for customer engagement. It includes applications for enterprises as well as an application for small teams. The SAP Cloud for Customer portfolio is comprised of the following core applications:

▶ **SAP Cloud for Sales**

- ▶ Opportunity management and insight
- ▶ Account management and intelligence
- ▶ Sales performance and effectiveness

▶ **SAP Cloud for Service**

- ▶ Customer service across every channel: email, web, phone, social, SMS
- ▶ End-to-end field service

▶ **SAP Cloud for Social Engagement**

- ▶ Interaction through social channels
- ▶ Integration with Facebook, Twitter, YouTube, and so on

▶ **SAP Digital for Customer Engagement**

- ▶ Simplified cloud customer relationship management for small teams (e.g., fewer than 10 team members), with enterprise-grade capabilities
- ▶ Limited feature set as compared to SAP Cloud for Customer

SAP Cloud for Customer has an extensibility layer for key users to extend their application. Additionally, it provides a Software Development Kit (SDK) and an integration layer to further extend and integrate the application with other cloud or on-premise applications.

SAP Cloud for Customer is quick to implement with average implementation times of 8–10 weeks. With new releases every three months, the product is continually improving and delivering new features. Customer feedback has a direct influence on product development and helps to drive new features.

The product architecture is a cloud multitenancy running on SAP HANA. Customers access SAP Cloud for Customer over the Internet. Each customer receives a tenant. *Tenant* refers to an individual customer instance with a unique URL. A tenant is part of a multitenancy system, meaning that a tenant shares hardware, networking, and computing resources with a system.

When working with cloud applications, the cycle of new features and innovations is much faster than on-premise applications. All deployed software, including upgrades and patches, are managed and deployed by SAP. Customers review the new capabilities and scope the new features they want to use in their tenant. The timing of new capabilities is communicated via several mechanisms:

- ▶ Customers maintain contact information in their tenants. SAP uses the contacts for all communications.
- ▶ The calendar with planned new releases, patches, and all system activity is available from within the tenant.
- ▶ SAP Community Network (SCN) has a dedicated community for SAP Cloud for Customer where information and planned upgrade dates are published and calls about new features are hosted.

Due to the frequency of changes and rapid releases, this chapter focuses on core capabilities on which other features are built. The summary portion of this chapter explains how to get the latest information regarding functions and features.

12.3 Capabilities and Features

SAP Cloud solutions offer a number of capabilities and benefits such as reduced total cost of ownership solutions for smaller number of users, innovation frequency with the cloud release cycles, independence from IT and upgrade/patching cycles, fast deployment and time-to-value, no software or hardware investment, and easy onboarding and offboarding.

SAP Cloud for Customer features a modern UI, strong collaboration and social capabilities, standard analytics, packaged integration to SAP ERP and SAP CRM, and the standard mobile solution that is device agnostic. The benefits of the cloud in addition to the deep capabilities in on-premise lead to several use cases for joint deployments:

▶ **Subsidiary or new division**

You can run sales offices or subsidiaries through cloud solutions with shared master data. This provides consolidated forecasting and reporting capabilities. Other core capabilities such as Territory Management, social engagement, and groupware can provide immediate value to the subsidiary.

▶ **Mobile**

The online and offline mobile capabilities of SAP Cloud for Customer are enticing reasons to deploy SAP Cloud for Customer. Mobile applications can be downloaded from respective stores of hardware vendors immediately to allow business users to be mobile-enabled.

▶ **Cloud-only strategy for cross-company organizations**

SAP Cloud for Customer provides a quick way to move to cloud while leveraging the on-premise business processes.

▶ **Quick Start to SFA in the cloud**

SAP Cloud for Customer provides the option to start quickly with a few key customer-facing capabilities, for example, Sales Force Automation (SFA) or Lead Management, and leave other capabilities, such as service or call center, for a later deployment.

While the SAP Cloud for Customer portfolio includes SAP Cloud for Sales, SAP Cloud for Services, and SAP Cloud for Social Engagement, there are several foundation capabilities that apply to all applications within SAP Cloud for Customer. In this section, we'll look at the key capabilities and features available in SAP Cloud for Customer.

12.3.1 Account Management and Intelligence

Account management and intelligence focuses on providing valuable intelligence so high-value accounts can be easily recognized. These are accounts where you can provide the most value and realize the best results.

Accounts can be corporate or individual accounts. Each account can have multiple contact persons, and a contact can have a relationship with multiple accounts. To help an organization better understand a customer, it's possible to maintain the relationships between accounts and also the relationships of accounts and persons. Some relationship examples include "has a reseller" and "is a distributor of." You'll find that most of the relationship types are standard with SAP Cloud for Customer. However, new relationship types can be easily created. Account hierarchy shows a collection of accounts linked by parent-child relationships. When inspecting an account, you can view the hierarchy, the year to date (YTD) revenue and active pipeline for each child account, and the roll-up values.

The account team management defines a responsible team for the account. This includes designating the account owner and account team members. Custom roles for the account team can be defined.

Accounts can be searched and displayed by responsibility (my accounts, my account team's accounts, my territory team's accounts, all accounts) and in a calendar view by navigating to the accounts and activities on the calendar. Accounts can also be filtered based on account characteristics. All relevant account information can be viewed at a glance, including data from SAP CRM on-premise and SAP ERP on-premise. This includes the customer cockpit and customer fact sheets. You can view social information with the InsideView integration and/or Dun & Bradstreet integration. InsideView provides insights about relationships, business information, contact data, online news, social media, and customer data. Dun & Bradstreet 360 provides relevant, complete insight and sales tools so sales and marketing teams can get more insightful information about the accounts. Accounts can be selected from Dun & Bradstreet and then be replicated in SAP Cloud for Customer as accounts. Other integrations with this feature include Microsoft Outlook, IBM Lotus Notes, and Google Gmail. Additional features such as map views and geo tracking enables accounts to be visualized on Google Maps or Bing Maps. Latitude and longitude fields are also available.

Accounts can be assigned to sales territories to define responsibilities and grant authorizations via Territory Management. Accounts can be assigned to more than one territory, and the territory structure can be adjusted to meet changing sales markets. There is a rule-based determination of territory as well as sales analysis on territory dimensions. In the next section, we take a closer look at what Territory Management entails.

12.3.2 Territory Management

Territory Management enables you to define, create, and realign complex territories all through an easy-to-use UI. You can manage complex territory rules all through one system. Territory definitions can be integrated with SAP CRM. If you have complex realignment rules in SAP CRM, you can do your territory alignment in SAP CRM, and the results can be replicated to SAP Cloud for Customer.

After territories are configured, they can be used to support many functions, including analytics, drilldowns, access restrictions, roles, routing, and so on. Some key features of Territory Management include the following:

- ▶ Territory hierarchy can be used to adjust your territory structure according to the changing sales markets.
- ▶ A territory team with roles allows you to do the following:
 - ▶ Assign the same person to multiple territories with a specific role to support matrix organizations.
 - ▶ Swiftly handle employee reassignments to territories when employees leave or are taking a well-deserved vacation.
- ▶ The same account can be assigned to one or more territories with indirect assignment in account teams.
- ▶ Account attributes can be used to define account assignment rules and define who owns what. They can also be used to define workflow to derive a territory when creating and saving an account.
- ▶ Named accounts, territory overrides, and exceptions to rules are included.
- ▶ Rule-based realignments can be used to redetermine territory in an account and business documents (e.g., leads and opportunities). Rules are defined based on account attributes, which enables quick and easy realignment of territories to ensure optimal sales market coverage.
- ▶ Sales analysis uses territory dimensions.
- ▶ Authorization and data access are based on territory hierarchy.
- ▶ A complex sales territory structure includes SAP ERP sales organization mapping.

12.3.3 Mobile

Mobile is a primary UI for business users. SAP Cloud for Customer is intended to be used on mobile devices for all business users. Configuration and administrative tasks are performed using the desktop. SAP Cloud for Customer UIs include a responsive UI based on SAP Fiori that adapts to different devices, HTML5, and some legacy Silverlight for administration functions. This responsive UI is device agnostic and responds automatically to window size. For example, when moving from the desktop to the smartphone, the UI automatically does a form-fit. The following are major capabilities used by customers on mobile devices:

- ▶ Tablet access
- ▶ Smartphone access
- ▶ Offline read, create, and update
- ▶ Mobile dashboards and key performance indicator (KPI) monitor
- ▶ Advanced mobile analytics with multilevel drilldown
- ▶ Metadata-driven mobile extensibility

For the latest update on what devices are supported, features available with offline access, and any device restrictions, please see the security guide at <https://service.sap.com/cloud4customer>.

12.3.4 Analytics

Conversations about SAP Cloud for Customer often start with analytics and insights. In this section, we'll walk through some of the analytic features provided with SAP Cloud for Customer.

KPI Monitoring

Key performance indicators (KPI) are provided by SAP. Additional KPIs can be added as well and built on top of reports. KPIs are then linked to the home page and provide easy drilldown into detailed analysis for actionable insights. When building KPIs, there is a pattern selection available for best representation of analytics.

Figure 12.1 shows an example of the KPI view from the home page.



Figure 12.1 Key Performance Indicator View from the Home Page

Interactive Dashboards

Interactive dashboards are easy to consume and configure via a guided wizard. Interactive dashboards are created on top of existing reports. Before creating a custom dashboard, you should decide which reports you want to include as charts. You also need to consider how you want the charts to respond when the user selects a data element in a linked chart. You should be familiar with reports and report variants. After you're ready to create the dashboard, the wizard will first ask for information such as the name, business role it should be assigned to, reports to include, and the navigation point between the reports. You then adjust the layout and position the tiles to create the look and feel of the dashboard.

Advanced Analytics

Web-based advanced analysis patterns in the browser enable functions such as drilldown, sorting, defining exceptions and conditions, managing views, and selection.

The Microsoft Excel add-in enables analysis over Microsoft Excel with live data from the cloud. It allows you to log in directly to SAP Cloud for Customer, and

then open, use, and save workbooks. [Figure 12.2](#) shows the SAP Cloud for Customer add-in within Microsoft Excel.

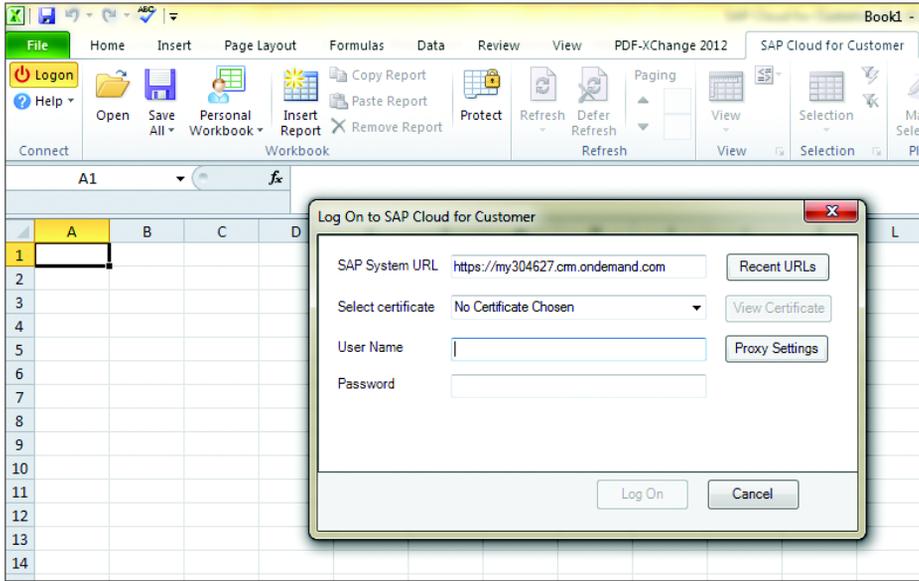


Figure 12.2 Excel Add-In for SAP Cloud for Customer

Extensibility and Administration

The extensibility and administration key features allow you to create and publish customer reports on standard delivered or custom data sources. You can create custom data sources by joining multiple sources and defining the calculated and restricted measures. This capability allows you to customize your dashboards, publish to other users, and connect with Microsoft Excel for creating and publishing workbooks. Additionally, you can add extension fields in standard and custom reports.

Analytics Integration

When integrating analytics information, there are three options:

- ▶ **Consume external analytics using mashups**

This scenario is commonly used when you want to consume an external report in SAP Cloud for Customer. The external system, for example, SAP Business

Warehouse (SAP BW), provides a URL for the report. SAP Cloud for Customer consumes the URL to view the report in SAP Cloud for Customer.

▶ **Reporting data transfer outbound**

In this scenario, data is transferred outbound to an external analytics system via an Operational Data Provider (ODP) data source in SAP Cloud for Customer.

▶ **Reporting data transfer inbound**

In this scenario, a web service is called from SAP Cloud for Customer to load data into SAP Cloud for Customer. When using SAP BW, it's done using the open hub destination.

12.3.5 Groupware

Groupware integration allows sales representatives to easily link their appointments, emails, and tasks with their accounts in the SAP Cloud for Customer system, keeping interactions with the customers up to date. Standard groupware integration includes integration with Microsoft Outlook, IBM Lotus Notes, and Google Gmail.

To integrate with Microsoft Outlook and IBM Lotus Notes, add-ons are required. These can be downloaded from the SAP Cloud for Customer download area within your tenant.

Microsoft Outlook and IBM Lotus Notes Integrations

As stated previously, SAP Cloud for Customer can integrate with Microsoft Outlook and IBM Lotus Notes. Features of this integration include the following:

- ▶ Integrate client-side groupware via plug-in (server-side integration available from Riva, an SAP partner).
- ▶ Integrate with bidirectional updates of contacts and activities (appointments, visits, and tasks).
- ▶ View leads, opportunities, sales quotes, campaigns, and activities for selected contacts.
- ▶ Easily associate emails with SAP Cloud for Customer transactions.
- ▶ Direct access to transactions in SAP Cloud for Customer from groupware.
- ▶ Search contacts and accounts in SAP Cloud for Customer.
- ▶ Create and update contacts and tasks in offline mode.

Google Gmail Integration

Using the add-in for Gmail in Google Chrome, you can leverage tools you use every day to be more productive. This extension connects Gmail to SAP Cloud for Customer and provides a quick view of all sales information when emailing prospects and customers. It allows you to link email conversations, search for duplicate contacts, and create new leads, opportunities, tasks, and visits, all directly from Gmail.

Key features include the following:

- ▶ Linking emails to an existing account or opportunity and keeping all customer conversations in sync
- ▶ Seeing all related leads and opportunities based on the sender's email
- ▶ Searching for duplicate contacts before creating new ones
- ▶ Generating new leads and opportunities
- ▶ Creating new tasks or visits as a follow-up to an email action item

Having now looked at the capabilities and features offered by core SAP Cloud for Customer, let's consider some of the main applications and pillars of SAP Cloud for Customer.

12.4 SAP Cloud for Sales

SAP Cloud for Sales provides core Sales Force Automation (SFA) capabilities. It then differentiates with insights, packaged integration, advanced mobile UIs, and industry capabilities. This section focuses on some of the capabilities SAP Cloud for Sales provides.

12.4.1 Opportunity Management

Opportunity Management in SAP Cloud for Customer is used to accurately characterize business opportunities and gain visibility into pipeline health. A sales opportunity has many facets of information. [Figure 12.3](#) shows the overview of an opportunity in SAP Cloud for Sales. You can also view the collaboration feeds, sales documents, related activities, competitors, sales team, and other information that is relevant for the sales opportunity. Users can personalize the view to show the related information most important to them.

The screenshot displays the SAP Cloud for Sales HTML5 user interface for an Opportunity record titled "Kids Cruiser Bikes". The interface is divided into a left-hand sidebar with detailed opportunity information and a main content area with summary tables and navigation tabs.

Left Sidebar (Opportunity Details):

- Account: Big Wheels
- Name: Kids Cruiser Bikes
- Primary Contact: Ashley Frazier
- Source: Campaign
- Status: Won
- Reason for Status: Won due to product
- Sales Cycle: General opportunity
- Sales Phase: Quotation
- Days in Sales Phase: 325 Days)
- Probability: 100%
- Expected Value: 1,000.00 USD
- Total Negotiated V.: 0.00 USD
- Weighted Value: 1,000.00 USD
- Start Date: 08/15/2014
- Close Date: 08/15/2014
- Publish to Forecast:
- Forecast Category: Pipeline
- Category: Prospect for Product Sales
- Progress: Not Relevant

Main Content Area (Summary Tables):

Navigation tabs: OVERVIEW (selected), FEED, PRODUCTS, SALES DOCUMENTS, SALES ACTIVITIES, COMPETITORS, SALES TEAM < > ...

SALES TEAM

Role	Name	E-Mail
Employee Responsible	Shawn Constantino	

PRODUCTS

Product	Description	Product Category	Quantity
A-0016	24" Men's 7 Spee...	Mountain Bikes	30 Each

CONTACTS

Name	Primary Contact	E-Mail
Ashley Frazier	Yes	

LEAD

Name	Account	Created On	Source
Kids Cruiser Bikes	Shawn Constantino	08/15/2014 10:36...	Campaign

Figure 12.3 Opportunity Viewed in the HTML5 User Interface

Key capabilities in opportunities include tracking and integration with sales methodologies such as Miller Heiman. Rules can be used to distribute opportunities. Opportunities have many types of relationships and follow-on documents. Relationships include products, sales team, activities, competitors, related opportunities, and so on. Opportunities can also be linked to surveys and include embedded survey capabilities. Of course, they are also used for pipeline management and revenue scheduling.

Opportunities are integrated bidirectionally with SAP CRM. SAP CRM opportunity integration includes opportunity attachments. SAP Cloud for Customer opportunities can create a quote, order, quote inquiry, or order inquiry on SAP ERP. Opportunity pricing can use the latest pricing in SAP ERP.

12.4.2 Quotation Management

Flexible quoting capabilities enable you to deliver compelling offers, provide consistently accurate pricing, and streamline the sales process. Quotation management has similar features to opportunities. Unique capabilities for quotation management include the following:

- ▶ Customer-specific product lists
- ▶ Support of configurable products (through integration)

- ▶ Mobile table support, including digital signature capture
- ▶ Deep pricing integration with SAP ERP and SAP CRM

The pricing integration as part of quotation management looks at the pricing conditions in SAP CRM and allows the sales representative to apply discounts. [Figure 12.4](#) shows the process flow for the external pricing using SAP CRM to price quotes in SAP Cloud for Customer.

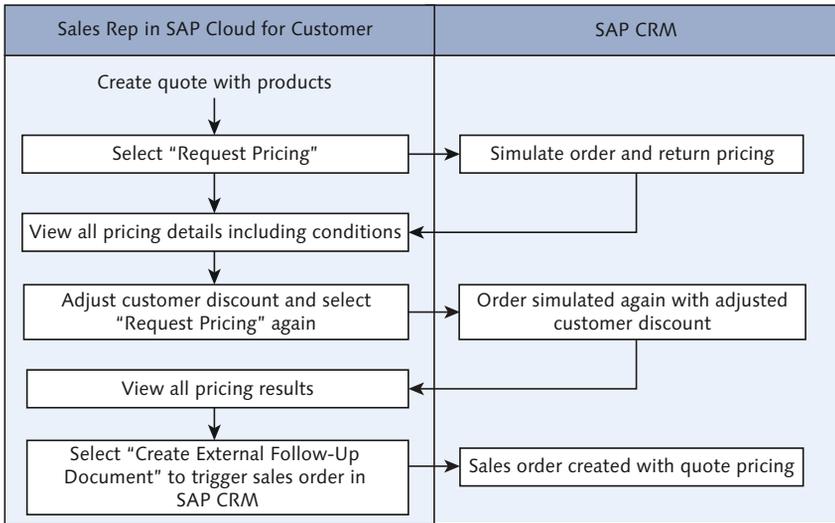


Figure 12.4 Quote External Pricing with SAP CRM

The quote is created in SAP Cloud for Customer. SAP CRM simulates the order and returns the pricing. After the sales representative adjusts the quote, SAP CRM simulates the order again and adjusts the pricing, returning a final price. SAP Cloud for Customer then triggers the creation of the sales order in SAP CRM with the quote price from SAP Cloud for Customer.

12.4.3 Visit Planning and Execution

Visit planning and execution enables field sales personnel to plan and record site visits and activities while on site at the account. Visit planning is common in many industries. One example is in retail. A sales representative visits a store and fills in a survey based on the visit. Survey results can trigger specific actions that need to be taken. For example, if a visit from a sales representative reveals a customer's

dissatisfaction with a product, this is recorded by the sales representative. If it can't be fixed during the visit, follow-on actions are taken to resolve the problem.

When a sales representative is visiting many customers in a day, visit planning and execution ensures that the value of the visit is maximized, from planning the route to what should be discussed during the visit. A smartphone or tablet becomes a personal itinerary planner.

The visit and planning execution process includes three aspects:

► **Visit administration**

Visit administration includes the following features:

- Survey definition
- Flexible activity planning and routing to enable definition and assignment of tasks and surveys to be performed in an account
- Enhanced account 360 views with recommended visit frequency and visit history
- Product lists to determine account-specific product proposals
- Enhanced reporting on survey answers, visits, and visit tasks

► **Visit planning**

Visit planning includes the following features:

- Map-based visit planning with integrated calendar view in browsers and iPads
- Rule-based determination of recommended tasks and surveys from the activity plans and routine rules
- Ability to select tasks and surveys to be completed in visit
- Offline capability

► **Visit execution**

Visit execution includes the following features:

- Check-in/check-out of visit
- Adding/completing tasks and surveys
- Capture of pictures to attach to survey results
- Creation of follow-up quotes, orders, opportunities, service tickets
- Easy quote creation with product lists

The use of visits is all scoped and configured within activity management.

12.4.4 Activity Management

Activity management is used to record interactions with customers as well as any internal work specifically done toward meeting goals. The activity provides the history of interactions for the sales representative. It also creates transparency to other sales team members working on the same account. Supported activity types in SAP Cloud for Customer include appointments, tasks, phone calls, and emails.

Key capabilities of activity management include the following:

- ▶ Notes or message area for participants
- ▶ Attachments
- ▶ Statuses (Open, In Process, Complete)
- ▶ Reference an account and contact
- ▶ Reference a lead or opportunity
- ▶ Integration with Microsoft Outlook, IBM Lotus Notes, and Google Gmail
- ▶ Quick create activities
- ▶ Flag and favorite activities
- ▶ Mobile access to activities
- ▶ View change history
- ▶ Differentiate activities by document type
- ▶ Feed updates when new activity created or updated

This section has provided an introduction of a few of the core capabilities for SAP Cloud for Sales. In the next section, we'll move on to SAP Cloud for Services.

12.5 SAP Cloud for Services

The goal of customer service is to help customers get the maximum value from the product or service they have purchased. Sophisticated customer service organizations don't operate to only answer questions from customers but are proactive and anticipate the needs of their customers. The simple goal is to exceed customer expectations and to drive the best customer service in each respective industry. SAP Cloud for Services has three major capabilities:

▶ **Omni-channel customer support**

Omni-channel customer support drives advocacy, provides a choice in the way an organization offers support, enables companies to be one step ahead, and allows proactive communication.

▶ **Field service management**

Field service management equips your field agents with the right insight. It optimizes operations and scheduling and reduces delivery costs.

▶ **Social media and engagement**

Social media is used to listen to your customers, engage your customers on their terms, respond in real time to critics and brand advocates, and strengthen brand perception.

With these capabilities, organizations can walk through the service process, which includes the following:

1. Incoming communications
2. Processing
3. Resolved issue
4. Respond
5. Close

Next, we'll look at each step of this process in detail.

12.5.1 Incoming Communications

The service process usually begins with an incoming customer communication, which means different communication channels of contact must be supported. The following channels are supported with SAP Cloud for Services:

▶ **Email**

Companies using SAP Cloud for Services can expose to customers several different email addresses, for example, `help@yourcompany.com`, `salesinformation@yourcompany.com`, and `productname1@yourcompany.com`. For each address, the company must evaluate whether to use the B2B or B2C process (based on master data policies) and set up email forwarding accordingly. For each address, the administrator can configure different routing, default customers, and branding templates.

► **Phone**

SAP delivers the SAP Cloud for Customer Computer Telephony Integration (CTI) client adapter and the Live Activity pane in the SAP Cloud for Customer application. The CTI desktop client can be from the SAP Contact Center solution or provided by equivalent third-party CTI vendors.

► **Chat**

Chat starts with a customer sending a message on social media, such as Twitter, Facebook, or via email. The agent responds with a chat URL and requests that the customer initiate a chat session. The customer then clicks on the chat link. The chat is routed to the agent who is processing the ticket or to another agent from the team. The agent chats with the customer and tries to resolve the problem reported. The agent may also update information on the customer record on a ticket. At the end of the chat, the ticket is updated with the chat transcript.

► **Social media**

Social media functionality includes integration with Facebook, Twitter, Bitly, Knowledge Base, and Klout. Social media channels are used to directly create tickets. Agents can respond to questions and posts via social media channels.

► **Self-service portal**

The self-service portal reduces the cost of service by deflecting customers from live support channels. It empowers customers to solve their own problems by providing them access to the knowledge base on a self-service support portal. Service can be improved by allowing customers to create and track service tickets and register products.

► **SMS**

Customers can create tickets via SMS. Agents then respond to the ticket.

12.5.2 Processing

After the customer contact, certain steps are applied either automatically by the system or manually by someone in the customer service organization to make sense of the customer communication and create the relevant context.

The processing capabilities are broad. They include text analysis, work distribution, workflow, service levels, service categories, Warranty Management, registered products, Installed Base (IBase), activity planner and surveys, work ticket management, work ticket visit scheduling, as well as others. Two of the most important of those capabilities include the following:

▶ **Work distribution**

Work distribution routes tickets to the right team or all the way to the right agent. Routing can be based on territories, customer categories, country, product category, service category, priority, escalation status, and more.

▶ **Service levels and service categories**

Service levels are used to specify the performance objectives of the service provider for delivery of the service itself. Service categories answer the question, "what is the reason for the call." This describes the product problem. Service levels and categories are configured in SAP Cloud for Customer and can be used for routing, resolution, and analytics.

12.5.3 Resolve Issue

A critical step in the overall process is the actual resolution of the item that caused the customer to contact the organization in the first place.

12.5.4 Respond

After the agent has completed the steps needed to resolve or attempt to resolve the customer issue, the system has the flexibility to respond either in the original communication method or to switch to a new, more appropriate communication method. The agent uses collaboration, communication channels, and knowledge articles to drive toward a resolution.

12.5.5 Close

As with most other processes, this is typically the point where individuals, managers, or teams can reflect on whether the process can be improved. The system supports this process through analytics that instrument the entire process to provide feedback to the organization on how it is executing to its own performance goals or benchmarks.

12.6 SAP Cloud for Social Engagement

SAP Cloud for Social Engagement enables intuitive customer engagement across social and tradition channels. It enables you to select the right channel for responses, whether public or private social media, email, web, chat, or phone.

One example of how this is used is with SAP Cloud for Services. In the previous section, various channels were described on how to manage incoming communication. These channels are all available via social engagement.

SAP Cloud for Social Engagement leverages routing and escalation rules to ensure that posts are always handled by the right person. The SAP Cloud for Customer social media features are based on using social channels such as Twitter, Facebook, and YouTube. It also may include partners such as Bitly to shorten URLs in an SAP Cloud for Services scenario, and Klout to determine social media influence on a Twitter handle. Collaboration scenarios are based on SAP Jam for collaborating, for example, collaborating on opportunities.

Let's consider a social media integration scenario where a customer posts a question or comment on Twitter and includes your organization's Twitter handle. This interaction creates a ticket in SAP Cloud for Services. Routing rules can be set up to determine how the ticket should be routed. An agent is assigned to the ticket and responds via the Twitter handle. Based on the known information and the required actions, the agent could also link to knowledge articles or require an on-site service, email, or call to resolve the issue.

Twitter, Facebook, and other custom channels are part of the standard configuration within SAP Cloud for Customer. In the configuration, you determine whether you want to support direct Facebook or Twitter messages, as well as how messages should be handled. You can also integrate with branded communities, such as Bazaarvoice.

In addition to social integration, SAP Cloud for Customer provides collaboration using native feeds and SAP Jam. SAP Jam groups can be created in the context of accounts, opportunities, and service requests. It facilitates collaboration to help speed up sales cycles, increase customer and employee engagement, and reduce training costs. Some examples of SAP Jam collaboration include the following:

- ▶ Account management done in SAP Cloud for Sales and collaborated in SAP Jam
- ▶ Opportunities and sales cycles created in SAP Cloud for Sales and collaborated in SAP Jam
- ▶ Service tickets based on service agreements processed in SAP Cloud for Services and collaborated in SAP Jam

Now that we've looked at the enterprise core capabilities on SAP Cloud for Customer, let's look at a smaller version of SAP Cloud for Customer targeted to very small groups or individuals.

12.7 SAP Digital for Customer Engagement

SAP Digital for Customer Engagement is a version of SAP Cloud for Customer intended for small teams, so it has a limited feature set as compared to SAP Cloud for Customer. This feature set isn't discussed here in detail because it's updated several times a year. Visiting www.sapstore.com is the best way to keep updated on what specific features are available. SAP Cloud for Digital Customer Engagement has these unique features:

- ▶ Start with a trial using your email ID.
- ▶ Converts to monthly subscription via credit card.
- ▶ Migration path to full SAP Cloud for Customer.
- ▶ The features listed are unique because most SAP products require an actual sales representative, either from SAP or a partner, and a formal contract. This software is intended for very few users that purchase with a credit card.
- ▶ SAP Cloud for Digital Customer Engagement has the same UI as SAP Cloud for Customer and still runs on SAP HANA. It has all the same core platform capabilities, with more limited functional capabilities. After using SAP Digital for Customer Engagement, you can easily upgrade to SAP Cloud for Customer if you decide to.
- ▶ Now that you have a basic understanding of the major application features, you're ready to learn more about the extensibility and integration features.

12.8 SAP Cloud for Customer Extensions

Every customer customizes the look and feel of SAP Cloud for Customer based on business needs. In addition to branding changes, most customers request additional fields, changes to field labels, and additional business logic or new capabilities. SAP Cloud for Customer provides all of this through personalization, adaptation, the SDK, and Application Programming Interfaces (APIs).

12.8.1 Personalization

SAP Cloud for Customer allows business users to personalize how their UI should look. For example, a user might display a field that is hidden by default or hide a field that isn't needed.

Individual users can also personalize the information they want to see. For example, when viewing accounts, there are various tabs available for contacts, account team, opportunities, and so on. Although many tabs are available, only a few are shown by default. The business user can personalize which ones should be visible. Many companies allow personalization, but many don't. Companies who don't allow it are concerned about help desk tickets. When someone calls for help, the help desk may not be able to help if every user's UI is different. Others allow personalization, and the internal help desk can use screenshots from the incident or a screen sharing tool to help the user.

12.8.2 Adaptation

Adaptation moves beyond personalization. With adaptation, you can make changes similar to what you can do in personalization, but the changes apply to all users, not just individual users. You can also add fields and even business objects. Adaptation is normally performed by a key user. This role is analogous to someone on-premise who does the IMG configuration, or someone who does workflow design or rules. A key user understands what is being implemented and is familiar with technical concepts and how the application works but isn't a software developer.

Adaptation includes the following capabilities:

- ▶ **Extensibility**

Extensibility enables you to add, edit, or remove custom fields. When new fields are added, the related web service (API) is also extended with the new field.

- ▶ **Master layout**

The master layout is the default layout for users. You can adapt this as a base layout for all business users. This includes the following:

- ▶ Define search queries.
- ▶ Reorder and relabel fields and facets.

- ▶ Change field properties, for example, make a field read-only, mandatory, or hidden.
- ▶ Change facets, and even make some invisible.
- ▶ **Page layout**

Page layouts are a subset of the master layout. They can vary by line of business, role, geography, and so on. It's important to understand that if a field is hidden in the master layout, it can't be unhidden in a page layout. The master layout applies to everyone, and you can have many page layouts based on the same master layout. For example, in the master layout for accounts, you have multiple page layouts such as one layout for all sales managers and another layout for all sales representatives. You might also have a layout for the Americas, one for Europe, one for Asia, and so on. Within page layouts you can do the following:

 - ▶ Change field properties, for example, make a field read-only, mandatory, or hidden.
 - ▶ Change facets, and make some invisible.
 - ▶ Assign page layouts to achieve dynamic UIs based on a business role or business process.
- ▶ **Code list restrictions**

Restrict the dropdown values of a field based on the value of other fields or on business roles of the logged-on user.
- ▶ **Workflow rules**

Create notifications, send emails, and update fields when conditions are met.
- ▶ **Mashup authoring**

Enable mashups (UI integration) for integration with external applications.
- ▶ **Language adaption**

Change field labels and menu items to your own terminology.
- ▶ **Custom object**

Create your own custom objects, UIs, data sources, Web Services, and queries.

The adaptation layer is enhanced with every release. The goal is to push as much adaptation to the key users as possible, reducing the need for software developers to write code using the SDK.

12.8.3 Software Development Kit and SAP HANA Cloud Platform

The SDK of SAP Cloud for Customer is called *SAP Cloud Application Studio*, and it enables partners and customers to adapt and enhance the product. The SDK is required any time business logic needs to be added. For example, if you add a custom field called `BONUS`, this can be done using the adaptation tools. The value for `BONUS` needs to be calculated using additional business logic that needs to be done in the SDK. SAP Cloud Application Studio has a workbench that is downloaded from the SAP Service Marketplace. You then connect the SDK to your tenant, and you can begin development.

The following are key features of the SDK:

- ▶ Business configuration so new development can be scoped and configured in SAP Cloud for Customer
- ▶ Creation of new business objects and related business logic and UIs
- ▶ Extension of SAP business objects, including UIs, APIs, and business logic
- ▶ Enhancements that allow you to change standard behavior without modifying the standard solution

For customers or partners who want to develop new capabilities and solutions on their own that will integrate to SAP Cloud for Customer, SAP HANA Cloud Platform is the recommended development environment. For example, you want to add a bonus rating and calculation application that considers performance reviews, forecast, opportunities, and other information from SAP Cloud for Customer. This is a new application that needs to integrate with SAP Cloud for Customer. In this example, the new application is developed using SAP HANA Cloud Platform and integrates with SAP Cloud for Customer.

Another example is that you add a `BONUS` field to SAP Cloud for Customer. You calculate the bonus based on closed opportunities or quotes. In this example, SAP Cloud for Customer is being enhanced, and this development should be done using the Cloud Application Studio.

12.8.4 SOAP and OData APIs

All custom objects and custom fields can be easily consumed using SOAP or OData. All standard SAP APIs are documented at <http://help.sap.com/cloud4customer>. APIs can be used for application integration or UI integration. Examples of application

integration are discussed in the following section with integration to SAP on-premise applications. UI integration is also common and often uses OData. SAP Jam integration is an example of a UI integration.

Historically, SOAP APIs have been used for application-to-application integration. The integration to SAP ERP and SAP CRM is based on SOAP APIs. A transition to Representational State Transfer (REST) services, such as OData, is occurring because REST services are less complex in their structure than SOAP services. A REST message just has the body as data. Mobile applications, for the most part, have transitioned to REST-based services.

New OData services in SAP Cloud for Customer can be created without any development by using the OData Service Explorer. For example, you could create a new object using the Custom Object Builder, and use the OData Service Explorer to create a new OData service.

The most common use cases of OData in SAP Cloud for Customer today are the following:

- ▶ Extension applications on SAP HANA Cloud Platform
- ▶ SAP Cloud for Service support portal
- ▶ Customization of support portal

Now we'll look at integration in more detail, focusing on integration of SAP Cloud for Customer with SAP CRM and SAP ERP.

12.9 SAP Cloud for Customer Integrations

SAP Cloud for Customer was built with integration as a core feature. This section focuses on packaged integration to SAP ERP and SAP CRM. However, SAP Cloud for Customer has integration with the following as well:

- ▶ **Social channels**
Facebook, Twitter, Snap Engage, Bitly
- ▶ **Groupware**
Microsoft Outlook, IBM Lotus, Google Gmail, Riva
- ▶ **Accounts**
Dun & Bradstreet, InsideView, Marketo, Google Maps, Who@

- ▶ **Sales and marketing**

Revegy, Avention, ABBYY, Fan Appz, Miller Heiman, rFactr

- ▶ **SAP applications**

SuccessFactors Employee Central, SAP Jam, hybris Commerce

This is only a partial listing that grows with every release. The integrations are based on SAP Cloud for Customer APIs. APIs are an integral part of SAP's cloud integration strategy.

SOAP and OData APIs

Documentation on the SOAP and OData APIs can be found at <http://help.sap.com/cloud4customer>.

Cloud applications can offer clear benefits to organizations. Although it's tempting to see these applications as plug and play, the reality is that you'll have to create information silos unless you integrate cloud applications with your existing applications landscape (on-premise or cloud). Consistent data is the foundation for trusted information and is needed at all steps in a business process to provide consistent analytics and reporting. In addition, there's a pressing need by many organizations to provide mobile device support and collaboration features with the unified data that both on-premise and cloud applications contribute. Having automated integrations not only provides information consistency but also allows for more efficient workflows to be constructed that cross application boundaries.

To provide standard integration with cloud applications, SAP has a three-pronged integration strategy approach:

- ▶ **Open APIs**

All cloud applications must provide APIs that enable integration to the cloud application. With SAP Cloud for Customer, this is done using SOAP and OData APIs. Leveraging the APIs, you can access the application for any integration scenario.

- ▶ **Packaged integrations**

Integrating cloud applications to on-premise or other cloud applications can be costly to implement in both time and effort. It's critical to have a deep understanding of both the business processes and data structures of all integrated applications. SAP Cloud for Customer has invested heavily in packaged integrations that can be implemented quickly.

For example, a sales representative is meeting a customer to discuss products and pricing. The sales representative needs to provide a quote for the customer that leverages all customer discounts, pricing conditions, product substitutions, and other relevant information from SAP ERP or SAP CRM. This is a common scenario for customers integrating SAP Cloud for Customer to SAP ERP or SAP CRM. A packaged integration flow for external pricing takes into account the customer-specific pricing in SAP ERP, including but not limited to credit limit check, free goods, Available to Promise (ATP), material substitutions, and pricing discounts. With packaged integration, the customer is still able to configure the scenario but doesn't need to worry about how the processes and data are aligned between the applications. SAP has provided this within the packaged integration content.

► **SAP HANA Cloud Integration**

When integrating applications, middleware is often used to manage the integration. Historically, SAP has provided on-premise middleware such as SAP Process Orchestration and SAP Data Services.

SAP HCI enables SAP's deep integration expertise in the cloud. It ensures your hybrid scenarios and cloud-to-cloud integration scenarios are integrated via cloud middleware where SAP ensures the middleware is maintained, upgraded, and ready for execution. SAP HCI enables you to extend the SAP packaged integration to meet your specific requirements.

When integrating SAP Cloud for Customer with SAP ERP or SAP CRM, standard packaged integration are provided with SAP PI, SAP PO, and SAP HCI.

The decision to use SAP HCI, SAP PO, or SAP PI really depends on your business needs and the system architecture of the customer. SAP HCI was developed for customers who want to integrate but don't have expertise with SAP's on-premise middleware.

SAP Cloud for Customer recommends that you use SAP PO for integration in the following situations:

- You actively use SAP PO today.
- You're on at least release SAP PI 7.11 and updated on support packages.
- Your primary integration scenarios are cloud to on-premise.

SAP Cloud for Customer recommends that you use SAP HANA Cloud Integration for integration in the following situations:

- ▶ You don't actively use SAP PI today.
- ▶ You don't want to install any on-premise middleware but would rather have the middleware runtime in the cloud.
- ▶ Your integration scenarios include cloud to cloud.

SAP's cloud integration strategy starts with cloud applications providing open APIs. The APIs can be leveraged with SAP HCI. Finally, the packaged integration provides deep insight into business processes and ensures your cloud applications don't become a siloed application. Additionally, as SAP Cloud for Customer grows, integration to SAP applications is part of the roadmap and grows with the application.

12.9.1 Integrating SAP CRM with SAP Cloud for Customer

SAP provides many standard integration scenarios when integrating to SAP CRM. These will be discussed in terms of core master data integration and campaign to quote process. When configuring SAP Cloud for Customer, it's common to reuse existing master data that is "owned" by SAP CRM. In many cases, SAP CRM is the system of record, and SAP Cloud for Customer is the system of engagement. The master data includes accounts, contacts, products, customer hierarchies (based on business partner relationships), employees, social media profiles, product categories, marketing attributes, and sales organization hierarchies.

The master data is then used to enable business process integration. One example is campaign to quote. For example, let's say a campaign is executed in SAP CRM. An in-house sale in SAP CRM qualifies the lead and forwards it to the sales organization. This is shown in [Table 12.1](#).

SAP Cloud for Customer		Accept lead	Create opportunity	Update opportunity	View follow-up documents
SAP CRM	Execute campaign	Qualify lead	Contribute to opportunity	Update opportunity	Convert SAP CRM opportunity to quote or order

Table 12.1 Campaign to Quote Integrated with SAP CRM

The sales representative accepts the lead in SAP Cloud for Customer. The sales representative creates opportunities. The opportunity is integrated with SAP CRM, and the in-house sales person contributes to the opportunity in SAP CRM.

Transactional packaged integration content between SAP Cloud for Customer and SAP CRM includes campaign headers, promotions, and bidirectional integration of leads, activities, and opportunities. Service tickets created in SAP Cloud for Customer can be replicated to SAP CRM. Once completed, the status replicates back to SAP Cloud for Customer.

Figure 12.5 shows the master data integration between SAP Cloud for Customer and SAP CRM. The arrows indicate which way the integration flows.

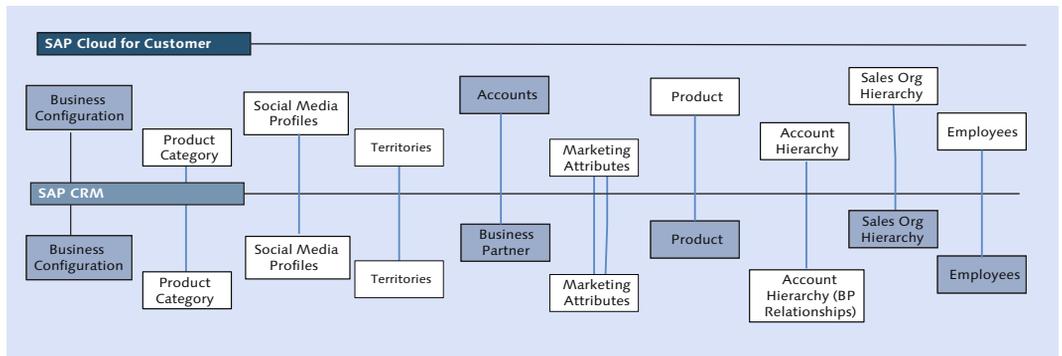


Figure 12.5 Master Data Integrated between SAP Cloud for Customer and SAP CRM

For example, a product category integrates from SAP CRM to SAP Cloud for the customer. This makes sense because you don't need sales representatives to create product categories when they've been created in SAP CRM. In Figure 12.5 notice that the accounts to business partners shows the integration is bidirectional. Also notice the marketing attributes with an arrow from SAP CRM to SAP Cloud for Customer and a dotted arrow back. For marketing attributes the marketing attribute set is unidirectional from SAP CRM to SAP Cloud for Customer. For example, an attribute is the operation system. The operating system attribute is defined in SAP CRM. Then, in SAP Cloud for Customer, values can be assigned, for example, Linux, Windows, and so on. Those values are then integrated back to SAP CRM.

In [Figure 12.6](#), we see that the transaction data integration includes campaign headers, leads, activities, promotions, real-time pricing, and quotes in SAP Cloud for Customer to sales orders in SAP CRM, and ticket integration.

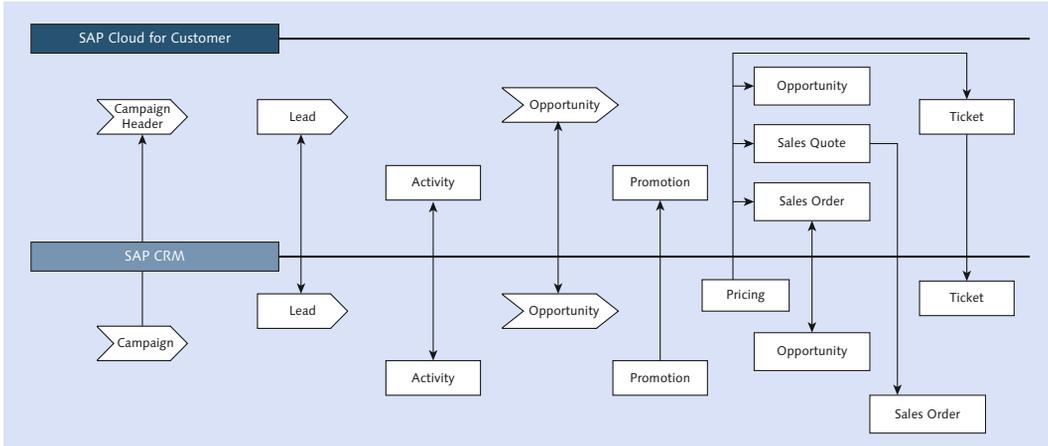


Figure 12.6 Transaction Data Integrated between SAP Cloud for Customer and SAP CRM

Packaged integration content is also available when integrating SAP Cloud for Customer to SAP ERP, as discussed next.

12.9.2 Integrating SAP ERP with SAP Cloud for Customer

SAP provides many standard integration scenarios when integrating to SAP ERP. These will be discussed in terms of core master data integration, opportunity to order integration, and service ticket integration. As with SAP CRM, when configuring SAP Cloud for Customer, it's common to reuse existing master data that is "owned" by SAP ERP. In many cases, SAP ERP is the system of record, and SAP Cloud for Customer is the system of engagement. The master data includes accounts, contacts, products, customer hierarchies, employees, currency conversion rates, equipment, and functional locations.

A typical sales scenario for SAP ERP involves Lead → Opportunity → Quote → Order. Standard integration to SAP ERP is provided across the full scenario.

When an opportunity is created, the following integration scenarios are available:

- ▶ Real-time pricing, which simulates an order in SAP ERP and returns a price
- ▶ Creating a quote inquiry or quote in SAP ERP
- ▶ Creating a sales order inquiry or sales order in SAP ERP

When the quote is created, the following integration scenarios are available:

- ▶ Real-time pricing, which uses all pricing conditions and discounts, and enables the sales representative to adjust the discounting in SAP Cloud for Customer
- ▶ Creating a sales order in SAP ERP

When creating orders in SAP Cloud for Customer, the following scenarios are available:

- ▶ Real-time pricing, which uses all pricing conditions and discounts, and enables the sales representative to adjust the discounting in SAP Cloud for Customers
- ▶ Creating a sales order in SAP Cloud for Customers and replicating it to SAP ERP
- ▶ Replicating sales orders created in SAP ERP and then updating in SAP Cloud for Customer

While many integration scenarios are available, customers normally only need a few of them. It's important to determine what the business flow should be. Common questions to ask include the following:

- ▶ Do the sales representatives create quotes, or is this handled by the backoffice?
- ▶ Should sales orders be created only in SAP ERP? Should the sales force trigger this?
- ▶ Is an inquiry document needed, or can the sales representatives trigger the sales order creation themselves?

Within SAP Cloud for Services, when the work ticket is released to SAP ERP, documents are created in SAP ERP for the stock or service and the time recording.

The flow of the integration is as follows:

1. An internal order (IO) is created and persisted (includes commit work). There will be exactly one IO for a work ticket ID. If an IO exists already for the work ticket, it will be reused.
2. Items are processed according to the preceding logic of the action codes.

3. A billing request is created that includes all billing-relevant items of the IDoc message.
4. If no error occurs, all data gets saved (commit work).
5. From the billing request, a confirmation IDOC is sent to the work ticket containing the billing request ID.

Packaged integration with SAP ERP includes master data, sales, and service processes.

12.10 Summary

This chapter outlined SAP Cloud for Customer, which includes SAP Cloud for Sales, SAP Cloud for Services, SAP Cloud for Social Engagement, and SAP Digital for Customer Engagement. The core foundation capabilities of SAP Cloud for Customer include account management and intelligence, mobility, analytics, groupware integration, social capabilities and collaboration, as well as Territory Management. SAP Cloud for Customer provides APIs and includes many standard integrations—from Twitter to SAP CRM. The application is easily extendible, branded, and personalized.

SAP Cloud for Sales includes Opportunity Management, quotation management, visit planning and execution, as well as Activity Management. SAP Cloud for Services includes incoming communications, processing of tickets, resolving and responding to tickets, as well as closing tickets. SAP Cloud for Sales and SAP Cloud for Services include packaged integration with SAP CRM and SAP ERP.

More Information

SAP Cloud for Customer has new releases every quarter and is continually being enhanced. To find the latest information about product capabilities, use both the SAP Community Network (<http://scn.sap.com/community/cloud-for-customer>) and SAP Help (<http://help.sap.com/cloud4customer>).

This chapter briefly discussed SAP Digital for Customer Engagement as well. SAP Digital for Customer Engagement is a version of SAP Cloud for Customer intended for use by a small number of users, either individuals or teams. SAP Digital for Customer Engagement has a 30-day free trial, a monthly fee, and can be

upgraded to SAP Cloud for Customer as your business needs and usage grow. You can sign up for a free trial at the SAP store (<http://www.sapstore.com>).

In the next chapter, we'll turn our attention to SAP CRM analytic capabilities.

In this chapter, we'll provide an overview of SAP CRM Analytics and analytic functions.

13 Analytics

SAP CRM Analytics helps you measure, predict, and optimize customer relationships. In SAP CRM Analytics, data gathered within operational SAP CRM systems are analyzed in terms of how customers are being serviced. This could be the segmentation of a customer or to identify cross-selling and up-selling potential. SAP CRM Analytics helps to forecast the organization needs and determine the customer behavior. Data collection and analysis is an ongoing and iterative process. With effective analytics, companies can reduce their unnecessary inventories, thereby reducing overall inventory cost.

SAP CRM Analytics is spread across SAP CRM Marketing, Sales, and Service, including SAP CRM applications such as partner channel, Interaction Center (IC), and SAP CRM Mobile Sales. SAP CRM Analytics provides organizations with real-time insight into customer information such as identity, buying behavior, and account activity. This allows a company to customize its marketing efforts and interactions with a particular customer. SAP CRM Analytics effectively illustrates how marketing campaigns and segmentations have influenced sales based on customer behavior.

13.1 SAP Business Warehouse Reporting

SAP CRM Analytics offers information on a company's sales data to analyze performance while running key service business functions such as reporting. The reporting functionality in SAP CRM Analytics can be done via SAP BusinessObjects Business Intelligence (SAP BusinessObjects BI) tools or via interactive reporting. SAP CRM Analytics provides different reporting options based on the user experience. This means appropriate reporting tool should be available for the right user group. The following different reporting tool options are available:

- ▶ SAP BusinessObjects Dashboard
- ▶ SAP Crystal Reports
- ▶ SAP BusinessObjects Web Intelligence/SAP CRM interactive reporting
- ▶ SAP BusinessObjects Explorer
- ▶ SAP Business Explorer (BEX)

SAP BusinessObjects BI offers comprehensive reporting functionality as a separate application software, which can be used in SAP CRM Analytics via SAP BW reporting. Companies can therefore use the SAP BW reporting functionalities within their SAP CRM system. Installing additional SAP BusinessObjects BI content allows an organization to work through interactive reporting to overcome their ad hoc reporting requirement.

The SAP CRM Analytics architecture contains operational SAP CRM and backoffice information as transactional processing. SAP CRM transaction data is loaded to the SAP BW system via standard or custom data sources. After data is extracted, transformed, and loaded to the SAP BW system, it's stored in the operational data stores or Online Analytical Processing (OLAP) cubes in the SAP BW system.

Based on the organization reporting requirement, the SAP BW reports are then launched from the SAP CRM system and can be role specific.

The following areas in SAP CRM Analytics provide reporting capabilities via SAP BW:

- ▶ **Marketing analytics**

Marketing analytics is important to understand from an organizational point of view as you should know how the market is responding to the product you're selling and understand the demand of any new products in the market. Understanding the market situation and carrying out marketing activities, that is, running campaigns, building segmentation and target groups, and so on, at the control cost is equally important as understanding and implementing effective and cost-controlled marketing procedures. SAP CRM provides some of the marketing analytics that help to meet the marketing needs. Following are some of the marketing reports:

- ▶ Segmentation and Targeting
- ▶ Campaign Planning
- ▶ Marketing Budget Planning

- ▶ Marketing Optimization and Refinement
- ▶ Marketing Plan Analysis
- ▶ Campaign Analysis
- ▶ Lead Analysis

▶ **Sales analytics**

With *sales analytics*, an organization can understand the market trend as to which product is the best-selling product and understand the sales pipeline. This helps organization better plan the customer's delivery and improve on sales planning. SAP CRM Analytics also provides sales order and sales contract analysis capability that drives many of the organization's key selling decisions. Following are some of the sales analytics reporting capabilities that are useful in analyzing the sales planning and sales pipeline for an organization:

- ▶ Sales Planning
- ▶ Sales Pipeline Analysis
- ▶ Activity Analysis
- ▶ Opportunity Planning and Analysis
- ▶ Contract Analysis
- ▶ Sales Quotation and Order Analysis
- ▶ Sales Analysis
- ▶ Billing Analysis

▶ **Service analytics**

Service analytics provides complete information on the service transaction analysis that helps organizations understand their needs from a resource allocation perspective and control their service costs as a whole. Providing optimum customer service results in the maximum customer satisfaction. Having reporting analysis provides information that can fix gaps in the service business process and that way organizations can attract more customers at the lower service cost. Following are some of the service analysis reporting capabilities provided by SAP CRM Analytics:

- ▶ Strategic Service Planning
- ▶ Case Management Analysis
- ▶ Service Contract and Quotation Analysis

- ▶ Service Order and Quotation Analysis
- ▶ Complaints and Return Analysis
- ▶ Installed Base Analysis

▶ **Customer analytics**

It's imperative to understand customers' buying behavior for any organization. *Customer analytics* helps an organization get the customer-related information in order to predict customer behavior. In addition to the customer behavior, organizations are also interested in understanding the prime customers that can bring more business to the organization. This is also called customer value analysis. Following are some of the customer analytics report examples:

- ▶ Customer Satisfaction and Loyalty Analysis
- ▶ Customer Segmentation with Clustering
- ▶ Account and Fact Sheet Analysis
- ▶ Customer Profitability Analysis
- ▶ Business Partner Marketing Attributes Analysis

▶ **Product analytics**

Product analytics help organization understand the associated products that are sold to the customer. Making the right decision on the cross-selling analysis helps organizations increase their sales and in turn generate more revenue. Following are some of the product analytics reporting examples:

- ▶ My Top 10 Products
- ▶ Product Profitability
- ▶ Cross-Selling Analysis
- ▶ Complaints by Product
- ▶ Competitor Analysis

▶ **Interaction Center analytics**

IC analytics provides reporting capabilities to capture interactions between the customers and customer service representatives. Understanding the average wait time for the calls received, percentage of the calls answered, customer feedback, and so on are important for improving on customer service results and customer satisfaction. The following are some examples of IC reports.

- ▶ IC Analytics
- ▶ Helpdesk Analytics

- ▶ Interactive Scripting Analytics
- ▶ Email Response Management System Analytics
- ▶ Interaction Statistics

Figure 13.1 and Figure 13.2 show the reports available with the analytics professional business role, which includes SALES PLANNING AND FORECASTING, CUSTOMERS, ACTIVITIES, SALES PERFORMANCE, PRODUCTS, LEADS, OPPORTUNITIES, CAMPAIGNS, and SERVICE TICKETS REPORTS.

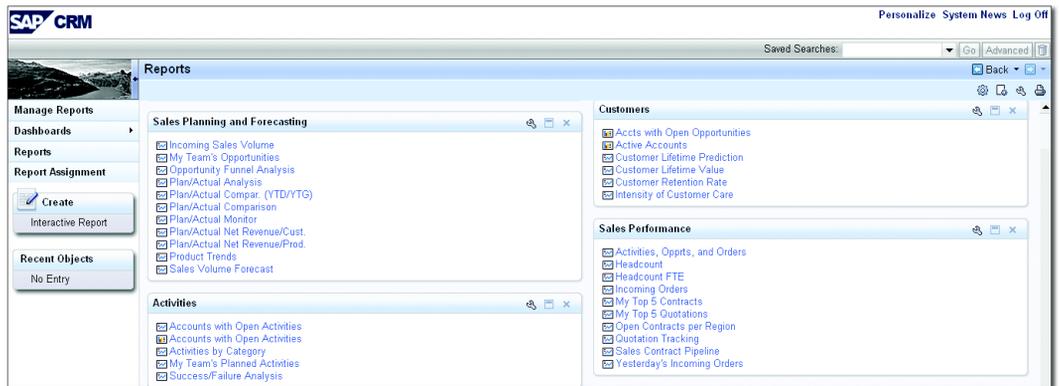


Figure 13.1 SAP CRM Analytics Professional Role (1)

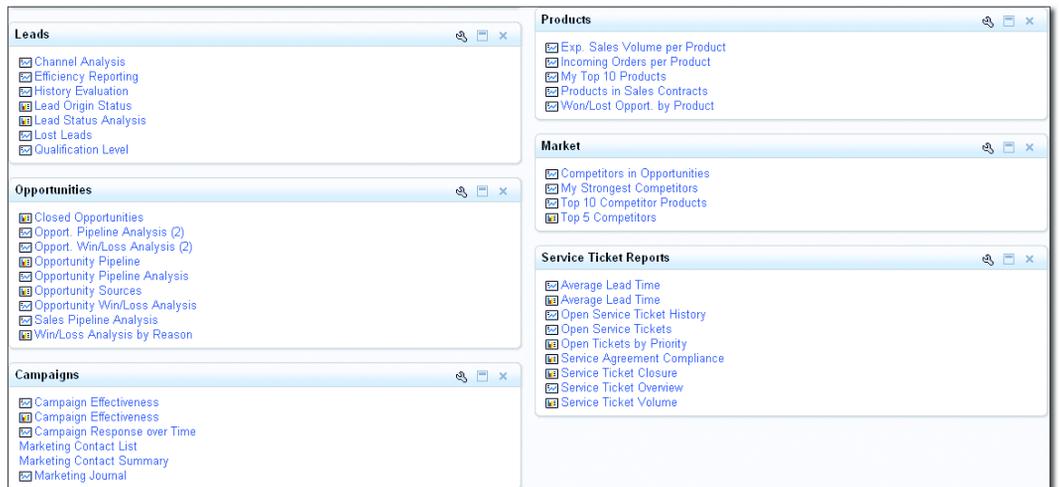


Figure 13.2 SAP CRM Analytics Professional Role (2)

13.1.1 Report Assignment

The SAP CRM Analytics business role provides the capability to assign reports from SAP BW to the selected business roles and their work centers. You can also select and assign interactive reports to the business roles and their work centers.

Figure 13.3 shows the ASSIGNMENT OF REPORTS TO BUSINESS ROLES view from the *ANALYTICSPRO – Analytics Professional* role.

The following report types can be imported using the wizard:

- ▶ SAP BW Enterprise Report 7.x
- ▶ SAP BW InfoProvider 7.x
- ▶ SAP BW Query 7.x
- ▶ SAP BW Query Views 7.x, 3.x
- ▶ SAP BW Template 7.x, 3.x
- ▶ SAP BusinessObjects Dashboard
- ▶ SAP Crystal Reports
- ▶ SAP BusinessObjects Enterprise reports (e.g., Web Intelligence)

The screenshot displays the SAP CRM 'Assignment of Reports to Business Roles' wizard. The left sidebar contains navigation options: Manage Reports, Dashboards, Reports, and Report Assignment. Under Report Assignment, there is a 'Create Interactive Report' button and a 'Recent Objects' section with 'No Entry'. The main area shows a progress bar with three steps: 1 (Report Details), 2 (Business Role Assignment), and 3 (Share Report). Below the progress bar are 'Previous' and 'Next' navigation buttons. The 'Report Details' section includes the following fields:

Title:	Sales Reporting
Description:	
BW Report Type:	Enterprise Report 7.x
Report or Dashboard ID:	ZDASHBOARD
Based on Interactive Reporting:	<input type="checkbox"/>
BW System:	

Figure 13.3 Assignment of Reports to Business Roles

13.1.2 Analytical Methods

SAP CRM Analytics provides key capabilities around analytical methods to understand the customer behavior via SAP BW. These include the following steps:

1. Measure

SAP BW receives data from various systems that helps organizations understand the trend and collect the relevant data accordingly. This helps the organizations monitor their business more closely and focus on key areas that can bring success to the business.

2. Predict

Predicting customer behavior based on the data gathered is key to reducing overall company costs and increasing profit. Different data mining methods in SAP BW can help organizations predict customer buying behavior.

3. Plan

From an analytical point of view, after the data is gathered and analyzed, organizations can develop the right strategies that can drive success. Right predictive planning drives key decision to increase the profitability of an organization.

4. Optimize

Optimizing SAP CRM Analytics helps organizations close the loop on the analytical findings, including key points regarding customers and customer-centric decisions. Optimizing SAP CRM operational processes is the outcome of the data analysis and data mining. Having complete information at the hands of the sales representative and customer service representative is a big win for any organization from the customer servicing perspective.

13.2 Interactive Reporting

SAP CRM also provides real-time reporting as a part of interactive reporting for data modeling in real time. This is useful for organizations that don't have a separate SAP BW system for reporting purposes and provides the functionality to create ad hoc reports based on their specific needs. For interactive reporting, you don't need a separate SAP BW system. SAP BusinessObjects BI content within SAP CRM is used to run the interactive reporting.

SAP recommends creating a separate SAP CRM client for interactive reporting. SAP CRM provides you with the standard business role ANALYTICSPRO – *Analytics Professional* wherein you can access all SAP CRM reports and also create the interactive reports. Interactive reporting is a self-service reporting and analysis that is simple to use and is designed for all types of users.

The following is a list of interactive reports available in each of the SAP CRM core areas:

- ▶ **Sales analytics**
 - ▶ Opportunities
 - ▶ Activities
 - ▶ Sales Quotation
 - ▶ Sales Order
 - ▶ Sales Contracts
- ▶ **Marketing analytics**
 - ▶ Leads
 - ▶ Campaigns
- ▶ **IT Service Management**
 - ▶ Service Request
 - ▶ Problems
 - ▶ Request for Change
- ▶ **Service management**
 - ▶ Service Tickets
 - ▶ Service Order
 - ▶ Complaints
- ▶ **Interaction Center**
 - ▶ Interaction Record

Transaction /CRMBW/CONFIG_WIZARD (SAP CRM Interactive Reporting Configuration Wizard) consists of the configuration steps to activate interactive reporting. To use the Interactive Reporting Configuration wizard, you need to

activate the business function CRM_ANA_BOB (*SAP Business Objects Integration and CRM Interactive Reporting*).

SAP has also provided additional BAdIs for interactive reporting:

- ▶ CRM_BADI_OR_IL_DYN_DATE_CONVERTER – Conversion of Custom Time Periods for Date Filter Fields
- ▶ CRM_BADI_OR_IL_FLT_CHECK – Conversion and Checking of Extensibility Filter Fields
- ▶ CRM_BADI_OR_IL_NAV – Operational Reporting Interaction Layer Navigation

13.3 SAP CRM Analytics Powered by SAP HANA

SAP Business Suite is powered by SAP HANA, which has in-memory computing capabilities. This means that a large amount of the data can be stored in the main memory of a database system, which reduces the amount of time it takes to fetch data and run the logic on the SAP Business Suite. This improves business processes in one aspect and reduces the round-trip to the database system.

SAP HANA provides real-time analytics due to massive data being accommodated in-memory and provides the information back to the source system, which can be an SAP BusinessObjects BI or SAP CRM system. The transaction data and analytical data stored can therefore be executed in real time for SAP CRM Analytics, allowing companies to make informed business decisions more quickly.

Figure 13.4 shows SAP HANA in conjunction with the SAP Business Suite (i.e., SAP CRM and SAP ERP) where the data flow from SAP Business Suite is happening in real time to SAP HANA. The data within SAP HANA feeds into SAP BusinessObjects BI or the SAP Business Suite.

Figure 13.5 shows SAP HANA on the side car with a new application. In the side car approach, you can implement SAP HANA without changing any of your existing system setup. The operational information can be transferred in real time to SAP HANA, which can then be used for real-time analytics. Figure 13.5 shows the SAP CRM Analytics query being performed in the source system itself. For SAP BusinessObjects BI, the data consumer will be SAP BusinessObjects BI instead of the source system.

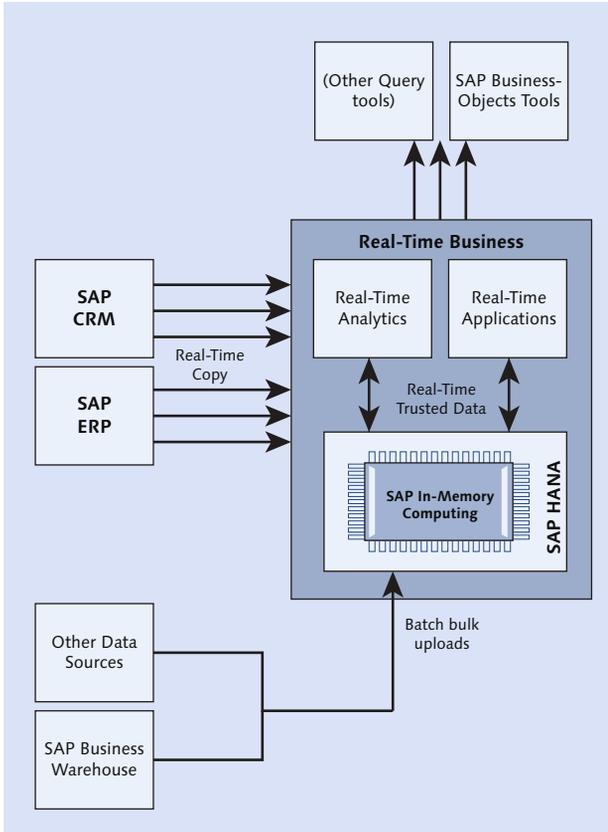


Figure 13.4 SAP HANA in Conjunction with SAP Business Suite

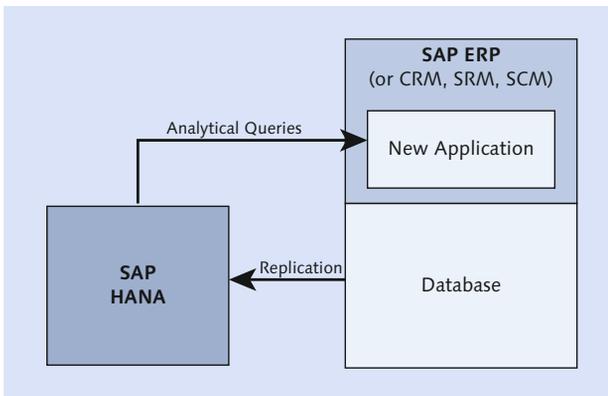


Figure 13.5 SAP HANA in a Side Car Approach with a New Applications

SAP CRM powered by SAP HANA also provides the SAP 360 Customer solution that combines SAP CRM intelligence, SAP CRM Mobile, and SAP CRM social. As a part of SAP CRM Analytics, it provides real-time customer reporting such as SAP Customer Value Intelligence, SAP Audience Discovery and Targeting, SAP Account Intelligence, and SAP Predictive Analytics.

13.4 Summary

In this chapter, we looked at SAP CRM Analytics and its functions. We discovered reporting capabilities that can help an organization obtain the necessary information to make key business decisions. This chapter also included some of the report templates provided by SAP CRM Analytics out of the box to suit your business needs. In addition to these reports, SAP CRM also offers interactive reporting that acts as an ad hoc report giving real-time information on the operational analytics. Finally, we looked at the basic functions around interactive reporting and SAP CRM Analytics powered by SAP HANA. In the next chapter, we'll look at SAP CRM performance analysis.

In this chapter, we'll briefly discuss how to measure performance and identify unnecessary calls being performed by custom code.

14 Performance Analysis

In SAP CRM, performance analysis becomes key during an implementation when performance issues arise while functionalities are being executed in the system. This chapter focuses on some of the main concepts of workload analysis and how you can analyze performance issues within SAP CRM AS ABAP with the tools provided by SAP.

14.1 SAP CRM System Workload Analysis

Any implementation of an SAP CRM system or other SAP modules involves a performance analysis phase before and a monitoring phase after the project goes live. Typical implementation performance analysis situations involve volume testing in a production-like environment while running complex scenarios to verify system performance as a whole. If any performance issues exist, it can be due to various reasons such as workloads caused by end users, lack of memory allocated to end users, execution of background jobs, complex and poor coding, remote function calls (RFCs) to different systems, and more.

IT departments should know the call flow within the system to understand performance issue gaps. To enable this, SAP has provided the following transactions to monitor and analyze issues that can help to narrow down performance problems:

- ▶ Transaction ST03 (Workload Monitor)
- ▶ Transaction SM50/SM66 (Work Process Overview)
- ▶ Transaction ST06/OS07N (Operating System Monitor)

- ▶ Transaction DBACOCKPIT (Database Monitor)
- ▶ Transaction ST02 (Set Up Buffers)
- ▶ Transaction ST12 (Executing Single Transaction Traces)

Performance issues in SAP CRM may be due to various reasons. One reason may be that the system isn't configured correctly and not enough hardware is available to cope with the transaction volume. In this case, if the transaction volume increases, the system performance starts decreasing. This situation becomes more problematic when production systems show better performance.

To fix a performance issue, the SAP CRM system may require the appropriate tuning. Tuning can be done in two areas: SAP technology tuning and SAP application tuning. The following are some tunings that should be considered while working on any kind of performance issue:

- ▶ SAP system parameters optimization
- ▶ Operating system configuration
- ▶ Database optimization
- ▶ Workload distribution optimization
- ▶ Hardware sizing verification
- ▶ ABAP code optimization
- ▶ SAP Customizing optimization
- ▶ Table buffering verification

Call flow details are provided for each and every component involved with the call made when it's triggered from the frontend. These include the following:

- ▶ **Dialog response time**

Dialog response time is the total time required between the requests received by the application server to the response received on the application server. The dialog response time is measured at the application server. This means when a certain action is executed by the user on the front screen, the request goes to the application server, which then triggers the logic and retrieves information from the database back to the application server. This complete round-trip on the application server is measured in terms of timing.

▶ **Wait time**

Wait time refers to when the dispatcher dispatches the request to the work process type, which sits in the request queue to process when the free work process is available. After the work process on the application server is available to process the request, the wait time ends.

▶ **Roll-in time**

Roll-in time is one of the components that adds to the total response time. Roll-in time is the time taken for the user context from the roll area to be copied into the local roll memory of the individual work process.

▶ **Load and generation time**

Load and generation time is the time required to load a program, screen descriptions, and the Central User Administration (CUA) description. In general, the loading and generating of programs and data is very quick because they are being stored in the buffers.

ABAP Program Generation

For details about the ABAP program generation, refer to SAP Note 162991: Generation Tools for ABAP Programs.

▶ **Processing time**

The *processing time* is the time taken to execute the program, and it isn't measured but calculated as shown on the Transaction STAD records. The processing time is calculated by subtracting all of the components from the total response time.

▶ **Database request time**

The *database request time* is the time taken for the program to get the required data from the database to the SAP instance during program execution.

▶ **Buffer access time**

Buffer access time isn't listed separately because the time spent to load the requested data to the SAP buffer is very fast.

▶ **Enqueue time**

Enqueue time is the span of time required to set the SAP locks by making use of the enqueue work process. The total enqueue time spent is very little and should be less than 5ms.

► **Roll-out time**

Roll-out time isn't considered part of the response time because it occurs when the data is transferred to the presentation layer or the frontend. In this case, the work process writes the user context back to the roll buffer, and the dispatcher sends the response to the presentation layer.

► **CPU time**

CPU time is the time consumed by the CPU resources on the specific work process during the execution of the dialog step. This means CPU time is part of all the times consumed during one transaction step. The processing time is the actual execution of the ABAP code that triggers the functionality for that dialog step. If the CPU time is higher that means not enough CPU resources are available to execute the ABAP code and may require thorough checks on the CPU bottlenecks.

► **Roll wait time**

Roll wait time is the total time accumulated when the user context is rolled out; for example, roll out occurs when there is an RFC happening to the other SAP system, and the same transaction step is still being executed.

Performance Analysis Tips

The following are some SAP-recommended performance analysis tips:

- Roll wait time should be less than 10% of the response time.
- If database time is greater than 40% (response time minus wait time), then detailed analysis of the database is required.
- If the processing time is twice the CPU time or greater, then detailed analysis of hardware bottlenecks is required.
- A load time greater than 50ms requires detailed analysis of the SAP memory configuration.
- Roll in/out greater than 20ms requires detailed analysis of the SAP memory configuration.

14.2 Perform and Analyze Traces

As mentioned, SAP has provided tools within the SAP CRM system to perform and analyze traces. One example of performing and analyzing traces is shown next for Transaction ST12 (Single Transaction Analysis).

Figure 14.1 shows an example of executing traces for a sales order and analyzing the performance issue to determine why it's taking a long time to save the order. Proceed with the following steps:

1. Log in to the SAP CRM GUI, and access Transaction ST12. Enter "Sales Order Save" in the COMMENT field. Select the SERVER as ALL SERVERS (you can also select the specific application server if you know the application server you're going to use to log in and save the order), and the TASKTYPE as *. The default settings can be kept the same, as shown in Figure 14.1.
2. Click on START TRACE. Make sure that you don't click or enter anything and you've logged on the WebClient UI screen to execute the step.

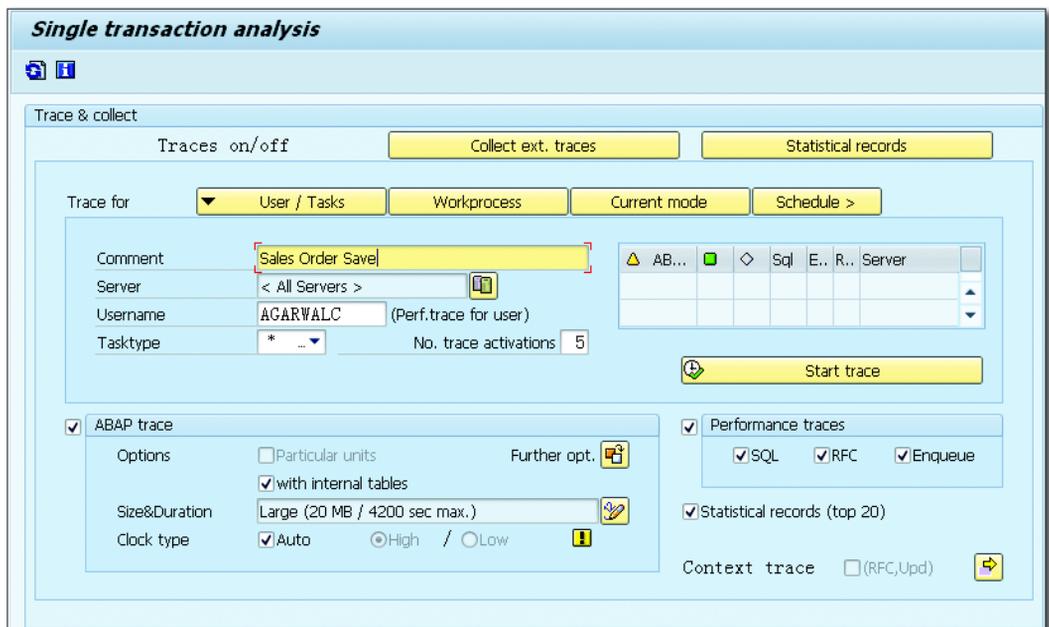


Figure 14.1 Single Transaction Analysis (1)

Figure 14.2 shows that the trace has been executed.

3. Execute the save order step, as shown in Figure 14.3. Then go back to Transaction ST12 to end the trace. Click END TRACES & COLLECT to end the trace.

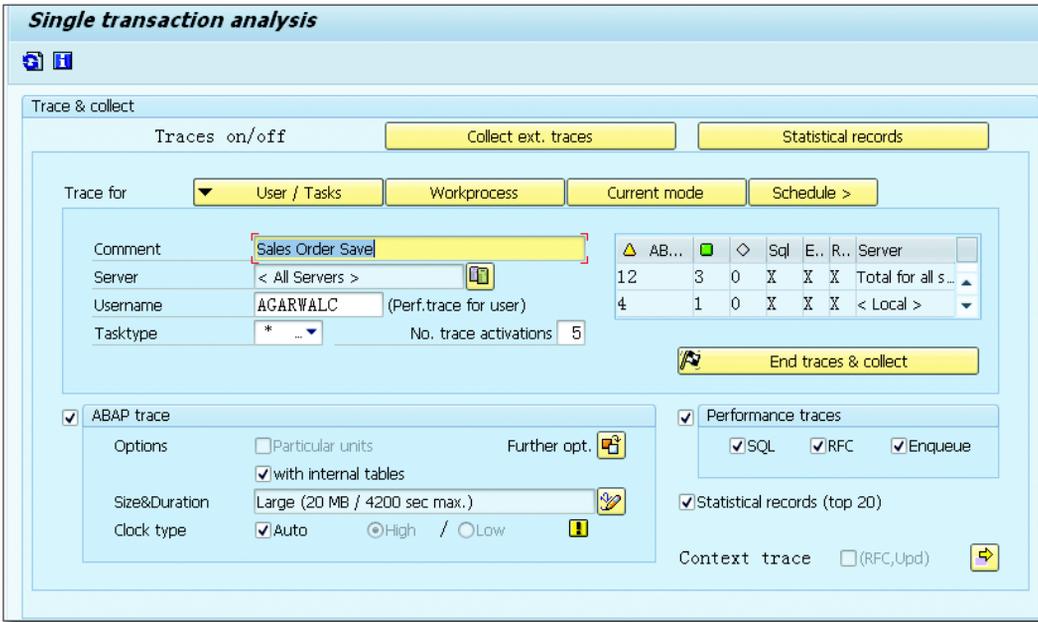


Figure 14.2 Single Transaction Analysis (2)



Figure 14.3 Order Save

4. The traces will be collected as soon as you end the traces. Click on the FULL SCREEN button on the SINGLE ANALYSIS TRACE screen to view the details of the traces. The TRACE ANALYSIS screen is shown in Figure 14.4. SAP has provided different tools in the TRACE ANALYSES FULLSCREEN LIST, including ABAP TRACE,

PERFORMANCE TRACES, SQL TRACE SUMMARY and STATISTICAL RECORDS (Transaction STAD), to analyze the issue further.

Collect date	No#	Sts	Trc. Time	User	Comment	Content	A...	Duration	Tasktype	Traced User
12/31/2014	1#2	✓	10:41:10	AGARWALC	Sales Order Save	ATRA SQL SSUM ENQ RFC STAT [User=AGARW...		1,590	*	AGARWALC
12/31/2014	1-1	✓	10:41:15	AGARWALC	Sales Order Save	ATRA SQL SSUM ENQ RFC STAT [User=AGARW...		1,356	HTTP	AGARWALC
12/31/2014	1-2	✓	10:41:10	AGARWALC	Sales Order Save	ATRA SQL SSUM ENQ RFC STAT [User=AGARW...		234		AGARWALC

Figure 14.4 Trace Analysis Screen

- Click on the ABAP TRACE button located on toolbar to check the ABAP calls and the time taken on each of the ABAP calls. As shown in Figure 14.5, the GROSS IN % and NET (%) can be sorted from high to low and allow you to check the maximum time taken by each of the ABAP calls. The different functions available on the ABAP trace toolbar include PER MODUNITS where you can view the maximum time spent, TIME SPLIT HIERARCHY, and TOP DOWN and BOTTOM UP CALLS.

Call	No.	Gross	Net	Gross in %	Net (%)	Program (called program)	Type
RFC SPC_PERF_GET_PRICING_CONDITION	8	141,162	141,162	10.4	10.4	SAPLPRC_INT	
Array Insert CRMD_ORDER_INDEX	2	57,994	57,994	4.3	4.3	SAPLCRM_ORDER_INDEX	DB->
Array Insert CRMD_PARTNER	1	46,131	46,131	3.4	3.4	SAPLCRM_PARTNER_DU	DB->
Array Insert CRMD_LINK	2	23,859	23,859	1.8	1.8	SAPLCRM_LINK_DU	DB->
RFC SPC_CHANGE_DOCUMENT	1	17,821	17,821	1.3	1.3	SAPLPRC_INT	
Array Insert PPFTSFRRIJ	1	17,413	17,413	1.3	1.3	CA_SF_PRINT_PFF-----CP	DB->
RFC SPC_CHANGE_ITEMS	1	16,331	16,331	1.2	1.2	SAPLPRC_INT	
Array Insert SRRELROLES	1	16,030	16,030	1.2	1.2	SAPLREEL	DB->

Figure 14.5 ABAP Trace Analysis

Like an ABAP trace, a performance trace is an option to view the PROGRAM NAME that took the maximum time, as shown in Figure 14.6.

HH:MM:SS.MS	Durth	Program Name	Obj...	Operation	Curs	Array	Σ Hi...	RC	Conn
10:41:16.801	3,032,971	SAPLQOWK	sap...	Server		0	0	0	
10:41:16.811	3,009,114	SAPLQOWK	sap...	Client		0	0	0	
10:41:16.813	3,009,114	SAPLQOWK	sap...	Server		0	0	0	

Figure 14.6 Performance Trace Analysis

The SQL SUMMARY on the TRACE ANALYSES FULLSCREEN shows the SQL query with the corresponding times on each of the SQL queries (see [Figure 14.7](#)).

S.	Exec	Redundant#	Ident%	Durtn	%ABAPTrCtI	Records	Time/Exec	Rec/Exec	AvgTime/R.	MinTime/R.	Length	BfTp	TabType	Table Name	Statement String with Placeholders
S.	2	0	0	56,698	4	9	28,349	4.5	6,300	733	1,006		TRANSP	CRMD_ORDER_INDEX	INSERT INTO "CRMD_ORDER_INDEX" VALUES(:A0,;A1,;A2,;A3
S.	1	0	0	45,787	3	6	45,787	6.0	7,631	7,631	242		TRANSP	CRMD_PARTNER	INSERT INTO "CRMD_PARTNER" VALUES(:A0,;A1,;A2,;A3,;A4
S.	4	0	0	31,558	2	4	7,890	1.0	7,890	1,914	0			DDNTF	SELECT WHERE TABNAME = :A0 ORDER BY TABNAME, BLOC0
S.	2	0	0	24,608	2	2	12,304	1.0	12,304	150	300		TRANSP	SMW3_BOOCS	INSERT INTO "SMW3_BOOCS" VALUES(:A0,;A1,;A2,;A3,;A4,;A

Figure 14.7 SQL Trace Summary

The statistical records (Transaction STAD) can be viewed from the TRACE ANALYSIS screen. This illustrates the breakouts on CPU time, total response time, processing time, load and generation time, roll time (in and out), and database request time (see [Figure 14.8](#)).

Analysis of time in work process				
CPU time	1,020 ms	Number	Roll ins	8
RFC+CPIC time	937 ms		Roll outs	8
			Enqueues	18
Total time in workprocs	2,209 ms			
Response time	2,454 ms	Load time	Program	13 ms
			Screen	0 ms
			CUA interf.	0 ms
Wait for work process	5 ms	Roll time	Out	159 ms
Processing time	1,837 ms		In	2 ms
Load time	13 ms		Wait	240 ms
Generating time	0 ms			
Roll (in+wait) time	242 ms	Frontend	No. roundtrips	0
Database request time	351 ms		GUI time	0 ms
Enqueue time	4 ms		Net time	0 ms

Figure 14.8 Statistical Records (Transaction STAD)

14.3 Summary

This chapter provided a brief overview of how to measure system performance and identify unnecessary calls/performance bottlenecks due to any custom code. It discussed the importance of performance analysis and how workload analysis can be carried out using the standard tools that are available in the system. Understanding the different options available to analyze traces is useful when measuring system performance in a sustainable environment. This chapter provided an example of the trace analysis tool that helps to execute the traces on the business transactions and provided details on ABAP trace, SQL trace, performance trace, and Transaction STAD records.

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