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Effective SAP® SD

Get the Most Out of Your SAP SD Implementation





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This chapter will cover the key (or most popular) techniques used in Sales and Distribution. You will become familiar with condition techniques as they are used in pricing. I will also go over some of the powerful determination techniques with partner function and text. Last but not least, you will learn about data transfer to the subsequent document from the preceding document.

3 Key Techniques in Sales and Distribution

SAP R/3, Enterprise version, and mySAP ERP use some common techniques to apply your business rules to the processes you are designing in the system. Let's say that in a sales transaction with a customer, you would like the final price to be based on the price of the material, any discount application, freight, and taxes. This determination depends on the business rules associated with that transaction.

Similarly, you might like to have some kind of text determined, based on the document; e.g., a sales order has a purchase order text, and a delivery note has the shipping instruction text. You would like some of the text items to be copied to subsequent documents; e.g., a special instruction for customer entered in the sales order copied to the delivery note.

Creating a delivery document involves copying information from the sales order, such as the materials and quantities. You can define control data for the flow of documents. Configuration allows you to define the specifications for copy requirements and data transfer.

Different customers can assume different roles in a business transaction. The customer who places the order doesn't necessarily have to be the same customer who receives the goods, or who is responsible for paying the invoice. Assigning partner roles in SAP Sales and Distribution (SD) determines the functions of particular partners in the sales process. We will examine the key configuration techniques involved in setting up partner functions and determinations.

Pricing Fundamentals 3.1

Pricing procedure is associated with the sales document and provides the different components needed to come to final agreements with customers on the price they will pay for the goods or service. Prices are stored as data within condition records. The values for condition could be for base price, surcharge, and discount. These are defined by condition types, which determine the category and describes how the condition is used.

Condition	Application	Condition Type	Control Data
Price	Price List Material Price Customer Specific	PRO1 PRO0	Fixed amount based on time period.
Discount/ Surcharge	Customer Material Price Group Customer Material	K007 K029	Calculation Type—Percentage, amount, or weight Scale Bases—value or weight

Table 3.1 Price Condition Application

Table 3.1 shows the condition for pricing and the different business application of this condition. These different business applications or categories of conditions are identified by their condition types. The control data provides the basis for calculation type and identifies any scale bases for value, weight, quantity, volume, or time period.

Price conditions are maintained through transaction under the menu path: SAP Easy Access · Logistics · Sales and Distribution · Master Data · Conditions. Condition type configuration can be accessed via the path: Tools • Customizing • IMG • Execute Project • SAP Reference IMG • Sales and Distribution • Basic Functions • Pricing • Pricing Control • Define Condition Types.

All condition types permitted in pricing are available in the pricing procedure. In the pricing procedure, you can define how the system should use the condition by specifying the requirements for each condition. The sequence in which the system accesses these conditions in the business document is also determined in the pricing procedure. Table 3.2 displays a typical pricing procedure. The reference level provides a method to specify a different basis to calculate the condition type and to group conditions for subtotal. The pricing procedure might contain any number of subtotals.

Step	Condition Type	Description	Reference Level	Manual	Requirement
1 2 3 4 5 6	PROO KAOO RAO1	Price Gross Value Offer Discount Discount Discount value Net Value	2 3-4	×	2 2 2 2
7 8 9	HA00 HD00	Header discount Freight Net Values 2	-	X	-
10	MWST SKTO	Output tax Cash disc. basis Cash discount	_	_	

Table 3.2 Pricing Procedure

Pricing condition in the pricing procedure can be marked in the following ways:

- ► As a mandatory condition
- ► As a manually entered condition
- ► For statistical purpose only

Last but not least, we have the access sequence, which is assigned to the condition type (except for the condition types configured as header condition). Access sequence is the search that defines the sequence in which the system reads the condition records for a condition type. Figure 3.1 shows an access sequence overview. Access performed by access sequence is made using a condition table. A condition table is a combination of fields that form the key for a condition record. You can also make access dependent on certain requirements.

3.1.1 **Pricing Overview**

Let's take a typical example of how an item price is determined in a document. When item information is entered, the system runs a check for appropriate pricing procedures. The relevant pricing procedure is determined based on the sales area, customer, and sales document type (these are entered in the header of a sales document). Once it finds the right pricing procedure, the system reads the condition type listed in the pricing procedure sequentially, as maintained in the pricing procedure. Based on this condition type, it determines the access sequence.

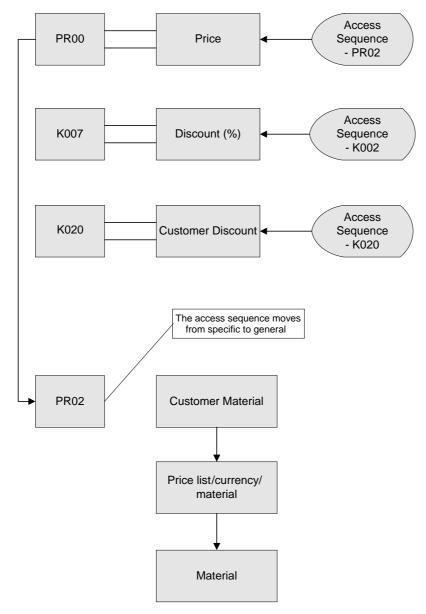


Figure 3.1 Access Sequence

The system reads the access sequence. The sequence of the condition tables represents the search strategy to find the relevant condition record. Each condition table represents an access, which can be made for a condition record with the specified key. The system searches for valid condition records with the key specified by the condition table (accesses). If the first

access does not find a valid condition record, then the system searches for the next access using the next condition table. Figure 3.2 gives a pricing overview.

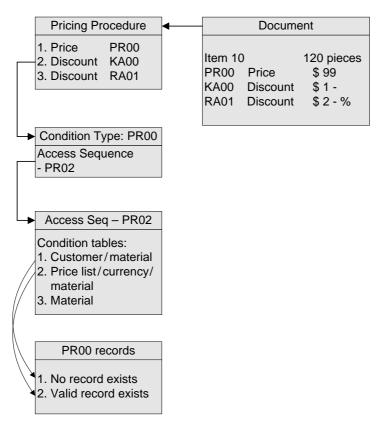


Figure 3.2 Pricing Overview

After the system finds a valid condition record for an access, the system reads the condition record and copies into the sales document the value that corresponds to the scale. The whole process is repeated for each condition type until the system has finished the entire pricing procedure.

Note

The prices, surcharges, and discounts determined automatically by the system can be changed manually and are then marked as manual changes. In condition records, you can specify limits within which a manual change can be made; e.g., for making a discount, which can only be changed between 1% and 3%. In addition to determining conditions automatically, conditions can be entered manually in sales documents. Conditions are marked as having been entered manually.

The condition maintenance screen can be accessed through SAP Easy Access, following the path: Logistics • Sales and Distribution • Master Data • Conditions. Figure 3.3 shows you the different condition maintenance options with the SAP Easy Access.

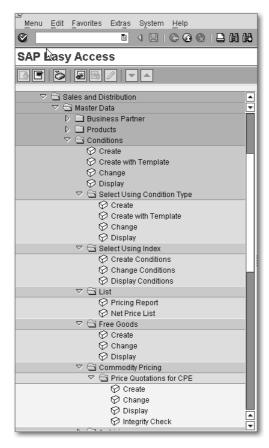


Figure 3.3 Condition Maintenance

3.1.2 **Header Conditions**

Conditions also can be entered at the document-header level, as header conditions, and are valid for all items. These header conditions are automatically distributed among the items based on net value. The basis of distributing the header conditions can be changed in the pricing procedure by selecting the appropriate routine; e.g., weight and volume, in the Alternative formula for Condition Base Value (AltCBV) field.

New Pricing 3.1.3

You can configure pricing behaviour in Pricing Type. With Release 4.5, you have the following two ways of controlling the new pricing function in the sales document:

- ▶ Update prices on the condition screens at the header and item levels. You can choose the pricing type in the dialog box that appears.
- ▶ To use the new pricing-document function for the sales document (menu path: Edit • New Pricing document), assign a pricing type to pricing procedure in Customizing. If you do not maintain an entry, the system uses pricing type B (Carry out new pricing). These functions are supported in the sales and billing documents.

Copy control makes it possible to handle re-pricing of billing documents based on several different scenarios. While all customers will not use every possible pricing type, the ability to specify what will happen to pricing calculation during billing is a decision each customer has to make.

Pricing Configurations 3.1.4

Condition tables contain the keys that can be used to create dependent condition records. You can add your own condition tables using tables from 501 through 999. Condition records are always created using specific keys. Condition tables are used to define the structure of the keys of a condition record. The SAP standard system provides most of the important fields used in pricing at the header and item levels. The key fields of a condition table must appear at the start of the table.

With release SAP R/3 4.5, you can also add non-key fields to the condition tables. This is explained in condition table 144, which is used in the price book (condition type PBUD).

Access Sequence 3.1.5

You can define prices, discounts, and surcharges at various levels. Each level is defined by a condition table. An access sequence consists of one or more condition tables. The order of the entries in an access sequence defines the hierarchy of the various levels. The system determines the condition records in the sequence specified.

Within each access of an access sequence, you can specify the document field or source field with which an access is performed. You can make access dependent on requirement to avoid unnecessary access, thus reducing the system load.

Document Field	Value	Access	Value	Condition Record key
Sales Organization	1000	Sales Organization	1000	1000
Distribution channel	10	Distribution channel	10	10
Price List type	02	Price List Type	02	02
Document Currency	USD	Document Currency	USD	USD
Material	M1	Material	M1	M1

Table 3.3 Source Field for Access

Table 3.3 displays the key fields of document used as a condition record key. So you could have a record value of \$100 for a key combination of Sales Organization (1000), Distribution Channel (10), Price List Type (02), Document Currency (USD), and Material (M1), and \$200 for a key combination of Sales Organization (1000), Distribution Channel (10), different Price List Type (01), Document Currency (USD), and Material (M1).

3.1.6 **Condition Type**

After the access sequence is created, it is then assigned to a condition type. You can also create your own condition type. You can determine the characteristics of each condition type; e.g., whether the condition type represents surcharges or discounts and whether the condition type should be dependent on values or quantities. The condition types are combined in the required sequence in the price procedure.

Procedure Determination 3.1.7

Remember that you also need to maintain the pricing procedure. The pricing procedure is determined according to the following factors:

- ► Sales Area
- ► Customer pricing procedure in the customer master
- ▶ Document pricing procedure field assigned to the sales document type

Figure 3.4 shows the pricing procedure determination process

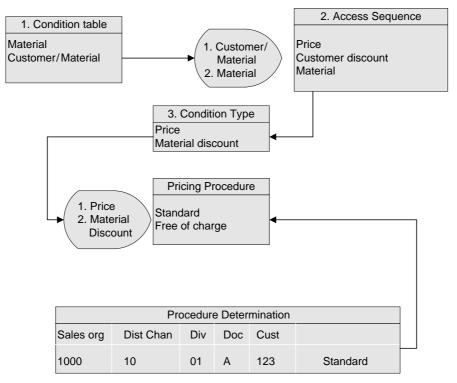


Figure 3.4 Pricing Procedure Determination

Putting it all together, the pricing component consists of the following:

▶ Condition Table

Defines the key fields of the condition records

▶ Access Sequence

Contains the hierarchy for condition record access

▶ Condition Type

Represents the properties of the pricing conditions

▶ Pricing Procedure

Defines how the condition types are linked

▶ Procedure Determination

Selects the correct pricing procedure

The following elements might be needed to implement complex scenarios:

▶ Adding New Fields for Pricing

Create new fields to meet customer requirement

► Requirements

Defines dependencies and improve performance

► Formula

Enables expanding the limits of standard configuration.

New fields may be added to the pricing field catalogue. This allows you to use the new field to define condition tables. Requirement routines and formulas make it possible to modify the standard pricing logic to meet unique user requirements. Figure 3.5 displays the configuration step screen for new field additions.

The screen shot in Figure 3.5 only displays access. To add a new field you need a special authorization object in your user profile S_TABU_CLI. Also be aware that this is a cross-client table and applies to all the clients in your system.

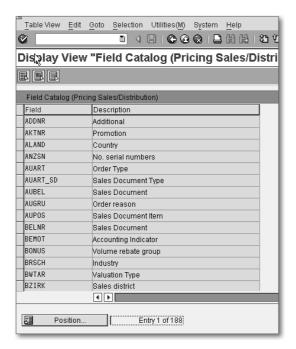


Figure 3.5 Pricing Field Catalog

Figure 3.6 displays the fields selected for the condition table from the list of the Field Catalog. We have selected the table for Material with the Selected fields on the left and the list of catalog fields (FieldCatlg) on the right.

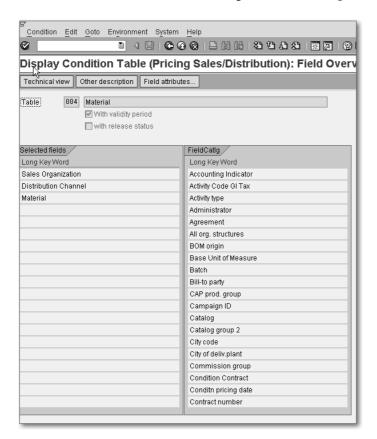


Figure 3.6 Field Catalog Selection

Working with Condition Records 3.1.8

Condition maintenance has two maintenance interfaces. You can mass maintain conditions based on characteristics like customers and material, which allows you to maintain condition records across all condition types and condition tables. The new condition maintenance function can be configured using the area menu. The standard area menu for condition maintenance is COND_AV. A user-specific area menu can be assigned by going to the menu path: Environment · Assignment Area Menu.

The user-specific area menus can be created using transaction code SE43; e.g., by copying the user menu, COND_AV, and changing it to meet specific requirements. You can also follow this menu path through SAP Easy Access: Tools • ABAP Workbench • Development • Other Tools • Area Menus.

New condition records can be created with reference to existing condition records. This can be access through the SAP Easy Access menu path: Logistics • Sales and Distribution • Master Data • Conditions Create with Template • **Prices · Material Price**. The pricing change function allows you to maintain multiple condition records simultaneously. This can be reached through the SAP Easy Access menu path: Logistics • Sales and Distribution • Master Data • Conditions • Change • Prices • Individual Prices.

Long text can be maintained for pricing and agreements, such as rebates, sales deals, and promotions. Figure 3.7 shows the SAP Easy Access for condition maintenance.

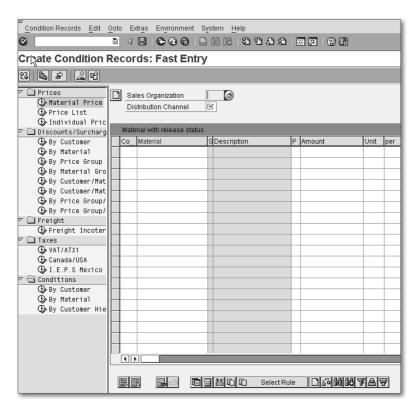


Figure 3.7 Condition Maintenance

You can create and use condition indices to search for condition records that were created for a variety of condition types and condition tables. If you create your own indices, the system automatically activates each new index when you generate it. You must also specify an update requirement for each condition index. You can configure for each condition type whether the system updates the condition indices when you post the condition records for the corresponding condition type.

You can allow a release procedure to be used when a condition table is created by selecting the with release status checkbox, as seen in Figure 3.6. This automatically adds the following fields to the condition table:

▶ KFRST

Release status as last key field

▶ KBSTAT

Processing status as a field of the variable data part (non-key field).

Release statuses are predefined as follows:

- ▶ Released
- ▶ Blocked
- ► Released for price simulation (net price list)
- ► Released for planning and price simulation (planning in CO-PA).

Calculation type for condition type is defined in Customizing. This calculation type determines how prices or discounts and surcharges are calculated for a condition. When creating a new condition record, you can select a calculation type that differs from the one set in Customizing.

Price Report 3.1.9

To provide an overview of existing condition records, you can generate a list of conditions for analysis. The layout of the lists and the conditions reported are set in Customizing. When creating a new program for pricing reports, you first decide the views in which you want to analyze the condition records. To do this, you need to select specific fields from the existing condition tables.

Depending on the fields selected, the system generates a list of tables, which contain at least one of the selected fields. From this list of tables, you can select specific tables that will appear in the report. The list layout is specified by positioning and sorting the fields that appear in the selected tables in one of the three following report sections:

▶ Page Header

A page break occurs when a value changes

► Group Header

A new line heading is generated for each table analyzed.

Detailed record information is provided.

Price reports can be accessed through SAP Easy Access by following the path: Logistics • Sales and Distribution • Master Data • Conditions • List • Pricing Report. You can create your own price report by configuring it as follows from the Display IMG: Sales and Distribution • Basic Functions • Pricing • Maintain Pricing Report • Create Price Report.

3.1.10 Special Functions

There are special pricing functions that include grouping conditions. These allow you to carry out pricing for several items in an order, compare condition types, and use condition updates. Remember that condition types are standard and delivered with pre-set business rules.

Group Conditions

In Customizing, you can set a condition type to be group condition. The condition base value, such as weight, is then calculated as the sum of the individual items within a group. The different type of group keys could be as follows:

▶ Complete Document

All quantities with the same condition type are accumulated.

► Condition Types

All quantities of condition types that have assigned group condition routine 2 are accumulated.

► Material Pricing Group

All quantities with the same condition type and material pricing group are accumulated.

Excluding Conditions

Conditions can be linked to requirements in the pricing procedure. A requirement can evaluate the condition exclusion indicator and ignore the condition if the indicator is set. The condition-exclusion indicator can be set in either the condition type or the condition record. This can be applied in a

situation where more than one condition is used for pricing and you want the highest price to be selected.

Comparing Condition Types

Condition types to be compared are placed in an exclusion group. During pricing, the conditions-which result in the best price (lowest charge or highest discount—are selected from his group. All other conditions are deactivated. The following comparison methods are available:

▶ A

All conditions found within the first exclusion group are compared and the condition with the best price is chosen. All other conditions are deactivated.

All condition records found for one condition are compared. The best price is chosen. All condition are deactivated. This method can be used with condition type PR00.

▶ C

The total of condition records found in the first exclusion group is compared to the total of comparison records found in the second exclusion group. The group that provides the best price is chosen. The conditions of the other groups are deactivated.

If a condition record is determined for the condition types of the first exclusion group, all the condition records for the second exclusion group are deactivated.

▶ E

Similar to method B, except that the worst (highest charge or lowest discount) price is chosen.

Similar to method C, except that the group with the worst overall price is chosen. The conditions of the other group are deactivated.

The condition type definition can be accessed through the SAP Easy Access by following the menu path: Tools • Customizing • IMG • Execute Project • SAP Reference IMG · Sales and Distribution · Basic Functions · Pricing · Pricing Control • Define Condition Types.

Hierarchy Pricing

Hierarchy accesses optimized pricing for hierarchy data structures, such as the product hierarchy. The functions in hierarchy accesses enable you to solve problems by using one access to a condition table. When you create the access sequence to use this condition table, you need to define at the field level whether each field is a fixed component of the key or whether the field is optional. Priorities are assigned to the optional fields in the next step. During pricing, the system sorts the records found with this single access according to priority and uses the record with the highest priority. Hierarchy accesses also provide clear and easy master data maintenance because the different condition records for a condition type can be created together in the quick entry screen for maintaining conditions.

Special Condition Types 3.1.11

The SAP standard system provides many condition types that can be used immediately. Referencing these condition types and creating your own condition types will help you meet the business requirement based on these standard delivered condition types.

Manual Pricing

The header condition type HM00 allows you to enter the order value manually. The new order value is then distributed proportionately among the items, taking into account the previous net item value. Taxes are determined again for each item. The PN00 condition in the standard system allows you to specify the net price for an item manually. The original conditions are deactivated.

Minimum Price Value

You can use the condition type AMIW for minimum order value. If the value in the order header is less than this minimal order value during pricing, the system automatically uses the minimum as the net order value. The minimum order value is a statistical condition.

Condition type AMIW is a group condition and is divided among the different items according to value. Calculation formula 13 is assigned to condition type AMIZ in the pricing procedure. This formula calculates the minimum value surcharge by subtracting the net item value from the minimum order value. AMIW.

You can use condition type PMIN for material minimum price. If the minimum price is not met during pricing, the system determines the difference using condition type PMIN.

You can maintain condition records with interval scales if the condition type is set to the scale type D in Customizing. Interval scales cannot be used for group conditions.

Hierarchy Pricing

Customer hierarchies are available in Sales Order Management so that you can create flexible hierarchies to reflect the structure of the customer organizations. These hierarchies could represent different groups within a company. You could use this hierarchy during the sales order and billing process in determining pricing and runtime statistics. Customer hierarchy consists of the following elements:

- Master record for each node
- ► Assignment of nodes
- ► Assignment of customer master record to node

With customer hierarchy, you can assign a price or rebate agreement to a higher-level node. The agreements are then valid for customers at all subordinate levels of this node. You can create pricing condition records for each node indicated as relevant for pricing. If one or more nodes in the hierarchy of a sales order contain pricing information, the system takes these nodes into account automatically during pricing according to the underlying access sequence.

Discount and Surcharges

KP00 condition type is controlled by formula 22 in the pricing procedure, which only takes the number of complete pallets into account to give a pallet-level discount. KP01 condition type uses formula 24 in the pricing procedure to charge customers with surcharges for incomplete pallets. The mixed pallet discount (KP02, group condition-X and unit of measure-PAL) accumulates the quantities of individual items and calculates the discount for a complete pallet. The mixed pallet surcharge is controlled by formula 23, which calculates the fractional proportion of the total mixed quantity for a full pallet.

Rounding Difference

You can maintain a rounding unit in Table T001R for each company code and currency. If the final amount in the order header differs from the rounding unit, the system rounds the amount up or down as specified. Condition type DIFF determines the difference amount. This is a group condition and is distributed among the items according to value.

Statistical Condition Types

You might have a requirement to determine prices for statistical purposes in a way that doesn't change the net value of the item. This can be achieved by marking the condition as statistical. For example, the material cost from the material master could be used for information purpose or as a statistical condition.

Condition type VPRS is used to retrieve the standard cost of the material and this is used as statistical condition. It uses the condition category G to access the valuation segment of material master for getting the standard cost or moving average cost, as specified in the material master. Condition category G accesses the standard cost, whereas condition category T always accesses the moving average cost. The profit margin is calculated using formula 11 in the pricing procedure; this subtracts the cost from the net value.

The condition type SKTO is used to retrieve the cash discount rate. The pricing procedure uses this condition type as a statistical value. Table T052 is accessed using condition category E, and an amount is calculated from the first percentage rate of the item payment terms.

Condition type EDI1 is used for comparing the net price with customer expected price. You can use the EDI2 condition type to compare the overall item value, which is obtained by multiplying the net price and the quantity. Calculation formula 9 is assigned to condition type EDI1 with maximum deviation of 0.05 currency units, and formula 8 is assigned to EDI2 with maximum deviation of 1.0 currency units. If the customer's expected price differs from the automatically determined price or value by more than the maximum difference allowed, the system considers this order incomplete when the order is saved.

Determining Taxes, Rebates, and Agreements

The criteria for determining taxes are departure country (the country of the delivering plant from the sales document), destination country (country from the ship-to party from the sales document), tax classification maintained in the customer master, and material tax classification accessed using departure country (maintained in the material master). The system determines a tax rate in the order/billing document on the basis of the following three criteria:

- ▶ Business transaction: domestic or export/import
- ► Tax liability of the ship-to party
- ► Tax liability of the material

You can define a promotion or general marketing plan for a product line for a certain period of time. You can then link this promotion with specific sales deals, which then are linked to special condition records used for promotional pricing or discounts.

A rebate is a discount, which is granted subsequently to a rebate recipient on the basis of a defined sales volume within a certain period. Rebate agreements are created to determine the values required for a rebate settlement with the validity period of the rebate agreement.

Determining Taxes

Taxes are calculated in SAP SD using the normal condition techniques. The condition type for tax is entered into the pricing procedure. Figure 3.8 on the next page displays the tax determination in pricing procedure. The access sequence is used to find the appropriate condition record for the current situation.

Tax procedure is assigned in the default for Financial Accounting by country. For example, for the United States there are the following options:

- ► TAXUS (taxes calculated in SD)
- ► TAXUSJ (taxes calculated in the central tax procedure using the tax jurisdiction value stored in the master data for the ship-to party)
- ► TAXUSX (taxes calculated through a remote function call (RFC) and a central tax procedure)

The jurisdictional and the third-party tax are calculated, after the procedure has been determined and the corresponding pricing procedure in SD uses the appropriate condition types. If the tax procedure assigned is TAXUSJ, the pricing procedure RVAJUS uses the condition types UTXJ, JR1, JR2, JR3, and JR4. The condition type UTXJ initiates the tax calculation.

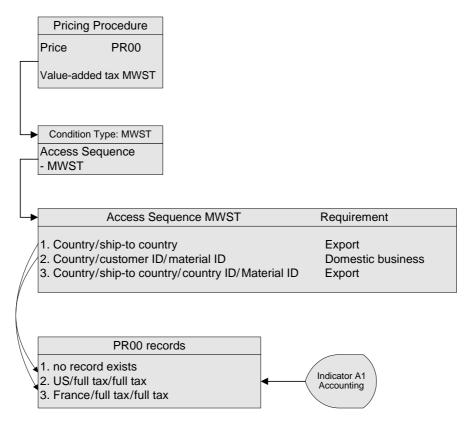


Figure 3.8 Tax Determination Procedure

Promotions and Sales Deals

You can maintain the sales deal through SAP Easy Access, following the menu path: Logistics • Sales and Distribution • Master Data • Agreements • Promotion • Create. You can also create condition records for discount and associate those with sales deals to represent the different process steps they go through. The possible values are given below:

► _ > Released

Assigned when a sales deal is released for processing

► A > Blocked

Asigned when a sales deal is blocked from processing

▶ B > Released for price simulation

Sales deal is specifically released for price simulation and not for processing it through.

► C > (CO-PA)

Released specifically for price simulation and planning (CO-PA)

Rebate Agreements

You can define rebates at as many levels as you want, similar to any other pricing condition. The SAP standard system provides the following agreement types:

- ► Material
- ► Customer
- Customer hierarchy
- ► Material group rebate
- ► Independent of sales volume

The rebate agreement is created with a specific rebate agreement type. The features of each rebate agreement type are set in Customizing. Table 3.4 displays the rebate agreement types delivered in the SAP system.

Agreement Type	Condition Table	Condition Type
0001	Customer/Material Customer/rebate group (percentage rebate)	B001 B001
0002	Customer/Material (absolute rebate)	B002
0003	Customer (percentage)	B003
0004	Customer hierarchy Customer hierarchy/material (percentage)	B004 B005
0005	Independent sales volume	B006

Table 3.4 Pricing Agreement

Condition records are linked to the rebate agreement specifying the rebate rate and the accrual rate. With the rebate agreement, you can specify the condition type to be used and the validity period.

3 Key Techniques in Sales and Distribution

The rebates are different from other discounts, as they are based on sales volumes. A settlement run creates the required credit memo request automatically. When the rebate-relevant billing documents are processed, accruals can be determined and posted automatically. You can use the rebate credit memo to reverse these accruals.

The rebate processing needs to be activated for the sales organization, payer master record, and billing document type. The rebate processing begins by creating a rebate-relevant billing document. If it is not needed, rebate processing must be deactivated, as it might affect performance.

Rebate Settlement

The system uses the accumulated amounts in the rebate agreement to create a rebate settlement. The settlement can be performed manually, automatically, and in the background (batch programs RV15C001 and RV15C002). Accruals are reversed as soon as the rebate agreement is settled by credit memo. Partial rebate settlement can be limited for each rebate agreement type, such as:

- ▶ Up to the accumulated accrual amount
- ▶ Up to the calculated payment amount for the current date
- ▶ Unlimited

Retroactive rebate agreement allows you to take into account the billing documents created before the rebate agreement was created. Now let's look at the configuration steps in setting up the rebate agreement:

- 1. Follow the menu path: Display IMG Sales and Distribution• Billing Rebate Processing Activate Rebate Processing.
- 2. Click on Select billing documents for rebate processing.
- 3. Navigate to the menu path: **Display IMG Sales and Distribution Billing • Rebate Processing Activate Rebate Processing.**
- 4. Click on Activate rebate processing for sales organization.
- 5. Maintain in the payer's customer master record.

Let me conclude the pricing discussion with a reference to some useful information. Table 3.5 displays the different conditions.

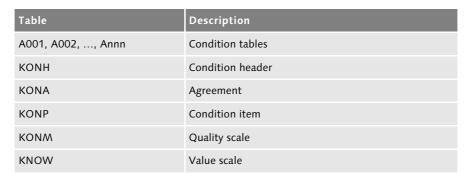


Table 3.5 Condition Tables

You can also look at Figure 3.9 to see a typical pricing procedure.

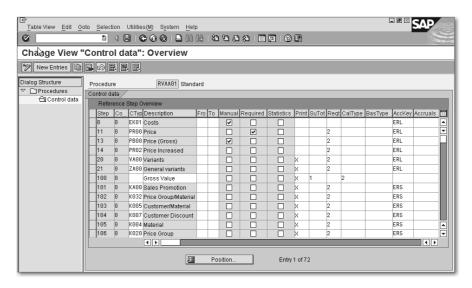


Figure 3.9 Pricing Procedure

Having learned the condition technique that is applied in pricing, let's see how partner determination works. Partner determination is used within the sales transactions for determining different business partners.

Making Partner Determination Work for Your Business 3.2

You might have different business relationships with different business partners, involving the roles of customer, vendor, employee, and contact person. Some examples are as follows:

▶ Vendor-Customer

The vendor acts as a forwarding agent to the customer.

► Contact Person-Customer

The contact person is employed at the customer's company, or is the customer's consultant, but doesn't work in the same company.

▶ Customer-Customer

The sold-to party and ship-to party are different parties.

► Employee-Contact Person

The contact person is looked after individually.

▶ Employee-Customer

This is the relationship you maintained with the Customer manager.

These business partners are represented by various partner types in the SAP R/3 or in the mySAP ERP system. Some examples of partner type are AP for contact person, KU for customer, LI for vendor, and PE for Personnel.

Partner Functions 3.2.1

While using partner types allows you to distinguish between different businesses partners, partner functions represent the roles played by business partners within the business transaction. For example, you could have one customer ordering the part, one who receives it, and another one pays for it.

Assigning partner functions in SAP SD determines the functions of particular partners in the sales processes. One partner might take on several functions, such as:

- ► SP
 - Sold-to-party
- ► SH
 - Ship-to-party
- ► BP
 - Bill-to-party
- ► PY
 - Payer

Forwarding agent

Employee responsible

In the simplest case, all the partner functions within the customer partner type would be assigned to one business partner. In other words, the same customer could be the sold-to party, ship-to party, payer, and bill-to party.

You can enter contact persons for a customer directly in the customer master, and this information will be automatically assigned to that customer. This contact person can be assigned to another customer; e.g., in a consultant role.

Transportation services are performed by the forwarding agent. These might include organizing the shipment, delivery and receipt of the goods, arranging carrier services, and handling custom issues. A vendor could take up this partner function role.

The SAP standard system delivers a set of partner functions, so before you create a new one, check the existing ones. The partner function configuration can be reached through the menu path: Tools • Customizing • IMG • Edit Project • Select SAP Reference IMG. Then configure as: Sales and Distribution → Basic Functions → Partner Determination. Click on **Set up Partner Deter** mination. This will provide a pop-up window with options for setting up partner determination for the following:

- Customer master
- ▶ Sales document header
- ► Sales document item
- ▶ Delivery
- ▶ Shipment
- ▶ Billing Header
- ▶ Billing Item
- Sales Activities

If Customizing allows, you can change or supplement these relationships manually by going to the partner screen and changing the function assignment. In Customizing, you can decide whether several partners can be assigned to one partner function in the customer master. If multiple partners of the same function are maintained, a selection list containing these partners appears when you enter the sales order. In the sales documents, the system has been configured so that only one partner can be assigned to each partner function. The only exception is for outline agreements (partner functions AA and AW). Figure 3.10 displays the configuration steps in partner function definition and determination.

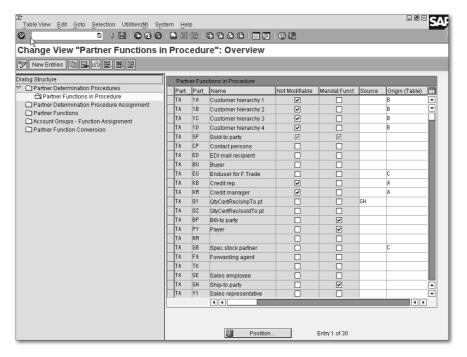


Figure 3.10 Partner Function Definition

You can also define partners at the item level in the sales documents. Business partners are only defined in the header and cannot be changed in the item. You can configure so as to prohibit anyone from changing the partner entered. It is possible to change the address of the partner, and this doesn't affect the master record.

The configuration starts with the partner function definition in the procedure along with other settings, as shown in Figure 3.10. As a next step, you need to assign the partner determination procedure to the appropriate sales document type. Within the Partner Functions configuration step you need to assign the partner type (whether it is a customer, vendor, or individual). The configuration step Account Groups-Function Assignment allows you to map the account group to the partner function.

3.2.2 **Customer Master and Account Group**

Partner function determines which partner assumes specific business function within the sales process and which account group controls the customer master record. Some examples of the account group are: 0001-Sold-to party, 0002 - Ship-to party, 0003 - payer, and so on. The following criteria are determined, while defining account groups:

- ▶ Data fields displayed and whether maintainance is mandatory, optional, or not possible.
- ► The number range
- ▶ A number of other control elements, for partners and texts of customer master records.

A ship-to party compared to another ship-to party might involve different customer master records. The billing information might not be required, and the correspondence fields are displayed.

Partner Function Specific to Account Group

You can restrict the allowed partner functions by account group in an organized sales processing. This control is accomplished by assigning partner functions to account groups. Examples include: Account groups 0002 (soldto party), 0003 (payer) or 0004 (bill-to party).

Partner Determination Procedure

Partners appear in the system at different levels, such as the customer master, the sales document header, and the sales document items. You can define your own partner-determination procedures for each of these levels:

- ► Customer master
- ► Sales document header
- ▶ Sales document item
- ► Delivery
- ▶ Billing header
- ► Sales activity (CAS)

A partner-determination procedure is where you determine which partner functions should or must appear on the sales documents. You determine areas of validity by assigning procedures. The partner procedures are assigned to the partner objects as follows:

- ▶ Partner object to Assignment key
- ► Customer master to Account group

- ► Sales document header to Sales document type
- ▶ Sales document item to Item category in sales
- ► Delivery to Delivery type
- ► Shipment to Shipment type
- ▶ Billing header to Billing type
- ▶ Billing item to Billing type
- ► Sales activities (CAS) to Sales activity type

Figure 3.11 displays the partner determination procedure assignments set up for configurations.

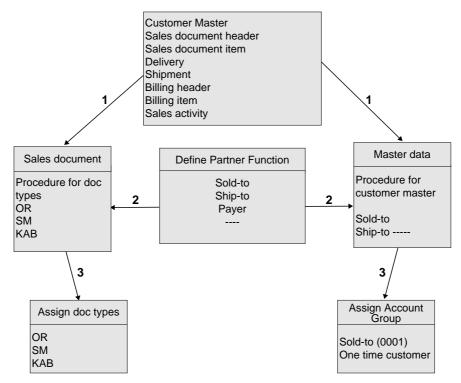


Figure 3.11 Partner Determination Procedure

Indirect Partner Functions

You can use other sources to automatically determine business partners in sales documents, such as the tables for customer hierarchy (KNVH), contact person (KNVK), credit representatives (T024P), and so on. Now that we have covered partner determination, we can move on to working with text items.

Working with Text Items 3.3

Information exchange is a key function within the logistics supply chain between business partners. This exchange of information is supported in SAP SD in the form of texts in master records and documents. Texts are available in the areas or functions of the logistics system (sales texts-notes for customer, shipping texts—shipping instructions in deliveries, internal notes, supplement texts, etc).

Text can be copied or carried through the document flow, from sales order to delivery. The copying of texts can be made language dependent. Based on the configuration setting, you can propose text from master data to the documents when they are created.

Text can be maintained at central locations, for accounting, marketing, external sales notes, partner notice, shipping, etc. These can be accessed in the customer master's create, change, or display transactions thus: Extras • Texts. For example, you can maintain notes for accounting in the customer master by branching out to accounting view in the customer master and then going to the menu path: Extras • Texts.

Text in Sales and Distribution Documents 3.3.1

Sales documents consist of inquiries, quotations and sales orders. The sales document text could reside in a header (header note, shipping requirement) or an item (material sales text, packing note). With deliveries, you could have a text referenced from the preceding document or without reference for header and item. Similarly, you can have header and item text for billing.

Header text refers to the entire document and can be found in the header document. The header text of the SAP standard system appears in the top of the text and should be reserved for important information. Another important standard text of SAP standard system is supplementary text, which appears in the bottom of all the texts.

Item texts are specific to the item and can be maintained separately for each item. The material sales text is an important item text copied from the material sales text and carried forward. You can also overwrite the text as you can other texts.

Not all the texts are activated for sales and distribution forms: some are meant for internal purposes. These are individually maintained in the customizing setting. The three main configuration steps are:

- ▶ Define text types
- ▶ Define the access sequence for determining texts (which uses the condition techniques)
- ▶ Define and assign the text-determination procedure

Figure 3.12 displays the configuration steps for customizing text determination.

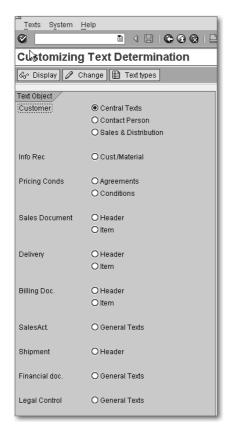


Figure 3.12 Text Determination

In the Figure 3.12 icon bar there are three icons: **Display**, **Change**, and **Text** types. You can display the text types in the system by clicking on Text types. Text types are client independent, so if you want to create a new one, you need to have the specific authorization: S_TABU_CLI. To maintain the text determination, select the specific object and the text area under which it falls.

Figure 3.13 displays the sales header text-determination procedure. We see the text determination procedure for sales header. If you select that and double-click on the Text IDs in the Textprocedure, you will see Text IDs listed in the sequence with the indicator for reference or duplication, followed by access sequence. If you create a new procedure, you need to maintain a similar entry here. The folder within the access sequence provides the details behind access sequence, search sequence, text application object, and the mapped Text ID. The last folder lists the assignment of text-determination procedure to sales document type.

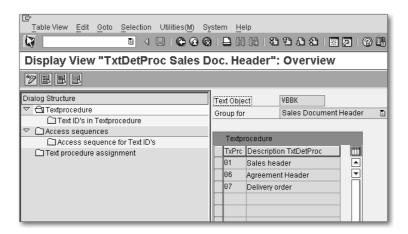


Figure 3.13 Sales Header Text Determination Procedure

Copying and Referencing Sales Texts 3.3.2

Text can be copied from the preceding document. This copying requirement uses the access sequence of condition techniques. Some text might be carried forward to the end of the logistics chain without being changed or altered. SAP SD provides you two options, one to reference the text from the original and one to duplicate it.

With duplication, the changes in the specific document don't affect the preceding document. Reference documents use less space, as they are not copied to the follow-on documents. We can now move on to copy control and requirements.

Copy Control and Requirements 3.4

In copy control, you determine which document types can be copied to other document types. Copy control helps you control the movement of data or information from the source document to target. SAP uses documents to identify business transactions. Sales orders, deliveries, shipping memos, billing, etc. within the logistic chains have information copied over or carried forward to the next process or document in the SAP system.

Another important function of the copy control is to check the prerequisite for the process before it can be processed. For example, creating a delivery might require a purchase order number or availability of the material, and these are checked during the copy control dynamically.

As we know, the sales cycle flows from inquiry to quotation to sales order to delivery (to transport order for warehouse management) to billing document or invoice. Copy control applies individually for each source and target combination; e.g., inquiry to quotation, quotation to sales order, sales order to delivery. For billing documents created out of the sales orders directly, the copy control from sales order to billing document should be maintained. For sales orders created from contracts, the copy control from contact to sales order should be maintained.

You could create a sales order copy from another existing sales order, for reference purposes or to reduce the date-entry time. For this you need to maintain copy control from a sales document to a sales document type. If you don't maintain the copy control from a source document type to a target document type and try to create the target document copying from the source, the system will prompt you with an error.

Configuring Copy Control in SD 3.4.1

You can define control data for a flow of documents. You can specify, for a particular sales document type, which document type is to be assigned to copied reference documents, and which item categories or schedule line categories are to be copied. You also must set the requirement specifications for copying requirements and data transfer, as well as quantity and value updates in the document flow. This must be done for each copying procedure at header, item and—if necessary—schedule-line level.

When you define a new sales document type by copying with reference, the SAP system copies all the specification of the reference original document. You can make specific changes to these settings based on your business requirement.

As mentioned earlier, copy control can be defined in different process steps of the supply chain (sales order to delivery to billing). The configuration for copy control from quotation to sales order can be found under the section sales document to sales document. Copy control from sales order to delivery can be found under sales document to delivery. Copy control from sales document to billing can be found under sales document to billing while copy control from delivery document to billing document can be found under delivery document to billing document. Copy control for creating billing document with reference to another billing document can be found under billing document to billing document. An example of this is the credit memo from invoice.

Configuration can be accessed through SAP Easy Access, following the menu path: Tools • Customizing • IMG • Edit Project • Select SAP Reference IMG • Sales and Distribution • Sales • Maintain Copy Control for Sales documents. Then choose copy control. Figure 3.14 displays the copy control from source to target document type options. Let's take the example of sales document to sales document. In Figure 3.14 you can see the copy control from a quotation to a sales order.

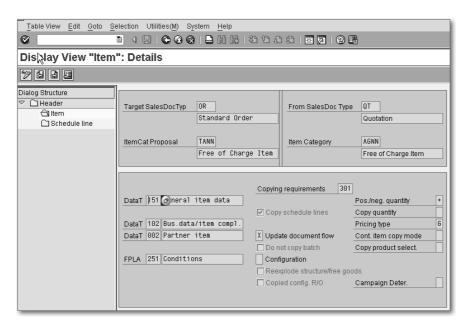


Figure 3.14 Copy Control

Copy controls in shipping can be found in the Display IMG by following this path: Logistics Execution • Shipping • Copy Control. Copy control for billing can be found under Display IMG by following the path: Sales and Distribution · Billing · Billing Documents · Maintain Copy Control for Billing documents.

In Figure 3.14 you can see the data transfer routines for header, item, and partner, DataT. The copy requirement is an ABAP code, which checks if specific requirements are met before copying. Here you define the target sales document type and the associated item category, source document type, and associated item category. The FPLA routine is meant for transferring condition records. If you check the copy schedule lines, the system will carry the schedule line information from source document to target.

If you want the document flow to be updated, you need to check the configuration. Pricing type setting allows you to set the pricing re-determination or re-calculation in the document. You have configuration options for copying quantity, pricing type, etc. Figure 3.15 displays the source-to-target configuration steps needed to match the sales structure.

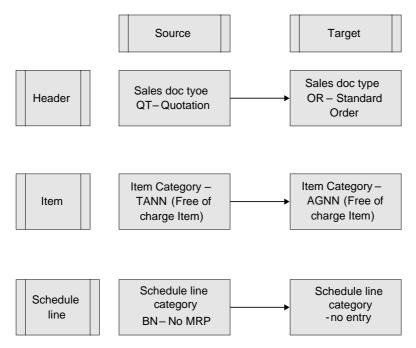


Figure 3.15 Source-to-Target Configuration Steps

Data Transfer Routines and Requirements 3.4.2

Data transfer routines control the way fields are copied from the reference document. With the copy requirement, you define requirements that are checked when a document is created with reference to another. If these requirements are not met, the system issues a warning or error and, if necessary, terminates processing.

You can define indicators or switches for setting specific controls for each transaction. For example, you can activate or deactivate the transfer of item numbers. As we saw in Figure 3.14, the copy requirement can be defined for each level, as follows:

▶ Header

Copy requirement at this level can check the instance to see whether the sold-to party and the sales area in the source and target document are the same.

▶ Item Level

Copy requirement at this level can check by instance whether the item that is used as a copy has a reason for rejection or status completed.

► Schedule Line Category

Copying requirement at this level for instance can check whether only a schedule line with an open quantity greater than zero is copied.

Routine and requirements are written in ABAP/4 code and can be processed in Customizing in SD under system-modifications transaction VOFM. The recommended approach would be to copy the standard and make necessary changes to the code by adding or deleting the line of code to meet the requirement.

Summary 3.5

In this chapter, I covered some key techniques of Sales and Distribution. Because pricing is one of the important functions, we went over the fundamentals, as well as, some additional features of this powerful functionality. Partner determination is another important functionality, which helps the organization define its business relationship within the transaction. Text is used as an information-sharing placeholder, and we saw how this information flows from one document to another through text types and procedures. The logistical or supply-chain processes are represented by the functions within the process and in SAP they are represented by document flow. Copy control helps you control the data flow from one process to another.

In Chapter 4, we will explore sales and distribution's influence on materials management. When you create a sales order, material availability is checked against the inventory and this function crosses SD and performs the function within SAP Materials Management (MM). We will learn how these are carried out. We will look at different sales transactions that use the materials-

Key Techniques in Sales and Distribution

management functions, with Cross-Company Sales and Intercompany Sales. Similarly, there are functions within MM that use the SD functionality, such as the stock transport orders for shipping, delivery, and goods movement. Third-party processing is used in sales orders, which use MM functions for processing. Similarly the subcontracting purchase order uses many SD functions. Finally, we will touch on the agreements initiated in SD and processed through the MM functions.

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