

Process Flow Hierarchy



HELP.SVASAPROZ

Release 4.6C



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Icons

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Process Flow Hierarchy

PDM – Product Data Management

Definition

SAP Product Data Management (PDM) supports you when creating and managing product data for the entire life cycle of the product.

SAP PDM offers a complete solution for management of:

- Product Data
- [Engineering Change Management \(ECH\) \[Page 20\]](#)
- Product Structure Data
- Development projects

Use

Product Data

You can manage all types of technical, business, and administrative documents with the SAP *Document Management System (DMS)*. The original application files can be linked to a range of objects in the SAP System, such as material master records, bills of material (BOMs), projects, customers, and change master records. In addition, you can access the documents with an external optical archive system. You can use Redlining functions for original application files of a document info record. You can write your comments on the original application file like when using a red pen.

The material master record is a central data object in the SAP System and contains all data for parts, products, semifinished products, raw materials, operating supplies, production resources/tools, and other types of material.

You can store general data that is relevant to the entire company here. Much of this data is defined in the engineering/design or standards department, such as material number, descriptions in various languages, weight, basic material, and classification data. However, data that is relevant to specific functions, such as sales, material requirements planning (MRP), and work scheduling, can also be managed. You can make this data available to various departments by using different views on a material master record.

You can classify all types of objects in the SAP System with the *Classification System*. For example, you can use your own criteria to classify and structure data from materials, processes, production resources/tools, documents, inspection criteria, customers, and vendors. Engineers can use the Classification System to choose similar parts (find duplicated parts) to avoid building, producing, and ordering parts redundantly. This saves time and reduces costs.

The SAP System supports a *CAD integration interface* for the integration of development and engineering/design processes in the logistics chain of a company. However, this interface is not only used for the integration of CAD systems. You can integrate all types of development applications into the SAP System, for example, office packages, graphical information systems, or plot management systems.

Engineering and Change Processes

Engineering Change Management (ECH) in the SAP System provides a basis for documentation of modifications over the entire life cycle of a product. The original data is logged as well as the changes, allowing you to trace the complete product history.

PDM – Product Data Management

Another important function of Engineering Change Management is its complete integration of planning and execution of changes in the logistics chain of a company. Engineering Change Management ensures that planned changes to master data are automatically available at specific times in such productive functions as sales, demand management and MRP, shop floor control, and product costing.

Product Structure Data

Bills of material solve the problem of differentiating between an engineering BOM and a production BOM. In order to ensure that this functional differentiation works, you can either create separate BOMs or define different views of the same BOM.

An undeniable trend at the moment is towards products with a multitude of variants. Therefore, product/variant configuration must be fully integrated into the logistics chain of your company. You can run checks while configuring a product, to ensure that the configuration is complete and consistent, thereby avoiding such impossible combinations as a convertible with a sunroof.

The graphical *Product Structure Browser* lets you display all the objects in your product structure and go directly to the processing function for any one of them. You have access to all data that is relevant to the product. This includes data stored outside of the actual engineering/design environment. The relations between all objects in the product structure are displayed graphically.

The Product Structure Browser is now integrated into Configuration Management (CM) Workbench for navigation and processing in *Configuration Management*. Here you collect all objects that describe a product or project in a specific lifecycle phase, in a metaobject, in order to generate consistent, reproducible configurations.

Development Projects

In modern PDM systems, the definition and control data for large product development projects is managed using a *Project System*. This allows for the easy completion of complex tasks within cost and capacity intensive projects that are limited in time.

A project can be structured in the SAP Project System by using *work breakdown structures* (WBS) and *networks*.

The WBS defines the structures for the organization and control of the project and outlines the project in individual, hierarchically organized structure elements.

The network (flow chart) sets up the elements from the WBS in a time-based sequence. You can use the network to define, for example, which events are dependent on each other in the project and which activities are required next or need to be defined in more detail. You can use standard work breakdown structures and networks as templates for managing new projects, to reduce the workload.

Project Information System, project planning board, progress analysis, and cash budget management ensure control and transparency during the course of a project.

As part of Collaborative Engineering and project management, you can also use the Internet to send product structures, project structures, and documents relevant to the development project from the SAP System to selected participants. The participants send the objects, revised as necessary, or comments back to you. You then check them and adopt them, to the extent desired, in the SAP System.

The **enterprise area PDM** is divided into:

- [Product initiation \[Page 12\]](#)
You describe your product idea and perhaps carry out an analysis of the competition, and plan your project for product development.

PDM – Product Data Management

- [Product definition \[Page 14\]](#)
You define the product specifications and create the first alternative solution in the form of design drafts and draft design BOMs. You also define the product structure in detail with material master records, material BOMs, documents, and document structures, perhaps with the help of a CAD system, using the CAD interface. You can also classify the product if you wish.
- [Product maintenance \[Page 19\]](#)
You support the service activities of your company, by assigning serial numbers, for example. You may want to use equipment and functional locations to structure your product from a service point of view.
- [Engineering change management \[Page 20\]](#)
Here you can make systematic changes to product data throughout the entire life cycle of the product. This data can be BOMs, task lists, documents, materials, objects from the Classification System (such as characteristics or classifications), or object dependencies. Engineering Change Management is integrated in logistics processes.
- [Product data distribution \[Page 22\]](#)
SAP supports an integrated, distributed implementation. This fills the requirement set by users for cost-effective concepts for distributed application systems that offer a high degree of integration and can be detached for local use. SAP's technological initiative for distributed application systems is *Application Link Enabling (ALE)*. ALE makes business process controlled communication between technically independent applications possible. You can use ALE to distribute product data, such as materials, BOMs, documents and original files, change master records, revision levels, and classification data from one SAP System to another.

Product Initiation

Product Initiation

Purpose

This scenario concerns the first phase of product development. The trigger may be an inquiry, a quotation, an order, or a new development for the make-to-stock market. The SAP Project System supports the development. SAP DMS and the SAP Classification System also come into use.

Process Flow

Document Management System

The SAP Document Management System supports you in structured description and storage of your product ideas. You can define completely separate document types in order to keep your product ideas separate from other documents. The document info record is a central object in document management and is flexible enough to be used for recording administrative data and any other data you require. The Classification System lets you define customer-specific fields for this additional information, which you can then search on. You can also use document info records to link to and manage any type of file including scanned-in drawings and text of any kind.

Analysis of the Competition

You can execute an analysis of the competition to monitor and evaluate the activities of your competition. The required data is collected, for example, by your sales personnel during the course of the business day and stored in a special material master record for competitive products in the SAP System

You create a material master record for a competitor product (material type WETT) in the same way as an internal material master record. You can enter basic information like material description, material group, weight, and volume. You must assign a product to a certain competitor. You can enter a product hierarchy on the basic data screen of the master record. The product hierarchy helps you to analyze the product range of a competitor and compare it to your own. You can enter texts with detailed information for each competitor product. You can put a link to the competitor's website in the master record of the competitive product.

Processing Customer Inquiries and Quotations

The customer sends an inquiry about creating a new, customer-specific product. The inquiry contains a description of the product and its basic requirements.

You create a customer quotation based on the inquiry. Next, you carry out a feasibility study, verifying whether the product can be realized technically and commercially.

Project System

The SAP Project System supports your complex product development process. Before creating a new project you can, for example, use the Classification System to search for similar projects. In the Project System, you can create templates for work breakdown structures (WBS), networks, and milestones. This way, you can store structures that are used often in the system, and use them later as the basis for creating operational structures.

The WBS is a hierarchical arrangement of the project activities to be carried out. The WBS is the basis of cost and finance planning, scheduling, and budget assignment. The planned process flow for product development is represented in the network. An activity is created for each task.

You can map time-based dependencies between processes by using relationships. You can refine the project structure as the project progresses.

Documents and drawings that specify the individual project tasks are stored using the Document Management System, classified, and assigned to individual work packages in the WBS, or to activities in networks.

The scenario ends when you release the project.

Budgeting

You can use the results of cost planning to determine the project budget. The SAP System's availability control facility supports you in monitoring the budget. Budget overruns can be detected automatically, enabling you to take prompt countermeasures. Releasing the budget and the project triggers processing.

Product Definition

Product Definition

Purpose

You process product specifications in this scenario. Engineering and BOM drafts are made. You then define the product structure in detail using material master records, material BOMs, documents and document structures, and perhaps a CAD system connected to the CAD interface. Classification allows for later re-use of the assemblies and parts created and describes the properties of the new product.

Process Flow

Specifications

You detail the requirements of the product in a product specification. Parallel to the product idea description (see also Scenario product initiation), you can use the SAP Document Management System (DMS) to display your product specifications with your own document types.

The SAP DMS supports you when creating engineering drafts, even in many alternatives. You can assign detailed specifications or engineering/design drafts to separate component for example represented by your own work breakdown structure element by using links to the structures of the project system.

For a detailed description of objects in the technology environment you can use the specification system. The specified objects that you want to use in a technical system can be based on these descriptions for production and procurement. The description of the functions of the objects is done using templates. Data sheets are used for detail specification from a device point of view.

Design

You can use either document structures or material BOMs for structuring your product for the first time. If you want to work with material BOMs, you must create a material master first. You can define your own material types to differentiate between production-relevant material masters and development material masters. You can also create your own numbering scheme that simplifies the maintenance interface.

Document Management System

This phase of product development is characterized by intensive document processing. The SAP Document Management System (DMS) supports your entire product development process. You can store all the data you require, such as CAD drawings, photographs, or contracts. You can use the external applications; such as Office applications, viewers, CAD Systems to create, process, and view original application files. For security reasons, you can store specific versions of your data in a secure storage area (vault), and archive them for your records. You can use status management to define the process flow for a document, from when you create it to when you release it.

You can use digital signatures for status changes to make the approval and release procedures more secure. Individual signatures and signature networks, which require several users, are supported in this process.

If you use Engineering Change Management to regulate your product development process, the change master record defines a validity period for a document version.

In *document processing*, you enter the basic data for the document, such as person responsible, descriptions, and status information. You can also link documents directly with SAP objects.

These include materials, production resources/tools, activities in a network, WBS elements, and other documents.

You can link documents to each other in a hierarchy, by defining superior documents. To create more complex hierarchies, you can use *document structure processing*. You can group various documents to form units of information by using document structures. For example, you can manage the entire documentation of a very complex product that comprises text files, various technical drawings, photos, maintenance manuals, and films for user instruction. The *document search* allows you to use data from the document key, classification data, basic data, or linked objects to find documents. The document search can be done even without access to a SAPGUI of the SAP System.

Material Master

The material master is your company's central source of material-specific data. It is used by all components in the SAP Logistics System. The integration of all material data in a single database object eliminates redundant data storage.

In this phase of production development and design you create basic data and other central data, such as classification, for a material. This data can be used later by other company areas such as purchasing, materials planning, sales and distribution, and can be maintained in further material master views. These views can be set up in Customizing according to your company's requirements.

Bills of Material

Bills of material that you create for materials are known as material BOMs in the SAP System. The data of material BOMs can be used in different internal areas of a company. The SAP System differentiates between the use of BOMs in engineering/design, production, costing, sales and distribution, and plant maintenance. You can use separate BOMs for different areas of use so that each enterprise area receives its own BOM. Another way to differentiate between the individual areas of use is to create different views of the same BOM. You can flag BOM items as relevant to engineering/design, production, and so on.

A BOM has an area of validity as well as a validity period. There is also a distinction between group BOMs and plant-specific BOMs. This separation solves the problem of engineering/design BOMs and production BOMs. To ensure that an engineering/design BOM is identical throughout the company, it is defined as a group BOM and maintained by the engineering/design department. However, the plant that makes the product is responsible for the production BOM. The production BOM can vary according to plant, and it is therefore defined by each plant individually.

A material master record must exist before a BOM can be created.

BOMs that are directly related to a sales order can be created as order BOMs. You use the status to control the material master and which processes such as costing, production planning, use the master data at the same time.

Inspection Plans

You describe the process flow of a quality inspection of plant-specific materials in inspection plans. You can use an inspection plan for the quality inspection of several plant-specific materials. You can also group inspection plans that belong together. The inspection plan can include various processes where a process determines which activity is to be executed at a work center. Operations can contain several inspection characteristics. An inspection characteristic describes what is to be inspected.

Product Definition

Routings

You use routings to plan the production of materials (products). Routings are used as a template for production orders and run schedule headers as well as a basis for product costing. A routing can be used for the production of various plant-specific materials and contains a series of operations that describe how a step in the process is to be executed. The grouping of operations in sequences allows mapping of parallel or alternative process sequences of operations. Several similar routings and their operations are summarized in a group.

An operation can be separated into suboperations to describe the step in more detail. Either the operation or an individual suboperation refers to the work center where it is executed. An operation can also contain a certain quantity of material components or production resources/tools.

Production Resources/Tools

You can also determine which production resource/tools are required for each process. Production resource/tools (PRTs) are moveable operating facilities that are used in production or maintenance. The SAP System differentiates the following types of PRTs according to properties and business functions:

- Materials included in, for example, inventory management, position management, and inventory management and material management
- Equipment, for example, measuring tools, or expensive tools that need regular maintenance.
- Documents, for example, drawings, or programs that you manage using the Document Management System
- Other PRTs (with PRT master record maintenance) that require less work in maintenance.

You can assign PRTs as required to operations in routings, maintenance orders, and production orders, to activities in standard networks, and to phases in master recipes.

Classification

To classify objects, you use the functions of the Classification System. Use the following processes to set up the Classification System:

- Define properties by processing characteristics.
Characteristics represent the properties of objects. You create characteristics centrally in the SAP System.
- Create classes by processing classes.
To classify objects, you assign the objects to classes. You must set up these classes first. Characteristics are assigned to the classes.
- “Classification” – once you have created the classes you require, you can classify objects by assigning them to the classes. You use the characteristics of the class to describe the objects. You can also use the classification process to set up a class hierarchy.

Object Dependencies

Object dependencies describe the interdependencies between objects. This can deal with the dependencies between characteristics and characteristic values such as 21 gears are only allowed on a racing bicycle. Object dependencies can also be used to control the number of BOM items and routing processes during variant configuration.

A special syntax allows you to describe these dependencies. You enter this syntax in the dependency editor. Different types of dependencies can be used to represent different interactions between objects.

Variant Configuration

You can use Variant Configuration to describe complex products that can exist in several variants, such as cars. All variants are represented in one variant product. This variant product has a super BOM containing all possible components, and a super task list containing all possible operations.

When you assign a class to the variant product, you link the product to the characteristics that describe a specific variant. You use object dependencies to control that the right components and operations from the super BOM and the super task list are selected.

For each configurable object you must maintain a **configuration profile**, where the configuration parameters are maintained. The configuration profile for materials controls the procedure for configuration in sales orders.

Object dependencies ensure that only permitted combinations of properties can be selected. Object dependencies also ensure that only BOM components and task list operations needed to manufacture a variant are chosen.

You can check the possible configurations after you have configured your variant product. In this way you can determine whether you have maintained the objects correctly or whether the object dependencies were correctly created. The **configuration simulation** is used for this purpose. You can choose the simulation of a BOM explosion or a routing explosion.

When executing a simulation for a configurable material, you can assign various values and observe their effects on BOM explosions and routing explosions.

You can use existing configurations of the material as a template for the simulation. You can also transfer the configuration to sales orders, production orders, or material variants.

Product Structure

The product structure gives you information about all PDM objects (such as materials, BOMs, documents, change master records, revision levels, and versions) and their relations to each other in graphical form. You can navigate within a product structure and branch to object management. You can also execute other functions with the help of the product structure such as transferring change objects into a change master record or documents to a recipient list or add comments to the original application files of a document info record using Redlining function (markup).

You can define various views by using different filters, such as material type, document type, engineering/design offices, BOM usage.

The product structure can be exploded across different systems, supporting navigation through several connected SAP Systems. The Product Structure Browser is a central part of the distributable integrated PDM solution that allows you to carry out product development and product execution on separate systems. The Product Structure Browser is now integrated into Configuration Management. Here you collect all objects that describe a product or project in a specific lifecycle phase, in a metaobject, in order to generate consistent, reproducible configurations.

CAD Integration

CAD systems are used intensively in the scenarios of product development and engineering. You configure the interface to a CAD system to enable online data transfer and dialog between a SAP

Product Definition

System and a CAD system. You can define models and drawings in your CAD system and define material BOMs and document structures.

The following are among the processes supported by the interface:

- Material master record processing using CAD interface
- BOM processing using CAD interface
- Document processing using CAD interface
- Change master record processing using CAD interface
- Information transfer using Office functions/CAD interface

Project Monitoring and Confirmations

The many activities carried out during the project are monitored, and the degree to which they achieve their aims is assessed. To do this, you compare the actual dates with the planned dates. The basis for this is the confirmations made for individual activities in the network.

Project Completion

The goal of project closing is to receive data about the project in order to determine the results and settle the costs incurred on the project receivers. The project data can then be used as a basis for new development projects.

Service

Purpose

This scenario represents a service, for example, for technical installations or machines. A serial number and a material number are assigned to each product to ensure clear identification. In addition, equipment and functional locations are defined for the installation location of each product.

Process Flow

Serial Numbers

Serial numbers as well as material numbers are assigned for individual material in order to differentiate the individual pieces from all others. The combination of material number and serial number are unique.

Equipment

A piece of equipment is an individual, physical unit that is to be maintained as an autonomous unit. Equipment can be installed in a functional location for a period of time or can be installed on superior equipment. It can be used at several installation locations during the course of its useful life. Pieces of equipment can be arranged in a number of levels and can be linked with each other to represent complex equipment. This represents the network-like structure of the complete technical system and the dependencies between equipment units.

Equipment Bill of Material

The equipment bill of material (equipment BOM) is a directory you use to describe the structure of equipment and to assign spare parts needed for maintenance to it. An equipment BOM can be created for a particular piece of equipment or for a group of technical objects.

Functional Locations

The functional location outlines the objects to be maintained according to functional, process-oriented, or spatial viewpoints. It represents the location where maintenance tasks are carried out or an installation area where the equipment is set up.

Every functional location can be individually managed in the system so that you can:

- Manage data from a maintenance viewpoint
- Execute individual maintenance tasks
- Verify of the finished maintenance tasks
- Evaluate and collect technical data over a longer period of time

Equipment can be installed or dismantled at functional locations. The operating times of the equipment at the functional location are documented in the schedule.

The hierarchical structure of a functional location allows you to maintain data from a superior level centrally and therefore also underlying subordinate levels (hierarchical data transfer).

Engineering Change Management

Purpose

Engineering Change Management (ECH) controls and documents related changes to basic data and ensures a regulated flow of changes into operational structures.

An important characteristic of SAP ECH is its full integration into the logistics supply chain of your company. ECH ensures that planned changes to the basic data in the operational functions of sales and distribution processing, production planning, material requirements planning, shop floor control, product costing, quality management, and materials management are automatically read at a certain point in time. SAP ECH can be used for the following SAP basic data objects: BOMs, plans, documents, materials, objects from the classification system, such as characteristics, classification, or object dependencies. Important change statuses of documents and material can be indicated by revision levels.

Process Flow

Change Messages

Change messages can be used over the enterprises Intranet to register engineering issues and suggest product improvements. A change message can be created for internal service requests in your Web browser. Individual users as well as departments and business partners can use your Intranet for change messages.

Engineering Change Request / Engineering Change Order

A change is clearly defined and set in the SAP System by means of a change master record. You differentiate between an engineering change request and an engineering change order independently of the status of the change master record. This difference represents the approval procedure and release approval procedure in a company and can be additionally supported by SAP Business Workflow.

The engineering change request can be created in a purely descriptive form without reference to related objects. Otherwise, you can enter the objects in the engineering change request if they are already known at this time. When you approve an engineering change request after checking, the status *Approval granted* is set and the engineering change request is converted into an engineering change order. You can now change the relevant items with reference to the engineering change order.

Change Master Records

Because change master records can be classified in the SAP Classification System, it is possible to structure changes and find them easily.

The combination of many change objects in a change master record can cause the change lists to become difficult to read in some cases. Additionally, very complex change plans require organization specific processes for different objects, such as BOMs or routings. You can use the *hierarchy of change master records* to structure complex product changes more clearly in different views, for example, organizational or functional. An engineering change hierarchy is constructed out of change master records with the functions leading change master record and change package.

In addition to time-related change validity, that is a change is valid after a set date, *parameter effectivity* can be used. The effectivity type time interval is defined as part of the standard SAP

Engineering Change Management

System that you can use, for example, to control seasonal product changes. The serial number interval allows you to include object change statuses dependent on serial numbers of an end product. In addition, you can define further enterprise-specific effectivity parameters with types of your choice.

Release Key

You control the release of changes into the operational areas by means of a release key in the change master record. The change statuses of all objects that were processed with this change master record are read when you set the key to released.

You can carry out not only a global release process for all operational areas, but also a release for individual enterprise areas. In this way, the release for calculation, planning, and production are supported.



If, for example, a changed product structure is not yet released for planning and production, but is needed for preliminary costing, then a release key must be set in the appropriate change master record to released for costing. Other releases for, for example, all areas, can follow.

Order Change Management

ECM is integrated with Order Change Management in order to allow changes up to the very last minute. Order Change Management (OCM) is an easy-to-use way to change already processed production orders to fit the changed product structure. The trigger can be set off by either releasing an engineering change, or a change supplement, or postponing an engineering change, or when a customer's wishes change, for example, configuration changes are made.

Electronic Signatures

The electronic signature was created in order to, on the one hand, permit effective IT-supported engineering change management in business software and, on the other, satisfy the legal requirement for having approval documents bearing signature of the responsible person on file a given length of time.

The SAP Engineering Change Management supports the electronic signature as part of the approval process.

You can stipulate in Customizing whether one or more electronic signatures are required to set a status in the change process for every status of engineering change requests and engineering change orders, as well as object management record.

Product Data Distribution

Purpose

The trend toward globalization of businesses places high demands on the organization of product data. There are often several development and production locations with their own systems.

Product data distribution / Integrated Distributed PDM ensures a continuous flow of data through all phases of the product development process. For example, the system landscape of a company may comprise a central PDM system and several ERP systems. Using Application Link Enabling (ALE), master data from the PDM system is distributed to the various ERP systems. This ensures consistent master data maintenance across systems. All master data belonging to the PDM environment (materials, BOMs, documents, change master records, and classes) can be distributed.

Process Flow

Manual Distribution of PDM Objects

A user triggers sending of master data objects manually. All data belonging to the master data objects to be sent is also sent.

Automatic Distribution of PDM Objects

You can have changes to master data in the PDM system automatically distributed to the ERP systems by using the *Shared Master Data Tool* (SMD tool).

The SMD tool logs changes to master data objects by using change pointers. It is connected to the change documents interface. To use the SMD tool to distribute master data, change documents must be generated whenever a master data object is created, changed, or deleted.

Cross-System Navigation

You can use the graphical Product Structure Browser to evaluate master data across multiple systems. This means that you can use the browser to check the master data that you have distributed.

Document Distribution

You can use document distribution to distribute original application files of documents to defined recipients. You can start the distribution manually or couple it to the processing status of the document, for example release.

You can maintain a recipient list for each document. Many different recipient types are supported, such as office user, external companies and contact persons, SAPoffice distribution lists, and organizational units. Many distribution types make it possible to send documents by using different media and to different scenarios. For example, you can send documents by SAPmail, e-mail, fax, to a printer, or plotter.

Production Planning and Procurement Planning

Definition

The **Production Planning and Procurement Planning** enterprise process area includes the business processes for sales quantity planning and demand management planning. It is positioned in front of the business areas **Production** and **Procurement** and provides these areas with the necessary information about quantities and scheduling for the products to be produced or procured.

The entire planning process is run within this area, starting from the medium to long-term sales and production operation planning, across demand management and MPS right up to detailed MRP. Finally the result of this planning process is planned orders, which determine which material has to be produced/procured in which quantity and on which date, so as to cover the customer and stock requirements that occur. These planned orders are then converted into concrete production orders, process orders or run schedule quantities in **Production**. In **Procurement** the planned orders are changed into purchase requisitions.

In the areas of **Production** and **Procurement** processes for evaluating and processing the capacity situation are also used.

Use

Production planning and procurement planning is used in all industry areas and supports numerous planning strategies. Strategies ranging from [Market-orientated planning \[Page 24\]](#) through [Consumption-based planning \[Page 27\]](#) to [Sales order-orientated planning \[Page 26\]](#) mean that all planning strategies are established.

Market Oriented Planning

Purpose

Market oriented planning describes planning that is carried out independent of sales orders and is oriented to market requirement dynamics. Incoming sales orders are supplied by warehouse stock (planning with final assembly) or they trigger the production of the finished product (planning without final assembly).

Process Flow

In Sales and Operations Planning (SOP), the sales quantities are planned weekly or monthly, for example, on product or product group level. An operations plan is created using the sales quantities, possibly taking the target stock level into consideration, for example. Even on this rough level, you can include the affect that the planned quantity has on capacity in planning.

The quantities determined in SOP can be then be transferred as independent requirements to Demand Management. If the rough plan was based on a product group, the planned quantities are divided into the individual materials according to their proportional factor. In Demand Management, the requirements from incoming sales orders are accounted for as individual customer requirements. Depending on the planning strategy, these are then settled against the existing planned independent requirements. The result of Demand Management is the demand program.

You could use long-term planning to create and simulate different versions of this demand program in requirements and capacity planning.

Before you carry out a detailed planning run, you can plan master schedule items separately.

Requirements planning then has to cover requirements by receipts if they cannot be covered by existing stocks. The result of the planning run is planned order, amongst others, that are converted to production orders (for in-house produced materials) or to purchase requisitions (for externally procured materials).

The following pre-planning strategies are available in this scenario (selection):

- **Planning final products with final assembly**
 - Planning with final assembly (40)
 - Net requirements planning (10)
 - Gross requirements planning (11)
- **Planning final products without final assembly**
 - Planning without final assembly (50)
 - Planning a material variant without final assembly (55)
 - Characteristic planning with dependent requirement (56)
 - Planning with planning material (60)
 - Planning a material variant with planning material (65)
- **Planning assemblies/components**
 - Planning at assembly level (70)

- Planning without final assembly at assembly level (74)

Make-to-Order Planning

Make-to-Order Planning

Purpose

Make-to-order planning describes the planning of a product that is specially manufactured for a specific sales order. You use sales order oriented planning when it is not necessary or not possible to plan a product.

Neither Sales and Operations Planning (SPO) nor Demand Management are included in this scenario. The sales orders are included directly in material requirements planning.

Process Flow

The sales orders are planned as customer independent requirements in material requirements planning. A separate planning segment is generated for make-to-order production.

Starting at the sales order, you can define how low in the BOM structure make-to-order planning is permitted, which means that assemblies and components are procured just for the pegged requirement (the sales order) and their inventory is managed for this sales order.

The resulting planned orders are transferred to production and the material is manufactured with reference to the sales order.

The following pre-planning strategies are available in this scenario (selection):

- Make-to-order production (20)
- Make-to-order production with configuration (25)
- Make-to-order production for a material variant (26)

Consumption-Based Planning

Implementation Options

Consumption-based planning is based on past consumption values and uses the forecast or other statistical procedures to determine future requirements. Procurement is triggered either when a defined order point is fallen short of (reorder point) or by forecast requirements, which are calculated based on past consumption.

If you use forecast requirements, the consumption pattern should be fairly constant or linear with few irregularities. A prerequisite is an efficient and current inventory management.

Process Flow

The forecast, which calculates future requirements using historical data, is carried out at regular intervals. The forecast values have a direct effect in MRP as forecast requirements.

If you use reorder points, an order proposal is always generated when the warehouse stock falls below the reorder point.

Distribution Resource Planning (DRP)

Distribution Resource Planning (DRP)

Purpose

The objectives of *Distribution Resource Planning* (DRP) in the SAP System are:

- To improve customer service levels by anticipating customer demand at distribution centers and providing finished products at the correct location when customer needs arise.
- To provide an accurate requirements plan for manufacturing.
- To optimize the distribution of available stock in the distribution network using the deployment function.

During the net requirements calculation the system compares the available stock and the planned receipts from the source of supply with the planned independent requirements and the incoming sales orders. If there is a material shortage (available stock is less than the quantity required), the system creates an order proposal.

The DRP process can be used for the entire supply chain including the production plants. DRP includes the production and purchasing in the planning process for the production plant.

Prerequisites

In order to perform a DRP run, you must:

- Set up a distribution network, including identification of quota arrangements and lead times.
- Define MRP parameters in the material master record for all materials in the distribution network.

Process flow

Schedule the DRP runs for your network as you would a planning run.

1. Select or change the appropriate segment of your distribution network.
2. Within *Flexible Planning* create a requirements forecast for distribution centers and plants.
3. After the forecast results have been transferred to demand management, the relevant planned independent requirements are generated.
4. These planned independent requirements are converted in the various variants of the DRP run into concrete purchase requisitions or orders.
 - A DRP run on a single material is the same as single-item, single-level planning in the planning run. Since the deployment plan involves finished goods, only single-material, single-level planning of individual materials without explosion to lower levels is available.
 - A DRP run for a single plant is the same as total planning in the planning run. Single-plant planning involves planning all the materials in a certain location that are relevant for requirements planning.
 - A DRP run using mass processing allows you to process several locations at once such that the whole supply chain is planned.

Distribution Resource Planning (DRP)

Result

- The DRP run results include purchase requisitions and orders or scheduling agreements. You can use these results to plan how the distribution centers in your network should be supplied.
- The DRP run in the distribution centers creates calls for stock transfer purchase requisitions in the supplying plants.
- A DRP run for the supplying plants creates planned orders for production.

Procurement

Procurement

Definition

The task of the enterprise area **Procurement** is to ensure that an enterprise is supplied with the necessary input materials and services it needs in order to produce the products and perform the services it sells.

A major aspect of procurement is the provision of the necessary input elements as and when they are required and at minimum cost. The procurement function is not only responsible for ensuring that an enterprise is adequately supplied with raw materials, operating supplies, semi-finished products, and trading goods – it also embraces goods receiving activities (including checking and stock putaway), quality inspection of incoming materials, invoice verification, and the release of invoices for payment.

Use

The procurement function covers both the *operational procurement of materials and services* and the *administration and management of sources of supply*. In this connection, a distinction is made between external suppliers (vendors) and internal suppliers (the enterprise's own plants).

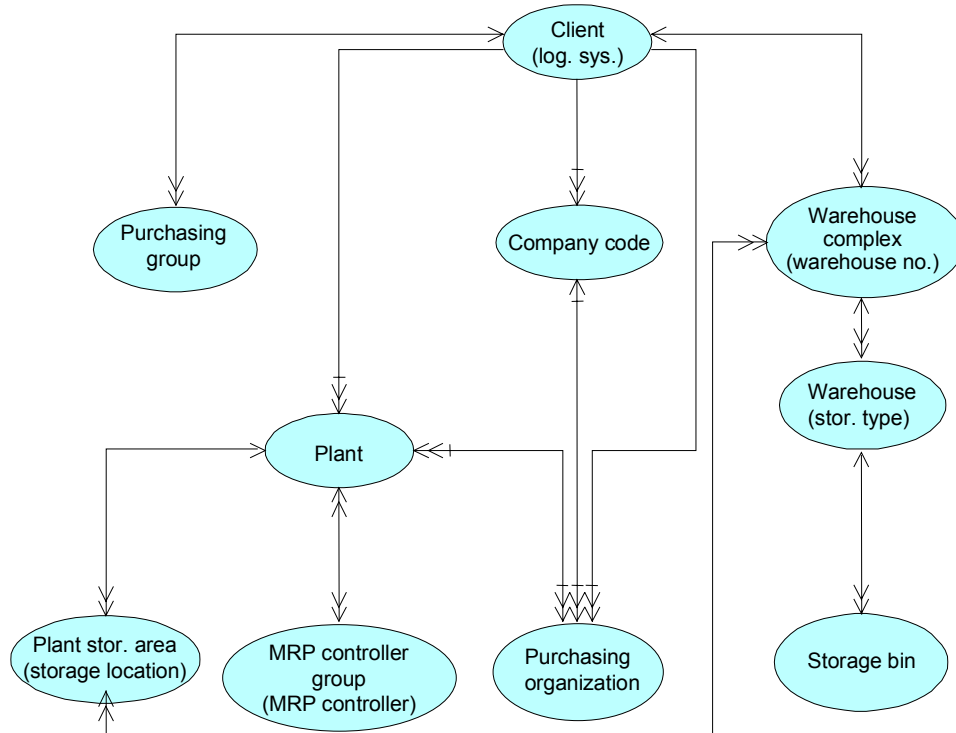
The operational procurement of materials and services includes the following tasks:

- Identifying and quantifying requirements of materials and services
- Procuring materials and services
- Monitoring timely delivery by suppliers
- Receiving deliveries of materials (including stock putaway where appropriate) and acceptance of services provided
- Verifying vendor invoices with regard to the materials actually supplied and services actually provided
- Checking the quality of materials delivered

Sourcing administration involves the following tasks:

- Determining suitable sources of supply
- Entering into longer-term supply relationships in the form of outline purchase agreements
- Determining the validity of sources of supply and the extent to which they are actually used

Procurement Organization Diagram



[Legend \[Ext.\]](#)

Procurement of Materials and External Services Management

Purpose

This scenario describes the procurement of materials and services from an external supplier (vendor).

“Procurement of Materials and External Services” describes the integrated use of the following R/3 components:

SAP Component	Functions
Purchasing	Create purchase requisitions, Create, transmit, and release purchase orders/contract release orders/SA delivery schedules
External Services Management	Enter and accept services performed
Warehouse Management/Inventory Management	Place materials into storage; manage, and value stocks
Quality Management	Inspect quality of goods received against a purchase order
Invoice Verification	Post invoice and arrange payment

Prerequisites

The relevant *Quality Management* process flows in this scenario are described in detail in [QM in Materials Management \[Page 124\]](#).

Process Flow

Purchase Requisition

The scenario begins with the generation of a purchase requisition:

- In the production or materials planning areas, the system is able to generate purchase requisitions **automatically**.
- If a need for a material or service arises in other areas of the enterprise, the relevant purchase requisition has to be created **manually**.

Purchasing

1. Once they have been created, you can assign requisitions to a source of supply, taking previous purchase orders or contracts into account in the process. If no suitable source of supply exists, you must:
 - a) Issue requests for quotation to potential vendors
 - b) Compare the quotations you receive in response
 - c) Assign the purchase requisition to one of the quotations receivedIf required, the vendor must have been approved by Quality Management.

Procurement of Materials and External Services Management

Purchase requisitions to which a release strategy has been assigned must be released (approved) before they can be converted to purchase orders, contract release orders or scheduling agreement (SA) delivery schedules.

2. Depending on the source of supply, you create and transmit one of the following documents:

- Scheduling agreement delivery schedule
- Purchase order/contract release order

Purchase orders subject to release strategies must be released before they can be sent to the vendor.

3. You monitor the order. The system is able to automatically print urging letters for you to send to the vendor, as required.

4. You can maintain vendor confirmations (e.g. acknowledgments and shipping notifications) relating to purchase orders or scheduling agreement delivery schedules. These enable precise planning, as you always have reliable information on expected deliveries in the period between ordering goods and the requested delivery date. Shipping notifications can be referenced at the time of goods receipt, allowing you to identify and investigate any quantity differences in good time.

Goods Receipt

As soon as the ordered goods arrive, you post the goods receipt. The material is thus recorded in the inventory management system. If the material is subject to a certificate requirement, you must confirm the existence of such a certificate.

The goods receipt triggers the following activities:

- Quality Inspection
- Placement of the material into storage (stock putaway)
- Settlement with regard to the goods received

Acceptance of Services Performed

You record the services actually performed by the service provider (*actual* services) in a service entry sheet. In doing so, you can reference the purchase order. This is the procedure if the services being recorded were pre-planned in detail. At the time the services actually performed are entered into the system, each individual item of the entry sheet is recorded with its *actual* value. The next step is to accept the services listed in the service entry sheet.

Invoice Verification

When the vendor's invoice arrives, you match it with the purchase order or the goods receipt. After investigation and clarification of any discrepancies, you release the invoice for payment.

If the invoice verification process reveals any variances that the buyer needs to discuss with the vendor, you can park the invoice and continue processing it later.

Under certain circumstances, you can post an invoice as soon as you have posted the goods receipt (Evaluated Receipt Settlement). This allows you to settle up with regard to goods receipts without receiving an invoice from the vendor.

Storage

When the R/3 System releases the GR quantity after incoming inspection has given the all-clear, you place the goods into storage.

Procurement of Materials and External Services Management

If the continuous inventory method is employed in your warehouse or stores, the system updates the necessary data at the time of stock putaway.

Procurement of Subcontract Materials

Purpose

This scenario describes the procurement and management of a material sourced from a subcontractor (external supplier performing subcontracting work such as external processing or assembly).

In subcontracting, the vendor receives materials (components) which are then used to manufacture the finished product.

“Procurement of Subcontract Materials” describes the integrated use of the following R/3 components:

SAP Component	Functions
Purchasing	Create purchase requisitions, Create and transmit purchase orders/contract release orders/SA delivery schedules, Monitor provision of material to vendor
Warehouse Management/Inventory Management	Placement of material into storage; manage, and value stocks, Manage and replenish stocks of materials provided to subcontractor, Post subsequent adjustments for components
Quality Management	Inspect quality of goods received against a purchase order
Invoice Verification	Post invoice and arrange payment

Prerequisites

The relevant *Quality Management* process flows in this scenario are described in detail in [QM in Materials Management \[Page 124\]](#).

Process Flow

Purchase Requisition

Procurement of subcontract materials begins with the generation of a purchase requisition:

- In the production or materials planning areas, the system is able to generate purchase requisitions **automatically**.
- If a need arises in other areas of the enterprise, the relevant purchase requisition has to be created **manually**.

Purchasing

1. Once they have been created, you can assign requisitions to a source of supply, taking previous purchase orders or contracts into account in the process. If no suitable source of supply exists, you must:
 - a) Issue requests for quotation to potential vendors
 - b) Compare the quotations you receive in response

Procurement of Subcontract Materials

- c) Assign the purchase requisition to one of the quotations received

If required, the vendor must have been approved by Quality Management.

Purchase requisitions to which a release strategy has been assigned must be released (approved) before they can be converted to purchase orders, contract release orders or scheduling agreement (SA) delivery schedules.

- 2. Depending on the source of supply, you create and transmit one of the following documents:

- Scheduling agreement delivery schedule
- Purchase order/contract release order

Purchase orders subject to release strategies must be released before they can be sent to the vendor.

You can monitor the stocks of components maintained on the subcontractor's premises for the subcontracting work ordered and replenish them if they are running low.

- 3. You monitor the order. The system is able to automatically print urging letters for you to send to the vendor, as required.
- 4. You can maintain vendor confirmations (e.g. acknowledgments and shipping notifications) relating to purchase orders or scheduling agreement delivery schedules. These enable precise planning, as you always have reliable information on expected deliveries in the period between ordering goods and the requested delivery date. Shipping notifications can be referenced at the time of goods receipt, allowing you to identify and investigate any quantity variances in good time.

Goods Receipt

- 1. As soon as the ordered goods arrive, you post the goods receipt. The material is thus recorded in the inventory management system. If the material is subject to a certificate requirement, you must confirm the existence of such a certificate.
The goods receipt triggers the following activities:
 - Quality Inspection
 - Placement of the material into storage (stock putaway)
 - Settlement with regard to the goods received
- 2. If variances occur in the consumption of components (input materials) by the subcontractor during the manufacture of the ordered product, you must post the amount of any over- or underconsumption.

Invoice Verification

When the vendor's invoice arrives, you match it with the purchase order or the goods receipt. After investigation and clarification of any discrepancies, you release the invoice for payment.

If the invoice verification process reveals any variances that the buyer needs to discuss with the vendor, you can park the invoice and continue processing it later.

Under certain circumstances, you can post an invoice as soon as you have posted the goods receipt (Evaluated Receipt Settlement). This allows you to settle goods receipts without receiving an invoice.

Procurement of Subcontract Materials

Storage

When the R/3 System releases the GR quantity after incoming inspection has given the all-clear, you place the goods into storage.

If the continuous inventory method is employed in your warehouse or stores, the system updates the necessary data at the time of stock putaway.

Procurement on a Consignment Basis

Procurement on a Consignment Basis

Purpose

This scenario describes the procurement and management of a material that is sourced from a consignment vendor.

Consignment means that a vendor makes available to you materials he owns but which are stored on your premises. The vendor retains the title to the relevant material until such time as you make a withdrawal from the consignment stores. Only when you do this do you incur a liability toward the vendor. Invoicing is carried out at agreed intervals (such as monthly). The parties to the agreement may decide that the customer is to transfer all remaining consignment stocks to his own stock after a certain period.

“Procurement on a Consignment Basis” (consignment buying) describes the integrated use of the following R/3 components:

SAP Component	Functions
Purchasing	Create purchase requisitions, Create and transmit purchase orders/contract release orders/SA delivery schedules
Warehouse Management/Inventory Management	Place materials into storage; manage, and value stocks
Quality Management	Inspect quality of goods received against a purchase order
Invoice Verification	Post invoice and arrange payment

Prerequisites

The relevant *Quality Management* process flows in this scenario are described in detail in [QM in Materials Management \[Page 124\]](#).

Process Flow

Purchase Requisition

Procurement on a consignment basis begins with the creation of a purchase requisition:

- In the production or materials planning areas, the system is able to generate purchase requisitions **automatically**.
- If a need arises in other areas of the enterprise, the relevant purchase requisition has to be created **manually**.

Purchasing

1. Once they have been created, you can assign requisitions to a source of supply, taking previous purchase orders or contracts into account in the process. If no suitable source of supply exists, you must:
 - a. Issue requests for quotation to potential vendors
 - b. Compare the quotations you receive in response
 - c. Assign the purchase requisition to one of the quotations received

Procurement on a Consignment Basis

If required, the vendor must have been approved by Quality Management.

Purchase requisitions to which a release strategy has been assigned must be released (approved) before they can be converted to purchase orders, contract release orders or scheduling agreement (SA) delivery schedules.

2. Depending on the source of supply, you create and transmit one of the following documents:

- Scheduling agreement delivery schedule
- Purchase order/contract release order

Purchase orders subject to release strategies must be released before they can be sent to the vendor.

3. You monitor the order. The system is able to automatically print urging letters for you to send to the vendor, as required.

4. You can maintain vendor confirmations (e.g. acknowledgments and shipping notifications) relating to purchase orders or scheduling agreement delivery schedules. These enable precise planning, as you always have reliable information on expected deliveries in the period between ordering goods and the requested delivery date. Shipping notifications can be referenced at the time of goods receipt, allowing you to identify and investigate any quantity variances in good time.

Goods Receipt

As soon as the ordered goods arrive, you post the goods receipt. The material is thus recorded in the inventory management system. If the material is subject to a certificate requirement, you must confirm the existence of such a certificate.

The goods receipt triggers the following activities:

- Quality Inspection
- Placement of the material into storage (stock putaway)
- Settlement with regard to the goods received

Invoice Verification

Settlement with regard to the materials that you withdrew from consignment stock is carried out without an invoice having been received from the vendor. Invoices are created in the system from the list of withdrawals from consignment stock. The vendor then receives payment based on these invoices. The invoices created in this way do not reference any purchase orders or goods receipts.

Storage

When the R/3 System releases the GR quantity after incoming inspection has given the all-clear, you place the goods into storage.

If the continuous inventory method is employed in your warehouse or stores, the system updates the necessary data at the time of stock putaway.

Internal Procurement

Internal Procurement

Purpose

This scenario describes the procurement and management of a material that is obtained from an internal supplier.

Internal procurement using a purchase order has the following advantages over a stock transfer carried out without a PO:

- You can plan the receipt in the receiving plant
- You can enter a vendor (transport vendor) in the stock transport order
- You can enter delivery costs (incidental procurement costs) in the purchase order
- The stock transport order is included in materials planning: Purchase requisitions generated by materials planning can be converted into stock transport orders.
- Goods issues can be entered using an SD delivery
- Goods receipts can be posted directly to consumption
- The whole process can be monitored using the purchase order history

"Internal Procurement" using a stock transport order (type of purchase order) with billing document and invoice describes the integrated use of the following R/3 components:

SAP Component	Functions
Purchasing	Create purchase requisitions, Create and transmit purchase orders or SA delivery schedules
Warehouse Management/Inventory Management	Manage and value material stocks
Quality Management	Perform quality inspection of goods received against a purchase order
Invoice Verification	Check and post invoice with reference to purchase order

Prerequisites

Before you can use stock transport orders with a billing document and invoice, you need a vendor master record for the issuing plant.

The relevant *Quality Management* process flows in this scenario are described in detail in [QM in Materials Management \[Page 124\]](#).

Process Flow

Purchase Requisition

Internal procurement begins with the generation of a purchase requisition:

- In the production or materials planning areas, the system is able to generate purchase requisitions **automatically**.

Internal Procurement

- If a need arises in other areas of the enterprise, the relevant purchase requisition has to be created **manually**.

Purchasing

1. Once they have been created, you can assign requisitions to a source of supply, taking previous purchase orders or contracts into account in the process. If no suitable source of supply exists, you must:
 - a. Issue requests for quotation to potential vendors
 - b. Compare the quotations you receive in response
 - c. Assign the purchase requisition to one of the quotations received

If required, the vendor must have been approved by Quality Management.
2. Depending on the source of supply, you create and transmit one of the following documents:
 - Scheduling agreement delivery schedule
 - Purchase order or contract release order
3. You monitor the order. The system is able to automatically print urging letters for you to send to the vendor, as required.

At this point you can enter an invoice based on the document data and park it so that you can process it later at the time of invoice verification.
4. You can maintain vendor confirmations (e.g. acknowledgments and shipping notifications) relating to purchase orders or scheduling agreement delivery schedules. Such confirmations enable you to plan more precisely, since in this way the vendor provides you with increasingly reliable information on expected deliveries during the period between the PO date and the desired delivery date. Shipping notifications can be referenced at the time of goods receipt, allowing you to identify and investigate any quantity variances in good time.

Goods Receipt

As soon as the ordered goods arrive, you post the goods receipt. The material is thus recorded in the inventory management system. If the material is subject to a certificate requirement, you must confirm the existence of such a certificate.

The goods receipt triggers the following activities:

- Quality Inspection
- Placement of the material into storage (stock putaway)

Invoice Verification

When the vendor's invoice arrives, you match it with the purchase order or the goods receipt. After investigation and clarification of any discrepancies, you release the invoice for payment.

If the invoice verification process reveals any variances that the buyer needs to discuss with the vendor, you can park the invoice and continue processing it later.

Under certain circumstances, you can post an invoice as soon as you have posted the goods receipt (Evaluated Receipt Settlement). This allows you to settle up with regard to goods receipts without receiving an invoice from the vendor.

Internal Procurement

Storage

When the R/3 System releases the GR quantity after incoming inspection has given the all-clear, you place the goods into storage.

If the continuous inventory method is employed in your warehouse or stores, the system updates the necessary data at the time of stock putaway.

Pipeline Processing

Purpose

This scenario describes how pipeline materials are handled and managed.

A pipeline material is a material that flows directly into the production process from a pipeline (for example, oil), from a pipe (for example, tap water), or from another similar source (for example, electricity). A material from the pipeline is always available, that is, it can be withdrawn from the pipeline at any time and in any quantity. Only when you do this do you incur a liability toward the vendor. Payment is due at certain set intervals, for example, monthly.

The pipeline withdrawal has no effect on the existing warehouse stock nor on the availability of the material.

"Pipeline Processing" describes how you integrate the following R/3 components in the process:

R/3 Component	Functions
Inventory Management	Withdraw and value pipeline material
Invoice Verification	Post invoice and arrange payment

Process Flow

Goods Issue From the Pipeline

Pipeline processing begins when you post a pipeline withdrawal. This can be posted for an order (document type 261), a cost center (document type 201), a network (document type 281), or for all account assignments (document type 291). The withdrawal is valued at the price defined in the pipeline info record.

Statistics are kept of the consumption.

Invoice Verification

Pipeline withdrawals are settled without an invoice. From the list of withdrawals, the system creates invoices that are paid to the vendor.

Sourcing Administration

Purpose

This scenario describes how sources of supply are determined and managed for materials and external services.

The following R/3 components are used:

SAP Component	Functions
Purchasing	Assign and process purchase requisitions, Create and transmit RFQs, Compare and select quotations, Enter into contracts and scheduling agreements with vendors

Prerequisites

- Purchase requisitions must have been created, either manually by the user or automatically in Requirements Planning.
- You can assign the sources of supply manually or automatically directly from the purchase requisition list.

Process Flow

Vendor

Before you determine a source of supply, a one-time vendor master record must exist for the vendor.

Request for Quotation/Quotation

1. You issue a request for quotation in the following situations:
 - There are no valid sources of supply for stock materials.
 - Quotations are to be requested for material deliveries at regular intervalsYou create a request for quotation with or without reference to a purchase requisition.
2. You enter the quotations you receive as a result of the requests for quotations issued. You select the source of supply by comparing the prices in the quotations.

Contract/Scheduling Agreement

1. You can procure the storage material by placing a purchase order referring to the quotation you selected. You can also create a contract or a scheduling agreement referring to the quotation.
2. If an MRP controller discovers that a material is in particularly high demand, he or she can enter an outline agreement requisition, asking the buyer to enter into a contract or a scheduling agreement with a particular vendor.

Return Delivery

Purpose

The *Return Delivery* scenario describes the return delivery of material that did not satisfy the necessary criteria during the quality inspection after goods receipt.

The following R/3 application components are integrated in the return delivery process:

R/3 Component	Functions
Quality Notifications	Creation of quality notifications
Warehouse Management/Inventory Management/Transportation	Picking of, removal from stock of, and return delivery of material
Invoice Verification	Cancellation of invoices

Prerequisites

A vendor can only be debited automatically if [Evaluated Receipt Settlement \[Ext.Int\]](#) (ERS) is used in MM.

Process Flow

Quality Notification

The return delivery procedure starts when the system creates a quality notification.

Outbound Shipment

Shipments are planned and processed based on the information in the quality notification.

Storage

In Warehouse Management, the material being returned is picked, removed from storage, differences are processed, and the transaction is acknowledged.

Invoice Verification

An invoice to the vendor that has already been entered is cancelled.

Production

Production

Definition

The *Production* enterprise process area covers the entire area of production control. It is directly connected to *Production and procurement planning*, and is based on the results of this.

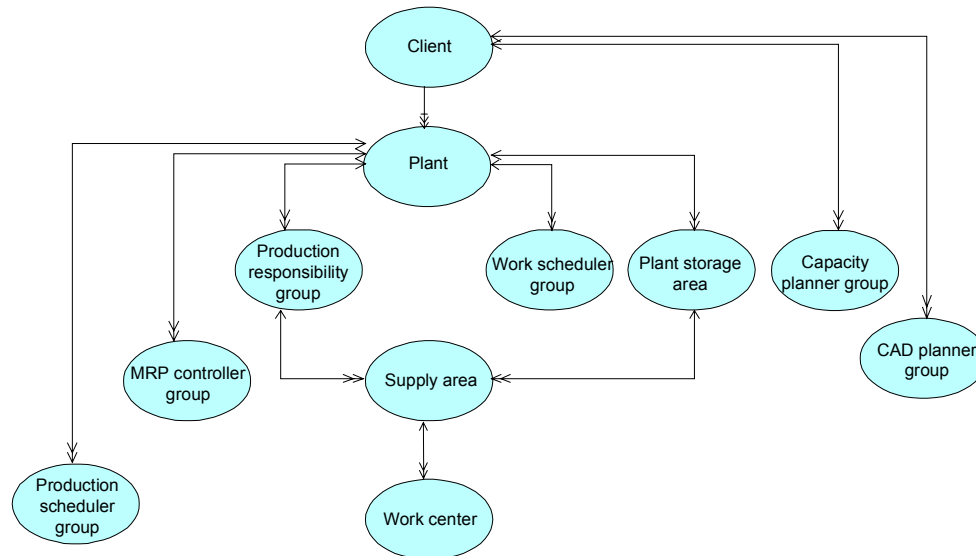
This area includes the total planning, implementation, and control of production, from the creation and management of the production orders, the relevant capacity planning, and the implementation of goods movements to the order settlement.

It also includes the relevant measures for ensuring quality both during and after the production process.

Use

The *Production* enterprise process area can be used in all areas of industry and supports a variety of production types. You can reproduce all common types of production, from make-to-order and multi-variant production, [repetitive manufacturing \[Page 50\]](#) and mass production to [process manufacturing \[Page 51\]](#) . [Production supply with KANBAN \[Page 54\]](#) is also possible in this area.

Production Organization Diagram



[Legend \[Ext.\]](#)

Discrete Manufacturing

Discrete Manufacturing

Purpose

This scenario describes the manufacture of a product based on production orders. *Discrete manufacturing* is characterized by requirements that occur on an irregular basis and a workshop-oriented process.

The *Discrete Manufacturing* scenario can be used in different variants, production by lot size, make-to-order production and assembly processing. The variants differ mainly in the type of planning conducted before-hand and in the relation to the sales order.

- **Production by lot size** is identified by the grouping of requirements into lots during requirements planning, and by planning with existing basic data. *Production by lot size* is independent of a particular sales order.
- **Make-to-order production** describes the production of a material with reference to a particular sales order. The manufactured quantities are managed, in terms of stock, directly for the individual sales order. They cannot be exchanged with the stock of other sales orders. Starting from the sales order, single-item planning can be allowed as far down the bill of material (BOM) structure as you like. Assemblies and components can also be procured for the sales order that generates the requirements, and managed in stock for this sales order. If the product is a configurable product, the system chooses a variant for the customer based on the characteristics that he or she selects. A sales order BOM can then be generated for the sales order. This BOM is used to produce the product.
- **Assembly processing** is a form of make-to-order production, in which the production order (assembly order) is created together with the sales order. In assembly processing the components for the product have, in general, already been produced. They only need to be assembled. The advantage of assembly processing is that an availability check is carried out for the components when you create the sales order. This increases the reliability with which dates can be confirmed considerably. Changes to the sales order are automatically also made in the production order and vice-versa.

Process Flow

Creating a Production Order

1. Discrete manufacturing starts with the creation and processing of a production order. You can create a production order either manually or by converting a planned order that was created in production planning and procurement planning.
2. When you create a production order, reservations are automatically generated for the necessary material components. In the case of externally procured material components or services, the system generates purchase requisitions. Capacity requirements are generated in the work centers that are to process the production order.
3. You can also carry out preliminary costing to determine the planned costs.
4. When the release date is reached and the relevant materials and capacities are available, you release the production order. To prepare for production, you print the relevant shop floor papers.

Capacity Planning

You can evaluate the capacity situation, and if necessary level capacities at any stage in production order processing. In general, you do this before production starts.

Production

The components that are required to produce the product are withdrawn from stock for the production order and the goods issue is posted. The required product is produced according to the production order. The quantities produced and the times needed to do so are confirmed for the production order. The products are placed into stock and the goods receipt is posted.

Quality Inspection During Production

The *Quality Management* procedures relevant to this scenario are explained in a separate scenario [QM in Production \[Page 127\]](#).

Repetitive Manufacturing

Repetitive Manufacturing

Purpose

This scenario describes production planning and control within a repetitive manufacturing environment. In repetitive manufacturing, master plans are typically created on a period and quantity basis (reduction in individual lot and order-specific processing). A quantity of one product is manufactured over a certain period. The product is processed in a constant flow and interim products are generally not stocked.

In repetitive manufacturing, you usually find that the effort required for production control is significantly less than is required for single lot and order-based production control and the recording of actual data is kept simpler.

Repetitive manufacturing can be used for various industries, such as the consumer packaged goods industry, the electronic industry, packaging industry, for example.

You can use Repetitive Manufacturing purely for make-to-stock production, or in a sales order-oriented environment, such as found in the automotive industry.

Process flow

Processing the Master Plan

You can plan the planned orders created in the MRP run for this material in a planning table. Here, you no longer refer to planned orders but to run schedule quantities. You can then change these run schedule quantities in the planning table taking the capacity situation into account, if necessary. Production is now controlled on the basis of these run schedule quantities.

Material Staging

The purpose of the interactive pull list is to inform you of components whose stock levels have to be replenished at the production storage location. From the missing quantities screen, you can directly trigger a stock transfer from the central warehouse to the production storage location.

Production Execution and Backflushing

The product is usually manufactured in a constant flow over the production line. You record actual data (backflush) at regular intervals for the production quantities manufactured. The system posts the component consumption and production activities with the goods receipt of the finished product. If you work with longer lead times, you can also backflush at reporting points on the production line. This means you can post component consumption closer to the actual time that the components were consumed.

Quality Check in Production

The quality management processes relevant to this scenario are explained in the scenario [QM in Production \[Page 127\]](#).

Process Manufacturing

Purpose

This scenario describes the batch- and recipe-oriented manufacture of products and co-products in the process industries. Process manufacturing is applied mainly in the chemical, pharmaceutical, and food and beverage industries, as well as in the process-oriented electronics industry.

The *process manufacturing* scenario can be used in various types of production:

- **Continuous production** involves the manufacture of products in a continuous process over a certain period of time. Ingredients are continuously added, and the final product is manufactured continuously. The production line is completely committed by the order. Partial order or partial commitments are not possible.
- In **discontinuous production**, products are not produced in one continuous process. The ingredients are prepared as charges and staged in precisely weighed quantities. The material is charged at the relevant process step. Several products can be manufactured on the same line.
- **Regulated production** is used if a specific quality is required of the product or if there are legal requirements with which the product must comply (FDA, GMP). It is applied in the pharmaceutical industry, as well as in certain areas of the food or cosmetics industry. Only orders with approved recipes can be created in *regulated production* and changes to master recipes are subject to engineering change management.
- **Process-oriented filling** involves a filling process that is separate from the actual manufacturing process and that occurs at a later point in time. Bulk material from production is stored in containers until it is filled. Process-oriented filling supports complex filling regulated by process control systems, as well as simple filling that is mainly carried out manually. Filling is carried out using process orders that have been created on the basis of a filling recipe.

Process Flow

Process Planning

1. Process manufacturing starts with the creation and execution of a process order that is based on a master recipe. You can either create a process order manually or convert a planned order created in production planning.
2. When you create the process order, the system automatically creates material reservations for the required ingredients as well as purchase requisitions for externally procured material components or services. Capacity loads are also created for the resources at which the order is carried out.
3. Parallel to the creation of the process order, you can carry out preliminary costing to determine the planned costs.
4. You release the process order when the release date has been reached and when the required materials and capacity are available. To prepare for execution, you print the relevant shop floor papers for the process order.

Process Manufacturing

Capacity Requirements Planning

You can evaluate the capacity situation and if required, carry out capacity leveling at any stage of process order processing. However, you usually do this before you start production.

Process Order Execution

Production can take place with or without the use of process management.

- **Process order execution with process management**
 - a. Process management represents the interface between the R/3 System and process control. Its flexible structure allows for linking to automated, partially-automated, as well as manually controlled lines.
 - b. After you have released the entire process order or the relevant phases in the process order for production, control recipes are generated from the process instructions contained in the process order. Control recipes contain all information for executing a process order that process control requires.
 - c. The control recipes are then sent to the process control system or to the responsible process operator in the form of PI sheets. In the second case, the process instructions are prepared in natural language so they can be displayed and edited on the screen by the process operator.
 - d. The process data that results from the execution of the process order is to be confirmed in the R/3 System or transferred to external function modules for further processing. Process messages are used to transfer this data from process control to the different destinations. By sending a material consumption message, for example, a goods issue can be posted.
- **Process order execution without process management**

The ingredients required to produce the finished product are withdrawn for the process order and the goods issue is posted. The finished product is produced using the process order. The quantity produced and the activities performed are confirmed in the process order. The finished product is stored and the goods receipt is posted.

Quality Inspection in Production

The relevant *Quality Management* processes in this scenario are described in detail in [QM in Production \[Page 127\]](#).

Process Order Closing

- For process order settlement, the actual costs incurred for the order are assigned to several receiving objects (for example, the material to be produced or the sales order).
- Within process data documentation, lists of data relevant to quality are generated, which can be written in an optical archive. A distinction is made between order records and batch records.
 - **Order records** contain all quality-relevant R/3 data that arises in the process order environment.
 - **Batch records** contain all quality-relevant data for the production of a batch. Layout, content, and processing of the batch record comply with international standards defined in the guidelines on Good Manufacturing Practices (GMP) for the pharmaceutical and food processing industries.

Production Supply with KANBAN

Production Supply with KANBAN

Purpose

This scenario describes production supply using the KANBAN procedure. With KANBAN, material flow is not controlled by means of higher-level planning, but is requested from the previous manufacturing level (supply source) by the demand source exactly when required.

You use this process for controlling production and material flow if:

- Production itself is to control the manufacturing process. By doing so you can reduce lead times and stocks.
- You would like to reduce the manual posting effort as much as possible.

Production supply with KANBAN can also be carried out with additional material requirements planning. In this scenario, the replenishment elements are generated by a material requirements planning run. However, these do not trigger production or replenishment directly, but act as a forecast for the supply source. Now, when kanbans are set to FULL or EMPTY, only the material flow and the production is controlled here. Backflushes and good receipts are posted without reference to the kanban.

Process Flow

Triggering replenishment by the kanban signal

The production supply with KANBAN begins when you remove a material controlled by KANBAN from a container in production or in sales. If this action causes the material quantity to fall below a certain limit, the system creates a signal. The replenishment of the kanban is automatically carried out on the basis of a previously established replenishment strategy.

Replenishment by in-house production

Replenishment by in-house production takes place in two different ways:

- The kanban signal automatically creates a production order or a run schedule quantity, which is used to replenish the kanban. The kanban is transported back to the demand source, the status set back to FULL and goods receipt posted.
- The kanban signal causes the kanban (and the kanban card) to be sent to the supply source. With the kanban card, the supply source produces the material, fills the kanban and sends it back to the demand source. The status is set back to FULL and a goods receipt is posted.

Replenishment by external procurement

The kanban signal automatically creates a standard purchase order, a schedule line or a stock transfer order (plant to plant). The material manufactured by the external supplier is transported to the demand source. The status of the kanban is set back to FULL and a goods receipt is posted.

Replenishment by stock transfer

The kanban signal automatically creates a stock transfer of a transfer requirement.

Sales

Definition

The **Sales** enterprise process area includes the business processes for business relationships on the market. Sales supplies goods produced and services offered by the enterprise. Whereas long-term sales planning tasks, for example customer segment analysis, market research, and product planning, are in the *Product Development and Marketing* EPA, the Sales EPA includes Planning and controlling sales channels, Advertising, Processing customer inquiries and quotations, Order processing including Pricing, Delivery processing including Picking, and far as Goods issue checking as far as Billing.

Use

How the Sales processes are used depends on the products and services offered on the market, and on the way orders are placed.

Class of goods	Requirements on Sales
Short-life consumer goods	Sell product to distributors who sell on to consumers
Long-life consumer goods	Frequent personal and more extensive consulting, because of the technical complexity of the product
Capital goods (e.g. machinery)	Detailed technical expertise

Customers for short-life consumer goods receive standard price quotations. Prices for long-life consumer goods are often calculated in response to customer inquiries, using standardized modules.

Sales order processing for capital goods often includes creating comprehensive engineering and production documents. This is often the major part of processing (50-70% of overall sales order processing time). Quotations for capital goods are prepared in response to customer inquiries. The inquiry-to-order ratio for mechanical engineering manufacturers is often as low as 10-20%.

In the *component supplier market*, Sales tasks include:

- Completing and monitoring all customer-related activities from development to procurement release
- Processing development inquiries
- Creating development projects
- Processing development sales orders, delivery and billing in accordance with agreed conditions and prices. The following price agreements are possible:
 - Agreement on a set development price
 - Agreement according to agreed price per piece and relevant cost of tools
 - Settlement depending on expense

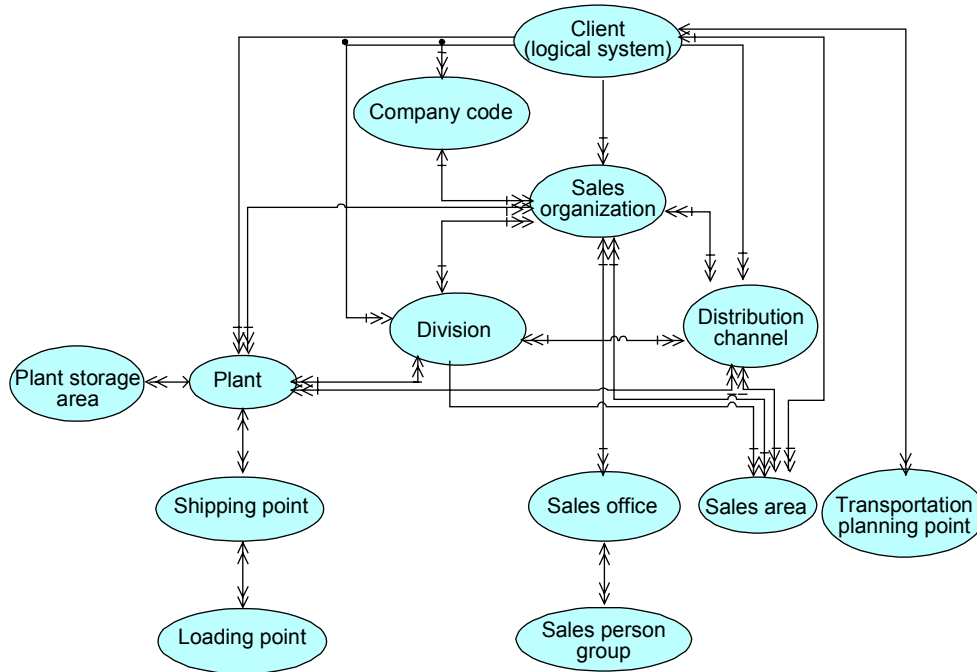
When development is completed or when a market (global sourcing) inquiry is received, Sales creates a project (or extends the existing development project), quotes the product, and processes the customer outline agreement, the initial sample order, and the serial tool orders. The delivery of the initial samples may be billed. The tools stay with the

Sales

component supplier or in the supply chain and are billed when the initial samples are homologated or amortized.

- Creating a customer scheduling agreement with forecast and JIT delivery schedule lines that can be replaced when a scheduling agreement release is received. The scheduling agreement is monitored using cumulative quantities. The product is delivered and billed in the right quantities at the time required. Where tool costs are amortized, the amount amortized for quantities delivered is posted.

Sales Organization Diagram



[Legend \[Ext.\]](#)

Presales Handling

Presales Handling

Purpose

Presales handling covers all the necessary functions and processes needed for processing sales opportunities (Opportunity Management). It serves as an instrument for customer care and acquisition for your sales and marketing departments. It provides a tool for all your employees either in the office or in the field for collecting and using valuable information about customers, sales prospects, contact persons, competitors and their products.

Prerequisites

The following R/3 components are integrated in the scenario for presales handling:

SAP Component	Functions
Sales support	Customer care, acquisition
Sales	Customer inquiries

Process Flow

Sales support

- You can use a mailing campaign to inform certain customers or sales prospects of marketing activities and events, for example, when you introduce a new product to the market, or if you are about to hold a trade fair. You can use existing sales information in your system to generate address lists for customers and sales prospects that you have chosen as your target group for that particular mailing campaign. These target customers and sales prospects then receive a letter, perhaps with an enclosed sample.
- Every contact that you make with a customer (visits, telephone calls, letters) can be stored in the system as a sales activity. The information that you collect and save in the system provides a valuable source of information that all authorized employees can then access.

Customer inquiries

You can enter a customer's request for general product information (for example, product descriptions, availability) using an inquiry.

Sales Order Handling (Standard)

Purpose

Standard sales order handling concentrates on processing products that are sold directly from the warehouse. These are make-to-order products that are produced or procured on the basis of sales and profit planning. The products are ordered according to forecasts or levels of consumption, and are delivered directly from the warehouse to the customer. There is no direct link between sales orders and procurement. The lead time for the sales transaction is therefore relatively short, as a rule.



The relevant *Quality Management* processes in this scenario are described in detail in [QM in Sales and Distribution \[Page 130\]](#).

You can find more information about different ways of creating make-to-order products or the final assembly of products under [Sales Order Handling make/assembly-to-order \[Page 62\]](#)

Prerequisites

The following R/3 components are integrated in standard sales order handling:

SAP Component	Functions
Sales	Sales quotations, orders, contracts and scheduling agreements
Credit and risk management	Credit limit checks, guarantees for open receivables
Shipping	Deliveries, goods issue
Warehouse Management	Stock placement and removal
Transportation	Transportation planning and processing
Billing	Invoice verification
Information system	Planning, forecasts, and statistics

Process Flow

Outline agreements

- Long-term agreements about the receipt of products up to a certain a value or quantity are defined as contracts. You create individual sales orders from the customer's contract release order.
- Scheduling agreements are used if the delivery dates, as well as the delivery quantities, are already known for an outline agreement.

Use for a sales order

1. You send the exact and binding product information (for example, prices, delivery dates) to the customer in the form of a quotation. A valid quotation that has been accepted by the customer can then be converted into a sales order.

Sales Order Handling (Standard)

2. A sales order is a short-term agreement for delivering products to a customer. The following functions are available:
 - Costing and pricing
 - Availability check
 - Delivery scheduling
 - Transfer of requirements to demand management
 - Credit limit check
 - Export control

Credit and risk management

In credit management you can run static or dynamic checks on credit limits at different stages in sales order processing (for example, in the order, the delivery or at goods issue). Risk Management provides additional procedures for guaranteeing against credit risk, such as documentary payments, payment cards or export credit insurance.

Shipping

1. You trigger shipping processing by creating deliveries from orders that are due to be shipped. The system checks both the availability of the product and the validity of the shipping deadlines.
2. In picking, you remove goods from the warehouse and prepare them in the picking area. These functions are also supported by the Warehouse Management system.
3. Delivery items are packed by assigning shipping units that can be composed of materials and packing, or just the delivery item.
4. Goods issue represents the completion of shipping processing. It results in a reduction of stock and an update in the balance sheet account valuation in Financial Accounting (FI).

Warehouse Management

Picking links warehouse management (WM) with sales order processing. The system differentiates between picking in warehouses with fixed bin locations, or in warehouses with random storage (using transfer orders).

Transportation

- You can use transportation planning to group together the deliveries that are due to be transported. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes. Transportation processing allows you to follow the transportation activities that take place after planning.
- The shipment costs determined in transportation are forwarded to Financial Accounting, settled with the carrier and billed to the customer.

Billing

Invoices are created using deliveries for products, or orders for services. Billing plans are used for periodic or milestone billing. Once a billing document has been created, the values are posted to the relevant financial and cost accounting accounts.

Information system

The information system helps you in planning, forecasts, and analyses. It uses master data and any transaction data that may result from the business processes for its evaluations.

Result

The following scenarios can also be used in conjunction with standard sales order handling:

[Presales Handling \[Page 58\]](#)

[Returnables/Empties Handling \[Page 79\]](#)

[Foreign Trade Handling \[Page 84\]](#)

[Complaints Handling \[Page 81\]](#)

Sales Order Handling for Make-To and Assembly Orders

Sales Order Handling for Make-To and Assembly Orders

Purpose

You need make-to or assembly order processing in sales order-related production for a sales order with requirements that cannot be met by the stock of finished products in the warehouse.

- In sales order processing for assembly products, the components have already been manufactured and are ready in the warehouse for a one-level assembly.
- There is, in general, more than one manufacturing level in sales order processing make-to-order. Additionally, a part of the components is usually not covered by warehouse stocks, but must be created or procured for this sales order.

You can start production directly from the sales order, or after requirements planning has been completed once the planned order has been converted.

Sales order processing differentiates between:

- Products without variants
- One-level products with variants, but without a bill of materials (BOM)
- Multi-level products with variants with or without BOMs (only make-to-order)

Products without variants are uniquely identified with a material number and are described as a single-level bill of material (BOM), or as exactly one variant in a multi-level BOM. In these cases, you normally want to start production without calculating the requirements for the product in preliminary planning. Assemblies can, however be planned in advance without specific requirements and be calculated using dependent requirements. Here, sales order processing is no different to that for other uniquely identified products.

In comparison, products with variants need additional information and master data such as:

- Characteristics and values
- Class and object dependencies
- Configuration profiles
- Variant conditions for pricing (optional)
- BOMs and routings with items and operations that can be selected

In these cases, the product is configured according to specific customer requirements. This means that the system uses the classifying characteristics to make an evaluation in the sales order. It uses the evaluation later in the production process to select the exact assemblies from a planned super BOM, which can be forwarded from regulations, stored in the system. This type of product definition is particularly useful for complex products with large numbers of variants.

This procedure is also suitable for sales order-related products that can be described in detail using characteristics.

When absolutely necessary, a configured variant can be used in the sales order as the basis for other structural adjustments made to meet for this customer requirement. This is then called an order BOM.

You can only access order BOMs directly from the sales order. They have to be processed and adjusted after posting the sales order.

Sales Order Handling for Make-To and Assembly Orders



The relevant *Quality Management* processes in this scenario are described in detail in [QM in Sales and Distribution \[Page 130\]](#).

Prerequisites

The following R/3 components are integrated in assembly and make-to-order sales handling:

SAP Component	Functions
Sales	Sales quotation, order and contract processing
Variant Configuration	Configuration of articles
Credit and risk management	Credit limit checks, guarantees for open receivables
Shipping	Deliveries, goods issue
Warehouse Management	Stock placement and removal
Transportation	Transportation planning and processing
Billing	Invoice verification
Information system	Planning, forecasts, and statistics

An interface provides access to the enterprise areas of Planning and Production in Logistics.

Process Flow

Outline agreements

- Long-term agreements about the receipt of products up to a certain a value or quantity are defined as contracts. You create individual sales orders from the customer's contract release order.
- Scheduling agreements are used if the delivery dates, as well as the delivery quantities, are already known for an outline agreement.

Use for a sales order

1. You send the exact and binding product information (for example, prices, delivery dates) to the customer in the form of a quotation. A valid quotation that has been accepted by the customer can then be converted into a sales order.
2. A sales order is a short-term agreement for delivering products to a customer. The following functions are available:
 - A combination of characteristics can be used for pricing in the sales order. Individual pricing conditions can contain individual condition texts. Pricing can be dependent on the characteristic values but regardless of the quantity of the product.
 - The cost of goods manufactured can be calculated by costing the configured product. This will also determine which master data is necessary for the configuration of the sales order. You start this function directly from the sales order. The value that arises from pricing is copied into the sales order and is used as the basis of the sales price.

Sales Order Handling for Make-To and Assembly Orders

- At the same time, a cost object is created that includes profits and costs as well as all the target and actual values in the sales order, which are assigned to accounts. The profit margin can also be evaluated in the sales order.
- Availability check of components
- Transfer of requirements to program planning
- Delivery scheduling
- Credit limit check
- Export control

Credit and risk management

In credit management you can run static or dynamic checks on credit limits at different stages in sales order processing (for example, in the order, the delivery or at goods issue).

Risk Management provides additional procedures for guaranteeing against credit risk, such as documentary payments, payment cards or export credit insurance.

Shipping

1. You trigger shipping processing by creating deliveries from orders that are due to be shipped.
 - The system checks availability in the customer special stock in production.
 - The system re-checks the validity of the shipping deadlines.
2. In picking, you remove goods from the warehouse and prepare them in the picking area. These functions are also supported by the Warehouse Management system.
3. Delivery items are packed by assigning shipping units that can be composed of materials and packing, or just the delivery item.
4. Goods issue is the final step in shipping. This leads to a reduction in the customer special stock levels and an update in the balance sheet account in Financial Accounting (FI).

Warehouse Management

Picking links warehouse management (WM) with sales order processing. The system differentiates between picking in warehouses with fixed bin locations, or in warehouses with random storage (using transfer orders).

Transportation

- You can use transportation planning to group together the deliveries that are due to be transported. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes.
Transportation processing allows you to follow the transportation activities that take place after planning.
- The shipment costs determined in transportation are forwarded to Financial Accounting, settled with the carrier and billed to the customer.

Billing

- Invoices are created using deliveries for products, or orders for services. Billing plans are used for periodic or milestone billing. Once a billing document has been created, the values are posted to the relevant financial and cost accounting accounts.

Sales Order Handling for Make-To and Assembly Orders

- You can use an invoice list to send a list of billing documents due on one date to the payer.

Information system

The information system helps you in planning, forecasts, and analyses. It uses master data and any transaction data that may result from the business processes for its evaluations.

Result

The following scenarios can also be used in conjunction with sales order handling for assembly or make-to-order orders:

[Presales Handling \[Page 58\]](#)

[Returnables/Empties Handling \[Page 79\]](#)

[Foreign Trade Handling \[Page 84\]](#)

[Complaints Handling \[Page 81\]](#)

Cash Sales/Rush Order Handling

Cash Sales/Rush Order Handling

Purpose

Sales processing for standard orders assumes that the sales order, delivery and billing processes take place in a chronological sequence. However, certain processes require that the delivery and/or billing document are linked to sales order processing immediately and this is where you can use the order types for rush orders and cash sales.

In a rush order, the customer picks up the goods immediately, or you deliver them on the same day as when the order was created. When you save the rush order, a delivery is automatically created in the standard system. Billing the rush order takes place as normal, after the delivery.

In cash sales, you can process an order for when the customer orders the goods, picks them up, and pays for them immediately. The delivery is processed at the same time as when the order is created and a cash invoice is printed immediately: billing is therefore related to the order, unlike rush and standard orders. Receivables are not created for the customer, as they are for rush and standard orders because the amount in the invoice is immediately posted to a cash account.

Prerequisites

The following R/3 components are integrated in cash sales and rush order processing:

R/3 Component	Functions
Sales	Sales order processing
Credit and risk management	Credit limit check
Shipping	Deliveries, goods issue
Warehouse Management	Stock placement and removal
Quality Management	Quality checks of deliveries and returns
Billing	Invoice verification
Information system	Planning, forecasts, and statistics

Process Flow

Sales order

1. A sales order is a short-term agreement for delivering products to a customer. The following functions are available:
 - Costing and pricing
 - Availability check
 - Delivery scheduling
 - Transfer of requirements to demand management
 - Credit limit check
 - Export control

Credit and risk management

2. You can use the Credit Management function for different types of credit limit checks (for example, static or dynamic).

Shipping

3. When you save a cash or rush order, a delivery is automatically created in the background.
4. If the customer has already received the goods, the delivery is not relevant for picking. If the customer picks up the goods himself, or if they are sent to him, you can post goods issue and materials staging in the picking area using the functions for picking. These functions are also supported by the Warehouse Management system.
5. Delivery items are packed by assigning shipping units that can be composed of materials and packing, or just the delivery item itself.
6. Goods issue is the final step in shipping. This leads to a reduction in the customer special stock levels and an update in the balance sheet account in Financial Accounting (FI).

Warehouse Management

7. Picking links warehouse management (WM) with sales order processing. The system differentiates between picking in warehouses with fixed bin locations, or in warehouses with random storage (using transfer orders).

Billing

8. For rush orders, invoices are related to the delivery. For cash sales, as soon as the order has been created, an invoice is printed for the customer and billing is related to the order.

Information system

9. The information system helps you in planning, forecasts, and analyses. It uses master data and any transaction data that may result from the business processes for its evaluations.

Result

The following scenarios may also be of use to you in related to cash sales and rush order processing:

[Presales Handling \[Page 58\]](#)

[Returnables/Empties Handling \[Page 79\]](#)

[Foreign Trade Handling \[Page 84\]](#)

[Complaints Handling \[Page 81\]](#)

Third-Party Order Handling

Third-Party Order Handling

Purpose

The customer orders products that your company does not produce, or does not stock in the warehouse. Instead, you can generate a purchase requisition from the appropriate sales order, which you can then use to procure the materials for the customer.

The vendor delivers to the customer directly. The customer billing document can either be based on the shipping notification or the vendor's incoming invoice.

Prerequisites

The following R/3 components are integrated into third-party order processing:

SAP Component	Functions
Sales	Customer inquiries and quotations, sales order processing
Purchasing	Creating purchase requisitions, creating and sending purchase orders/contract release orders
Inventory Management	Entering the goods receipt at the customer for statistical purposes (optional)
Invoice Verification	Post invoice and arrange payment
Credit and risk management	Credit limit checks, guarantees for open receivables
Billing	Invoice verification
Information system	Planning, forecasts, and statistics

This scenario is linked to third-party requisition processing via an interface.

Process Flow

Customer Inquiries and Quotations

- You can enter a customer's request for general product information (for example, product descriptions, availability) using an inquiry.
- You send the exact and binding product information (for example, prices, delivery dates) to the customer in the form of a quotation. A valid quotation that has been accepted by the customer can then be converted into a sales order.

Use for a sales order

A sales order is a short-term agreement for delivering products to a customer. The following functions are available:

- Costing and pricing
- Purchase requisitions for procuring the material requested by the customer
- Delivery scheduling
- Credit limit check
- Export control

- Credit and risk management

Credit and risk management

In credit management you can run static or dynamic checks on credit limits at different stages in sales order processing (for example, in the order, the delivery or at goods issue).

Risk Management provides additional procedures for guaranteeing against credit risk, such as documentary payments, payment cards or export credit insurance.

Purchase Requisition

Third-party procurement starts with the creation of a purchase requisition:

- In sales order processing in SD, the system is able to create purchase requisitions **automatically**.
- When requirements exist in other areas of the company, purchase requisitions have to be created **manually** by the user.

Purchasing

1. Once they have been created, you can assign requisitions to a source of supply, taking previous purchase orders or contracts into account in the process. If no suitable source of supply exists, you must:
 - Issue requests for quotation to potential vendors
 - Compare the quotations you receive in response
 - Assign the purchase requisition to one of the quotations received

If required, the vendor must have been approved by Quality Management.
2. Purchase requisitions to which a release strategy has been assigned must be released (approved) before they can be converted to purchase orders, contract release orders or scheduling agreement (SA) delivery schedules.
3. Depending on the source of supply, you create and transmit one of the following documents:
 - Purchase orders
 - contract release order
4. Purchase orders subject to release strategies must be released before they can be sent to the vendor.
5. You monitor the order. The system is able to automatically print urging letters for you to send to the vendor, as required. This is only the case if you work with goods receipts.
6. You can maintain order acknowledgments for purchase orders or delivery schedules. These enable precise planning, as you always have reliable information on expected deliveries in the period between ordering goods and the requested delivery date. Shipping notifications can be referenced at the time of goods receipt, allowing you to identify and investigate any quantity variances in good time.

Goods Receipt

As soon as the goods arrive at the customer, you can post a goods receipt for statistical purposes to consumption, provided the item category S is configured to allow this.

Third-Party Order Handling

Invoice Verification

- When the invoice from the vendor arrives, you enter the invoice for the third-party order. The invoice is entered as if it were a standard purchase order.
- If you entered a goods receipt for the purchase order for statistical purposes, the GR/IR clearing account is cleared when the invoice is posted.

Billing

- Invoices are created using the vendor's incoming invoice or shipping notification. Billing plans are used for periodic or milestone billing. Once a billing document has been created, the values are posted to the relevant financial and cost accounting accounts.
- You can use an invoice list to send a list of billing documents due on one date to the payer.

Information system

The information system helps you in planning, forecasts, and analyses. It uses master data and any transaction data that may result from the business processes for its evaluations.

Result

The following scenarios may also be of use to you for third-party order handling:

[Presales Handling \[Page 58\]](#)

[Returnables/Empties Handling \[Page 79\]](#)

[Foreign Trade Handling \[Page 84\]](#)

[Complaints Handling \[Page 81\]](#)

Consignment Stock Handling

Purpose

Consignment handling is for processing consignment goods, that is, goods that are stored in the customer's warehouse but that still belong to your company. The customer does not have to pay for the goods until they are withdrawn from the consignment stock. Consignment goods which are not needed can, as a rule, be returned. Because the consignment stock is still part of your evaluated stock, you have to keep stock records for it in your system. Consignment stocks must:

- Record the consignment stock separately from other stocks, in order to keep an overview of what is in the customer's warehouse.
- Record separate stock levels for different customers.



The relevant *Quality Management* processes in this scenario are described in detail in [QM in Sales and Distribution \[Page 130\]](#).

Prerequisites

The following R/3 components are integrated in the scenario for consignment processing:

SAP Component	Functions
Sales	Quotation and sales order processing
Credit and risk management	Credit limit checks, guarantees for open receivables
Shipping	Deliveries, picking, packing, goods issue
Warehouse Management	Stock placement and removal
Transportation	Transportation planning and processing
Billing	Invoice verification
Information system	Planning, forecasts, and statistics

Process Flow

Use for a sales order

Three different types of sales order are relevant for consignment processing:

- The customer fill-up is for replenishing the customer consignment stores.
- The consignment issue is for recording when a customer withdraws goods from the consignment stock for consumption or sales.
- The consignment pick-up is for returning the consignment stock to your warehouse.

The following standard functions are available for consignment processing:

- Costing and pricing
- Availability check

Consignment Stock Handling

- Delivery scheduling
- Transfer of requirements to demand management
- Credit limit check
- Export control

Credit and risk management

In credit management you can run static or dynamic checks on credit limits at different stages in sales order processing (for example, in the order, the delivery or at goods issue).

Risk Management provides additional procedures for guaranteeing against credit risk, such as documentary payments, payment cards or export credit insurance.

Shipping

1. You trigger shipping processing by creating deliveries from orders that are due to be shipped. The system checks both the availability of the product and the validity of the shipping deadlines.
2. In picking, you remove goods from the warehouse and prepare them in the picking area. These functions are also supported by the Warehouse Management system.
3. Delivery items are packed by assigning shipping units that can be composed of materials and packing, or just the delivery item.
4. Goods issue is the final step in shipping and varies according to the underlying order type:
 - Consignment fill-up: The appropriate quantity is posted from the standard stock and added to the customer special stock. The total valuated stock in your warehouse remains unchanged.
 - Consignment issue: When you post goods issue, the quantity is taken both from the customer special stock and your own valuated stock.
 - Consignment pick-up: When goods issue is posted, the quantity is posted from the customer special stock and posted to the normal stock of the plant, to which it is being returned. The total valuated stock remains the same because the returned goods have always remained part of your stock, even while at the customer.

Warehouse Management

Picking links warehouse management (WM) with sales order processing. The system differentiates between picking in warehouses with fixed bin locations, or in warehouses with random storage (using transfer orders).

Transportation

1. You can use transportation planning to group together the deliveries that are due to be transported. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes.
2. Transportation processing also allows you to follow the transportation activities that take place after planning.
3. The shipment costs determined in transportation are forwarded to Financial Accounting, settled with the carrier and billed to the customer.

Billing

- Invoices are created using deliveries for products, or orders for services. Once a billing document has been created, the values are posted to the relevant financial and cost accounting accounts. In consignment processing, only the consignment issue is relevant for billing because this is when property actually changes hands.
- You can use an invoice list to send a list of billing documents due on one date to the payer.

Information system

The information system helps you in planning, forecasts, and analyses. It uses master data and any transaction data that may result from the business processes for its evaluations.

Result

The following scenarios may also be of use to you with consignment processing:

[Presales Handling \[Page 58\]](#)

[Returnables/Empties Handling \[Page 79\]](#)

[Foreign Trade Handling \[Page 84\]](#)

[Complaints Handling \[Page 81\]](#)

Intercompany Handling

Intercompany Handling

Purpose

Intercompany handling (cross-company code business processing) contains business transactions that take place between two different companies (company codes) that belong to one organization or central company. A sales organization, assigned to the ordering company code, creates a sales order for goods from a plant belonging to another company code. The R/3 System distinguishes between two different processes:

- **cross-company sales handling**
The goods are delivered directly from the plant to the customer.
- **cross-company stock transfer**
The goods are delivered from the plant in the second company code to the plant for which the sales organization has ordered the goods. Because both company codes manage their own balance sheets, the delivering company code has to invoice the ordering company code for the goods. An internal billing document is used for this consumption. The price, for which the delivering company code invoices the ordering company code, represents the costs spent by the delivering company code.



Only cross-company sales handling is described here. You can find information on cross-company stock transfer under [Internal Procurement \[Page 40\]](#)

The relevant *Quality Management* processes in this scenario are described in detail in [QM in Sales and Distribution \[Page 130\]](#).

Prerequisites

The following R/3 components are integrated in intercompany handling:

SAP Component	Functions
Sales	Sales Order Processing
Shipping	Deliveries, goods issue
Warehouse Management	Stock placement and removal
Transportation	Transportation planning and processing
Billing	Invoice, credit/debit memo, and rebate processing
Information system	Planning, forecasts, and statistics

Process Flow

Use for a sales order

The ordering company code creates a sales order for the goods it wishes to order from the delivering company code. The following basic functions are available in sales order processing:

- Costing and pricing
- Availability check

- Transfer of requirements to demand management
- Delivery scheduling
- Export control

Shipping

1. The delivering company code ships the goods to the customer. You trigger shipping processing by creating deliveries from orders that are due to be shipped. The system checks both the availability of the product and the validity of the shipping deadlines.
2. In picking, you remove goods from the warehouse and prepare them in the picking area. These functions are also supported by the Warehouse Management system.
3. Delivery items are packed by assigning shipping units that can be composed of materials and packing, or just the delivery item.
4. Goods issue represents the completion of shipping processing. It results in a reduction of stock and an update in the balance sheet account valuation in Financial Accounting (FI).

Warehouse Management

Picking links warehouse management (WM) with sales order processing. The system differentiates between picking in warehouses with fixed bin locations, or in warehouses with random storage (using transfer orders).

Transportation

- You can use transportation planning to group together the deliveries that are due to be transported. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes.
- Transportation processing also allows you to follow the transportation activities that take place after planning.
- The shipment costs determined in transportation are forwarded to Financial Accounting, settled with the carrier and billed to the customer.

Billing

As well as a standard customer billing document, an internal billing document is also necessary for calculating the consumption between company codes. Once a billing document has been created, the values are posted to the relevant financial and cost accounting accounts.

Information system

The information system helps you in planning, forecasts, and analyses. It uses master data and any transaction data that may result from the business processes for its evaluations.

Result

The following scenarios may also be of use to you in conjunction with Intercompany Handling:

[Presales Handling \[Page 58\]](#)

[Returnables/Empties Handling \[Page 79\]](#)

[Foreign Trade Handling \[Page 84\]](#)

[Complaints Handling \[Page 81\]](#)

Sending Samples and Advertising Materials

Purpose

Samples and promotional goods are normally sent or given to the customer free of charge from the warehouse.

Samples are issued from production, and promotional goods, which are normally trading goods, are issued from procurement. The costs can be planned in Controlling (CO) either in the profitability analysis or in internal orders. They are then evaluated with the actual values transferred to the billing document.

A field service employee can issue samples and promotional goods; or they can be shipped as a delivery in a shipment, or they can be supplements in a mailing campaign.

Samples and promotional goods can also be billed with a price, if required.

Prerequisites

The following R/3 components are integrated with sending samples and advertising materials:

SAP Component	Functions
Sales	Order for free-of-charge delivery
Shipping	Deliveries, goods issue
Warehouse Management	Stock placement and removal
Transportation	Transportation planning and processing, shipment cost processing
Billing	Invoice processing, transfer of costs to profitability analysis
Information system	Planning, forecasts, and statistics

Process Flow

Use for a sales order

You can enter samples and promotional goods in the sales order as free-of-charge items. They can also be combined with other items that are not free. The following functions are available:

- Costing and pricing
- Availability check
- Transfer of requirements to demand management
- Delivery scheduling
- Export control

Shipping

1. You trigger shipping processing by creating deliveries from orders that are due to be shipped. The system checks both the availability of the product, and the validity of the shipping deadlines.
2. In picking, you remove goods from the warehouse and prepare them in the picking area. These functions are also supported by the Warehouse Management system.

Sending Samples and Advertising Materials

3. Delivery items are packed by assigning shipping units that can be composed of materials and packing, or just the delivery item.
4. Goods issue represents the completion of shipping processing. It results in a reduction of stock and an update in the balance sheet account valuation in Financial Accounting (FI).

Warehouse Management

Picking links warehouse management (WM) with sales order processing. The system differentiates between picking in warehouses with fixed bin locations, or in warehouses with random storage (using transfer orders).

Transportation

- You can use transportation planning to group together the deliveries that are due to be transported. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes.
- Transportation processing also allows you to follow the transportation activities that take place after planning.

Billing

Invoices are created using deliveries. Once a billing document has been created, the values are posted to the relevant financial and cost accounting accounts, although in this case only costs, and no profits, are posted.

Information system

The information system helps you in planning, forecasts, and analyses. It uses master data and any transaction data that may result from the business processes for its evaluations.

Result

The following scenarios can be integrated with the scenario for sending samples and advertising materials:

[Presales Handling \[Page 58\]](#)

[Foreign Trade Handling \[Page 84\]](#)

Returnable Packaging and Empties Handling

Purpose

Returnable packaging is packaging stored in the customer's warehouse but still the property of your company. The customer is not obliged to pay for the packaging unless they do not return it by the agreed time. This scenario enables you to process how empties or euro-pallets are consumed or returned, for example. It also contains functions for selling empties on to a third party. Because returnable packaging is part of your stock, you must record the stock levels in your system. However, you must:

- Record the consignment stock separately from other stocks, in order to keep an overview of what is in the customer's warehouse.
- Record separate stock levels for different customers.

Prerequisites

The scenario for processing returnable packaging and empties is only for picking up and issuing returnable packaging. Shipping returnable packaging takes place as part of normal sales order processing and has only been described here for the sake of completion. You can only use this scenario in conjunction with other sales scenarios.

The following R/3 components are integrated into processing for returnable packaging and empties:

SAP Component	Functions
Sales	Sales Order Processing
Shipping	Deliveries, goods issue and receipt
Transportation	Transportation planning and processing
Billing	Debit memo processing

Process Flow

Returnable packaging and empties processing consists of three different business transactions:

- Returnable packaging shipment
- Returnable packaging pickup
- Returnable packaging issue

Returnable packaging shipment

1. You create the returnable packaging as a separate item in the sales order. The following functions are available:
 - Availability check
 - Delivery scheduling
 - Transfer of requirements to demand management

Returnable Packaging and Empties Handling

2. You trigger shipping processing by creating deliveries from orders that are due to be shipped. The system checks both the availability of the product and the validity of the shipping deadlines.
3. In picking, you remove goods from the warehouse and prepare them in the picking area.
4. Goods issue is the final step in shipping. If there is no special stock (or special stock partner) for the customer, the system creates one automatically when goods issue is posted. The appropriate quantity is posted from the standard stock and added to the customer special stock. The total valuated stock in your warehouse remains unchanged.
5. You can use transportation planning to group together the deliveries that are due to be transported. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes.
6. Transportation processing allows you to follow the transportation activities that take place after planning.
7. This transaction is not relevant for billing because the customer's special stock still belongs to your company.

Returnable packaging pickup

1. This is for returning packaging. To do this, you create a suitable order (returnable packaging pickup) containing the returnable packaging items. This will give you an overview of the packaging in the customer special stock when you use an availability check.
2. Enter the picked up or delivered packaging as a returns delivery in shipping.
3. When goods issue is posted, the quantity is posted from the customer special stock and posted to the normal stock of the plant, to which it is being returned. The total valuated stock remains the same because the returned goods have always remained part of your stock, even while at the customer.
4. This transaction is not relevant for billing because the customer's special stock still belongs to your company.

Returnable packaging issue

1. If the customer damages or keeps the returnable packaging it is invoiced to them. You then create an order for returnable packaging issue with the returnable packaging items.
2. You have to create a delivery in shipping in order to be able to post goods issue.
3. When you post goods issue, the quantity is taken both from the customer special stock and your own valuated stock.
4. Create an invoice for the delivery because the packaging now belongs to the customer.

Complaints Handling

Purpose

This scenario describes how customers or the external sales force can initiate returns processing. Returns are made for faulty goods, incorrect deliveries, incorrect orders, or if the good is returned in sales on approval before its deadline.



The relevant *Quality Management* processes in this scenario are described in detail in [QM in Sales and Distribution \[Page 130\]](#).

Prerequisites

The following R/3 components are integrated into returns processing:

SAP Component	Functions
Complaints	Returns, credit memo requests
Shipping	Return delivery, goods receipt
Warehouse Management	Stock placement
Quality Management	Quality check for returns
Transportation	Transportation planning and processing
Billing	Credit memos

Process Flow

A complaint can be generated in a sales activity (for example, telephone call). This information then serves as a basis for the follow-up complaints processing.

If you have to make any return calls because quality management ascertained that the product was faulty, then you can implement a mailing campaign to inform the affected range of customers.

You can process complaints in two ways:

- The customer returns the goods
 - You create returns. If the goods are sent back to your warehouse, you create a returns delivery that refers to the returns that you have just entered. The goods issue that is posted for the returns delivery also records the goods receipt in your own stock.
 - Once the returned goods have been received, they are checked to see if the complaint was valid and a decision is made on how the goods are to be used (e.g. reworked or scrapped).
 - If the customer wants a refund for the amount, you create a credit memo request with reference to the return. You then generate a credit memo for the customer from an approved credit memo request.

Complaints Handling

- If the customer wants to replace the goods, create a free-of-charge delivery with reference to the returns.
- The customer does not return the goods
 - If the customer wants a refund for the amount, you create a credit memo request with reference to the sales order. You then generate a credit memo for the customer from an approved credit memo request.
 - If the customer wants to replace the goods, create a free-of-charge delivery with reference to the sales order.

Result

The following scenario may also be of use to you for complaints handling:

[Presales Handling \[Page 58\]](#)

Rebate Handling

Purpose

Rebate handling enables you to grant a customer a certain discount within a specific time period, dependent on sales.

Prerequisites

The following R/3 components are integrated in the scenario for rebate processing:

SAP Component	Functions
Master data	Rebate agreement processing
Billing	Accruals in rebate processing

Process Flow

Rebate agreements

The rebate details are defined in a rebate agreement. For example, you can define the following data within this rebate agreement:

- the recipient of the rebate payment
- the criteria for being granted a rebate (customer, customer and material, and so on)

Rebate settlement

Rebates are settled once their validity period has expired. The system creates credit memos using rebate-relevant billing documents (invoices, credit and debit memos), as well as taking into account any conditions made in the rebate agreement. You can make partial payments of a rebate and the system takes these into account for the final settlement.



The system automatically posts accruals for rebate-relevant billing documents, so that Financial Accounting has a clear overview of the accumulated value of the rebate.

Foreign Trade Handling

Foreign Trade Handling

Purpose

Legislators today expect that rules and regulations are strictly adhered to both in domestic and increasingly in international trade. In the meanwhile, foreign trade influences the whole supply chain, starting with the import of raw materials, semi-finished and finished products and ending with the export of the final product, as well as transferring data to materials management and financial accounting. The R/3 System can support your company in all these spheres.

Prerequisites

The following R/3 components are integrated with foreign trade handling:

SAP Component	Functions
Foreign Trade	Maintenance of foreign trade master data Legal control Declarations to the authorities Preference processing Documentary payments Interface for release of foreign trade data

Process Flow

Basic data

Here you can maintain data specific to foreign trade, such as material, vendor, and customer master records, purchasing info records, itineraries, and commodity codes.

Legal controls

Each country is responsible for its own foreign trade regulations, whether exporting natural resources and raw materials, concerned with reasons of national security, or using international agreements.

The restrictions that apply to foreign trade transactions can depend on:

- Products
- Customers
- Destination country of export
- Time of export

According to these restrictions, the export can either be forbidden, subject to a license, or free from any licensing requirements.

Legal controls determine whether you can process an export transaction, whether you need a license, and if so, whether the export has already been approved, or whether you need to apply for a new license.

Declarations to the authorities

Within foreign trade handling, you have to enter exports and imports and declare them regularly to the authorities. The authorities use these declarations for recording statistics about sending products both within and outside a particular economic zone.

Declarations can be created in the R/3 System for the EU, EFTA, NAFTA, and Japan.

Preference handling

Within preference handling, the system determines whether your products are original products or not, according to the regulations in the economic area from which you are exporting. If your goods count as original goods, you can have preference authorization. If you export goods with preference authorization, you only have to pay low customs charges, or none at all.

Documentary payments

Documentary payments play an important role in reducing the risks that can occur in foreign trade. Documentary payments reduce the risks

- for the exporter, as the importer does not receive the documents (for example, bills of lading) he needs in order to receive the goods he has ordered until after paying the bill.
- For the importer, as he does not need to pay until the exporter has provided all the documents that prove that the goods will be delivered, according to the conditions stipulated in the contract.

Communication/Printing

You can call up foreign trade data via the Electronic Document Interface (EDI), SAPscript, or with a subsystem.

We supply a wide range of export documents that are ready for printing.

Inventory Management, Storage, and Transportation

Definition

The *Inventory Management, Storage, and Transportation* enterprise area deals with the following tasks:

- Management of material stocks on a quantity and value basis
- Planning, entry, and documentation of all goods movements
- Carrying out the physical inventory
- Defining and managing complex warehousing structures
- Optimizing the material flow using advanced stock placement and picking procedures
- Processing goods receipts, goods issues, and stock transfers quickly and easily
- Supporting warehouse activities as a decentralized Warehouse Management System

Use

- [Goods Movement \[Page 87\]](#) processes enable you to perform goods movements independently of the business processes in Production or Sales and Distribution. This guarantees optimum use of warehouse capacity and that materials are staged to meet requirements.
- [Physical inventory \[Page 89\]](#) of material stocks is required by law in many countries and includes physical inventory at storage location level and storage bin level.
- [Decentralized Warehouse Management \[Page 90\]](#) describes the SAP Warehouse Management System (WMS) as a separate, decentralized system that is operated independently of a central Enterprise Resource Planning System (ERP System).

Goods Movements

Purpose

This scenario describes movements of materials:

- Receiving material into stock without reference to a purchase order
- Transferring material
- Issuing material from stock for various purposes

Prerequisites

The Warehouse Management (LE-WM) functionality is a prerequisite for transfer requirements and transfer orders.

Process Flow

Reservation

You can use reservations to keep materials for withdrawal at a later stage. This ensures that the material is available at the time of the withdrawal and the goods issue is planned and prepared. You can also use reservations to plan goods receipts and stock transfers or transfer postings.

Inbound and Outbound Shipments

You can use transportation planning to group together the deliveries that are due to be transported. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes. Transportation processing allows you to follow the transportation activities that take place after planning.

Goods Receiving

Here you post goods receipts without reference to a purchase order or any other order. You can also use this function to move stocks from a legacy system to the R/3 System.

1. A transfer order is created for the goods receipt and the material is placed into storage.
2. The transfer order is confirmed and any differences are processed.

Stock Transfers and Transfer Postings

Stock transfers and transfer postings are typical goods movements, used for certain organizational aspects, for example, decentralized storage.

1. As a result of the stock transfer or transfer posting, a transfer order is created and the goods are transferred.
2. The transfer order is confirmed and differences are processed.

Goods Issuing

You enter and post goods issues with and without reference to manual reservations here. The system issues an error message if the material is not available.

1. The transfer requirement generated by the goods issue is converted to a transfer order.
2. The material is removed from storage.

Goods Movements

3. The transfer order is confirmed and differences are processed.

Physical Inventory

Purpose

This scenario describes the physical inventory procedure for material stocks in Inventory Management and Warehouse Management.

In Inventory Management, physical inventory is carried out at storage location level, whereas in Warehouse Management, it is carried out at storage bin level. You can inventory your company's own stocks and special stocks. You can choose from the following **four types of physical inventory**:

- **Key date**
All stocks are counted physically before the balance sheet is prepared.
- **Inspection sample**
The materials to be counted are chosen at random. If the variance between the count result and the book inventory balance is small enough, you assume that the book inventory balance is also correct for the materials that have not been counted.
- **Permanent**
Each material must be counted at least once per year.
- **Cycle Counting**
Performing an ABC analysis of material movements determines how often materials should be inventoried. Fast-moving materials are inventoried most often.

Process Flow

1. **Physical inventory preparation**
The physical inventory documents are either created manually (if few materials) or using a batch input session. They specify which materials (IM) or which storage bins (WM) are to be inventoried. During the physical inventory, you have to block the materials or storage bins for material movements to prevent discrepancies between the actual physical stocks in the warehouse and the book inventory balance, or you have to freeze the book inventory balance. If you freeze the book inventory balance, you can continue to carry out goods movements.
You print and distribute the physical inventory documents.
2. **Physical inventory count**
You physically count the stocks and write the count results on the physical inventory documents.
3. **Physical inventory analysis**
You enter the results of the stock count in the system. Once the difference list has been analyzed, you can authorize a recount if you think that errors have been made in the stock count. New physical inventory documents are created. Once the new results have been entered, the physical inventory is closed. Physical inventory differences that still exist are posted out.

Decentralized Warehouse Management

Purpose

This scenario describes how to use the R/3 System as a decentralized warehouse management system.

Prerequisites

For information on the prerequisites and limitations of decentralized Warehouse Management, refer to: [Limitations \[Ext.\]](#).

Process Flow

Inbound and Outbound Shipments

You can use transportation planning to group together inbound and outbound deliveries that are due to be shipped. Essential planning activities are determining shipping deadlines and means of transport, and assigning routes. Transportation processing allows you to follow the transportation activities that take place after planning.

Goods Receipt

1. The inbound deliveries created in the ERP system are transferred to decentralized Warehouse Management via BAPI. The goods that have been physically received in the warehouse are entered here.
2. You create a transfer order based on the goods receipt and place the goods in storage.
3. You confirm the transfer order.
4. You post the goods receipts for the inbound shipment. When the confirmation is sent to the ERP system, the goods receipt is posted there.

Stock Transfers and Transfer Postings

1. A delivery is created from the goods movements created in the ERP system and transmitted to decentralized Warehouse Management via BAPI.
2. After physical receiving or issuing the goods, you create a transfer order.
3. You confirm the transfer order.
4. The confirmation is sent to the ERP system (using the goods receipt for the inbound delivery and the goods issue for the outbound delivery).
5. When the confirmation is imported to the ERP system, the stock transfer is posted in Inventory Management.

Goods Issue

1. For a goods issue in the warehouse, an outbound delivery is created in the ERP system and transmitted to decentralized Warehouse Management.
2. You create a transfer order for the outbound delivery.
3. You physically perform the picking in the warehouse.
4. You confirm the transfer order and print the shipping documents, if necessary.

Decentralized Warehouse Management

5. When the goods issue for the outbound delivery is posted, confirmation is sent to the ERP system.
6. When the confirmation is imported to the ERP system, the goods issue is posted in Inventory Management.

Physical Inventory

The physical inventory in decentralized Warehouse Management corresponds to that of a normal warehouse management system.

For detailed information on using the R/3 System as a decentralized warehouse management system, see [Processes Between R/3 as the ERP System and R/3 as the WM System \[Ext.\]](#).

Customer Service

Customer Service

Definition

The *Customer Service* enterprise process area includes the business processes for providing services to customers, which is an increasingly important criterion for decision-making in product and vendor selection within the framework of increasing global competition.

In Customer Service, you provide your customers with certain services, either linked with a specific product manufactured by you, or as an independent service without reference to a product.

Rapid corporate growth can lead to customers having too few resources to meet all preventive maintenance and service requirements internally. Internal staff are often not qualified to maintain complex, modern plants. Many customers recognize that it can be more cost-effective to outsource at least some services.

This EPA is characterized by its links to others, in particular to Procurement, Sales, and Asset Management. Customer Service also has links to external accounting, revenue and cost controlling and human resources.

Use

Customer Service is divided into:

- Service agreements
- Installed base management
- Service processing

[Service agreements \[Page 95\]](#) consist of functions for finalizing and processing service contracts. These are used for billing, cancellation, and control of follow-up actions on the one hand, and warranty processing on the other. Warranties can cover either all the equipment or individual maintenance assemblies. The warranty scope is defined in a master warranty category.

Installed base management deals with equipment installed at the customer site and functional locations in the broadest sense. To create a customer reference, the entries for customer, end customer, operator, contact person, and the serial number are entered in the functional location master record and in the equipment master record. Equipment exchange at the customer site can then be easily portrayed using the installation/dismantling functions.

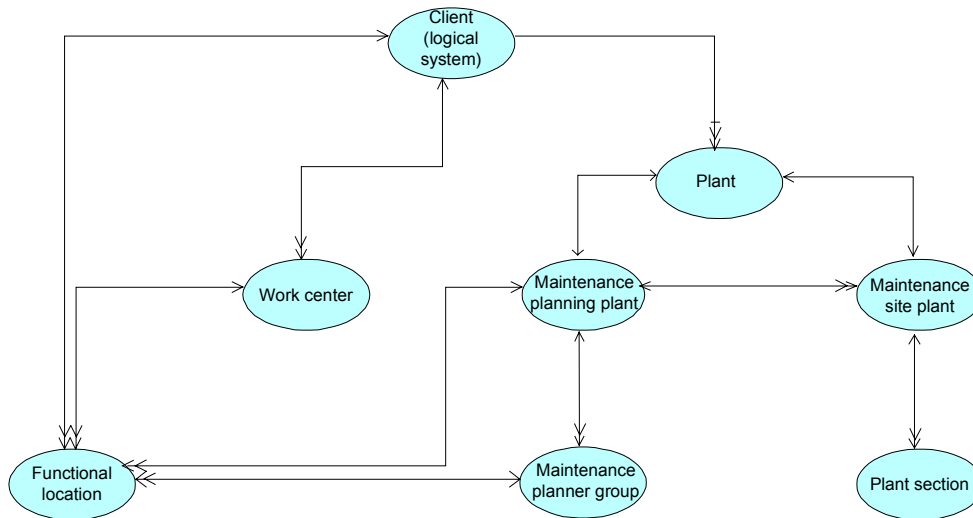
Service processing is divided into service notifications and service orders. Service notifications hold customer malfunction reports and essentially contain data on functional location and equipment numbers, requested repair dates, damage and the contact person at the customer site. Service order processing can be done in many different ways depending on accompanying circumstances.

Relevant factors are:

- Maintenance in the [service work center \[Page 109\]](#) or [service at the customer site \[Page 102\]](#).
- Service planning or immediate processing and short documentation for the service history
- Preventive maintenance or repair
- Quotation phase or maintenance task with no previous direct sales support activities

Customer Service Organization Diagram

Customer Service Organization Diagram

[Legend \[Ext.\]](#)

Long-Term Service Agreements

Purpose

This scenario specifically involves long-term contract agreements that are of significance for subsequent service processing.

There are various options in Customer Service that enable you to create service agreements with customers in the system (warranty agreements and service contracts). Service contracts, such as the maintenance contract, are used in this scenario.

You agree upon the content and scope of the services that you perform for the customer in **service contracts**. Service contracts describe which services are performed for which objects, and under which conditions. In this way you define, for example, which after-sales services are covered by the contract for the specified devices, the period of time in which the work is guaranteed to be performed (response and service times), what prices are valid for the work, at what intervals the customer is billed, or how cancellation of the contract is arranged.

As a service provider, you mainly use service contracts for:

- Checking a customer's entitlement to services they request
- Price agreements for service orders
- Periodic billing
- Automatic task determination for a service notification

If there is a contractual obligation to perform periodic services (for example, periodic inspections), a reference is created between the contract and a maintenance plan (the maintenance plan is responsible for the automatic creation of service orders). This ensures integration between contract agreements and processing.

Prerequisites

Within the framework of the scenario *Long-Term Service Agreements*, you use the integrated business functions of the following SAP application components:

SAP Component	Functions
Customer Service (CS)	Integration of SD contract functionality
Sales and Distribution (SD)	Maintenance and billing of the service contract

Process Flow

Presales Activities

- In the preliminary stages of service contract processing, you start by acquiring sales orders within the framework of **sales activity processing** (for example, phone call, visit, letter).
- You could also initiate this by launching a **direct mailing campaign**, which presents the opportunity to send out product information, promotional gifts and so on, to a selected set of customers.
- You can enter a customer's request for general product information (for example, product descriptions, availability) using an **inquiry**.

Long-Term Service Agreements

- You send the exact and binding product information (for example, prices, delivery dates) to the customer in the form of a **quotation**. A service contract can be created directly from a valid quotation that has been accepted by the customer.

Service Contract

As a rule, you perform services on the basis of a service contract.

The service contract is a special type of contract in the SAP application component Sales and Distribution (SD) and is also used in Customer Service.

You maintain the scope of the agreed services as well as the price conditions that are valid for the respective customer in the service contract. The price conditions form the basis for service contract billing.

Result

You create service contracts and manage them.

If you have agreed in a maintenance contract to perform periodic services for your customer, you can do this by linking several service contract items to a maintenance plan. The automatic creation of service orders is triggered by the maintenance plan.

Call Center Processing

Purpose

In this scenario, customer problems are entered at your service headquarters (Call Center) and - as far as possible - are then processed over the phone and rectified. This is performed in a call center environment, which makes it possible to link the telephony control functions and the processing of business transactions directly with one another.

If neither material nor technicians are required in order to rectify the problem, but the customer just needs consulting advice from a technical or organizational perspective, these steps can be directly defined and managed using notification-related tasks.

The main components/characteristics of this scenario are:

- Integration of telephony control functions and business transactions
- Wide range of options for creating service notifications
- Complete access to customer information

The processing of customer problem notifications can take place with or without reference to a service contract (compare this to the scenario [Long-Term Service Agreements \[Page 95\]](#)). In this way, you can, for example, guarantee your customers particular processing times for a problem notification within the framework of service agreements.

Prerequisites

Within the framework of the scenario *Call Center Processing*, you can use the integrated business functions of the following SAP application components:

SAP Component	Functions
Customer Interaction Center (CIC)	Agent Front Office; Evaluation functions
Customer Service (CS)	Problem management in Call Center Processing
Complete SAP System (mainly MM and SD)	Freely configurable connection of any of the required SAP functionality to the <i>Customer Interaction Center</i> component.

Process Flow

Front Office

The core component of this scenario is a user-specific call center work center (known as *Front office* in the SAP System). From this screen interface, an individual agent in your service center can control and perform all the customer information, business processes, and activities he or she requires. The agent can, for example, create and call up customer data, enter and process service notifications, and so on. During the processing of incoming customer calls, your agent can access both internal and external HTML pages (Intranet/Internet), and save, link, and call up solutions with the help of an internal database of typical problems (symptoms).

Both the user interface and the selection of required functions can be freely configured to meet the specific requirements of the individual agent.

Call Center Processing

The integration of telephony functionality (Computer Telephony Integration) enables both incoming and outgoing calls to be processed.

Evaluations

This scenario comprises an comprehensive reporting function that can be used to analyze and monitor different areas of call center processing to different degrees of detail (for example, time analyses, call volumes, and activity analyses for each agent).

Result

Whether or not you deploy technicians within the framework of your customer service, you can use the call center functionality described above as the basis on which your customer services are processed.

Spare Parts Delivery Processing

Purpose

This scenario describes the processing of spare parts deliveries that become necessary when services are being performed for customer devices.

You can use **sales orders** to enter a customer's need for a spare part, which you can either create directly, or based on the service notification.

You use this sales or spare part order to represent the sale and delivery of required spare parts. The functions for shipping processing and transportation are also available with the spare part orders. In this way, the delivery with delivery notes is performed quickly and efficiently.

Prerequisites

You can use the integrated business functions of the following SAP application components within the scenario *Spare Parts Delivery Processing*:

SAP Component	Functions
Customer Service (CS)	Processing of service notification
Materials Management (MM)	Procurement of (non-)stock materials; Inventory Management and withdrawal of stock materials
Sales and Distribution (SD)	Sales, delivery, transportation, and billing of materials (spare parts)
Quality Management (QM)	Quality inspection (on goods issue of spare parts)
Financial Accounting (FI)	Ongoing, automatic account postings upon invoice creation
Controlling (CO)	Ongoing, automatic account postings upon invoice creation

Process Flow

Service Notification

The creation of the service notification is the central starting point for processing the problem. You can initiate all necessary processes for rectifying the problem from the service notification, also including a delivery of spare parts, that the customer installs independently.

If necessary, you can branch directly from the service notification to the spare part sales order. If you then return to the service notification and save it, the sales order is also saved.

The following work steps for service notification processing are identical to those of the scenario [Repairs Processing at the Customer Site \[Page 102\]](#).

Spare Part Order

If you determine during notification creation, that a spare part simply has to be delivered and that a technician does not need to be dispatched, you immediately create a **sales order** (spare part order) from the service notification, on the basis of which further processing is then performed.

Spare Parts Delivery Processing

You use a sales order to define a one-off agreement to deliver products to a customer, and when doing so, the following central functions are available to you:

- Costing and pricing
- Availability check
- Transfer of requirements to demand management
- Delivery scheduling
- Credit limit check
- Export control

The spare parts are named in the sales order. The system supports you when determining the correct parts by making available the bills of material and the configuration data for the device.

Risk/Credit Management

In Credit Management, you can run static or dynamic checks on credit limits at different stages in sales order processing (for example, in the order, the delivery or at goods issue).

Risk Management provides additional procedures for guaranteeing against credit risk, such as documentary payments, payment cards or export credit insurance.

Quality Inspection for the Delivery

When you create a delivery note for the spare part that is to be delivered, the SAP System **automatically** creates an inspection lot and prepares the necessary shop papers for the quality inspection. The inspection lot can also be created **manually**.

If you have defined that the quality inspection can take place after the delivery, you can post the goods issue independently of the quality inspection.

If the inspection does not show any apparent defects, you record characteristic results for the inspection lot or partial lot.

You can document any defects that are found using defect data. If you want to manage the necessary corrections in the SAP System, you can create and process a quality notification in problem management.

You make a usage decision for the inspection lot.

You can now confirm costs that have arisen within the framework of results recording or when making the usage decision to the Production Planning department.

The system automatically creates a quality certificate.

If the quality inspection presents no technical findings, you can post the goods issue after making the usage decision.

Accompanying Process Flow for Spare Parts Delivery

Because the following process flow for spare parts delivery is identical, the detailed description of the steps listed below can be found in the scenario “**Repairs Processing at the Customer Site**”.

Spare Parts Delivery Processing

- **Warehouse Management**
- **Delivery and Transportation**
- **Billing**
- **Evaluations with SMIS**

Repairs Processing at the Customer Site (Field Service)

Repairs Processing at the Customer Site (Field Service)

Purpose

This scenario comprises the processing of planned (periodic) and unplanned services at the customer company.

In the case of **unplanned services**, information is usually entered in the form of problem notifications that you refer to later as the central information objects for service data during the execution of unplanned services at the customer company.

Services are not just performed on the basis of event-related notifications from the customer, but also on the basis of plannable or **periodic services**, that are defined in contracts (see Scenario [Long-Term Service Agreements \[Page 95\]](#)). You use maintenance plans and task lists to plan the services.

Planned services can be performed at the customer company for the following reasons:

- Legal regulations
- De facto regulations from customers
- To reduce the frequency of malfunctions at assets
- To increase the useful life of assets

To do this, the execution dates must be monitored automatically. The integration of contract management and the execution of periodic services is ensured by an automatic monitoring of dates on the basis of maintenance plans.

If you have to process service tasks with large numbers of orders, different service providers, and networked order operations at complex technical systems, the [Project Management System \[Page 155\]](#) is the ideal instrument for doing this. Processes such as these particularly take place during the installation of complete systems, extensive upgrades or complete overhauls of systems (for example, the maintenance of an airplane, the shutdown of a refinery or the inspection of a power plant).



A spare parts delivery service could conceivably be a component of your customer service at the level of this scenario, but is dealt with separately in the scenario [Spare Parts Delivery Processing \[Page 99\]](#).

Prerequisites

Within the framework of the scenario *Repairs Processing at the Customer Site* you can use the integrated business functions of the following SAP application components:

SAP Component	Functions
Customer Service (CS)	Processing of service notification and service order
Materials Management (MM)	Procurement of external services and (non-)stock materials; Inventory Management and withdrawal of stock materials
Sales and Distribution (SD)	Sales, delivery, transportation and billing of services

Repairs Processing at the Customer Site (Field Service)

Project System (PS)	Planning of complex services for customer devices in the form of a project; service order settlement to a project or WBS element
Quality Management (QM)	Quality inspection (on goods issue of spare parts)
Financial Accounting (FI)	Ongoing, automatic account postings upon invoice creation
Controlling (CO)	Ongoing, automatic account postings upon invoice creation

Process Flow

Maintenance Planning

When periodic maintenance tasks are executed for an object, it is often the case that particular activities have to be performed in a fixed cycle at certain time intervals, or based on a counter reading. You can represent such cycles in *maintenance strategies*. The strategies can be used centrally for all maintenance plans. You define the concrete time or performance-based cycles, for which maintenance activities are to be performed at the customer company, in individual maintenance packages that are maintained within the strategy.

You use *task lists* for plannable services, for which you know what types of services are to be performed, but not the due dates. A task list contains all information that is required for planning service orders:

- The necessary worksteps (operations)
- The time required for each operation
- The work center
- The necessary spare parts
- The necessary utilities

You use *maintenance plans* for services that have to be performed on a periodic basis. You use maintenance plans to determine both the scope of the service tasks that are due, as well as their due dates. You create a *maintenance item* in a maintenance plan for one or more maintenance activities. Maintenance items determine at which serviceable items the planned activities are to be performed. You can assign the required maintenance strategy to the maintenance plan.

The *scheduling* of the service tasks can be either time or counter-based, or a combination of the two. In addition to the strategies, there are also scheduling parameters for each maintenance plan, with which you can react flexibly to short-term or object-based changes.

You can also include task lists in maintenance plans. During maintenance plan scheduling, the system automatically copies the task list data into the generated service order.

The system calculates the execution dates based on the strategy and scheduling parameters that have been specified, and automatically triggers the corresponding service orders, that form the basis for executing the services, on the due dates.

Generally, maintenance planning at the customer company is based on agreements in a service contract. In this case, settlement of the service orders is performed via the service contract.

In the case of periodic services being performed at the customer company, service orders are generated automatically by the system by the scheduling of maintenance plans.

Repairs Processing at the Customer Site (Field Service)

Service Notification

The creation of the problem or service notification is the central starting point for processing the problem. You can initiate all necessary processes for rectifying the problem from the service notification, also including the dispatching of service technicians to rectify the problem in the field.

If a service technician is required during processing of the customer problem, you can perform preliminary planning in the service notification for subsequent service processing using tasks.

You create a service notification with information about devices, contact persons and the problem description during the following worksteps:

- *Object determination*
If your customer does not know the equipment or serial number of the serviceable item installed at his or her company, it is possible to search for items using various search functions (for example, a search within the customer's functional location structure list, or a search of equipment by customer) or by performing a self-defined search (for example, using company-internal matchcodes).
- *Object information screen*
In the Object Information screen, you can display information about the status of the last notifications, the object history and the classification data, as well as perform a warranty check. You can also decide here whether a spare part has to be delivered to the customer.
- *Partner determination*
You can select the partner (for example, customer, contact person, technician) using a list of contact persons for the reference object, or enter one manually.
- *Problem description*
You can specify, identify and select problem data by using texts, damage classification, and damage and object codes that are proposed by the system.
- *Processing*
You can specify activities that are required for service processing in the service notification.
- *Completion confirmation*
You can create completion confirmations for the tasks to be performed at notification header or notification item level, for example, the description of the cause of damage, the damage code, or the activities that were performed.

Service Order

You create a service order on the basis of the service notification to enable detailed planning of the required service activities during refurbishment of a serviceable item at the work center. You can plan in detail the necessary operations, dates, technicians, and materials (for example, consumable parts, spare parts, and repairable spares) in the service order. Task lists reduce the amount of time spent planning to a minimum. In addition, you can issue permits that are required for performing particular operations and define follow-up tasks.

You can use the service order when performing the following activities:

- *Planning of worksteps*
You can plan in advance operations that are to be processed internally or externally in the service order.
When you put the service order in process, the system automatically creates material reservations and purchase requisitions for planned stock materials and operations that are to be processed externally.

Repairs Processing at the Customer Site (Field Service)

- *Monitoring of task execution*
The service technicians perform the customer services on the basis of the service order and use completion confirmations, material consumption or travel expense notifications to document the progress being made.
When doing this, various communication interfaces to the service technician can be used (for example, short messages using a pager and completion confirmations via mobile phone).
The work progress of a customer problem can be documented either in the service notification or in the service order using different confirmation statuses (for example *in process*, *partially confirmed*, *technically completed*), so that you are always informed about the current status of the work. The service technicians can enter important technical findings in the object-related completion confirmation, such as measurement and counter readings, damage locations, machine breakdowns, or changes to the piece of equipment.
- *Entry and settlement of costs and revenues*
See *Settlement and Completion*.

Goods Movements

Withdrawals of required spare parts and materials from the warehouse are posted as a goods issue.

Service Product Order

If the customer requests a specific service product or service, you can immediately create a *sales order* (service product order) from the service notification, based on which further processing takes place.

You use a sales order to define a one-off agreement to deliver products to a customer, and when doing so, the following central functions are available to you:

- Costing and pricing
- Availability check
- Transfer of requirements to demand management
- Delivery scheduling
- Credit limit check
- Export control

The service products are named in the sales order. The system supports the you when determining the correct parts by making available the bills of material and the configuration data for the device.

Risk/Credit Management

In credit management you can run static or dynamic checks on credit limits at different stages in sales order processing (for example, in the order, the delivery or at goods issue).

Risk management provides additional procedures for guaranteeing against credit risk, such as documentary payments, payment cards or export credit insurance.

Warehouse Management

By implementing the SAP application component Warehouse Management (MM-WM), you can pick spare parts and process any differences that arise within inventory management for the warehouse, within the framework of delivery processing.

Repairs Processing at the Customer Site (Field Service)

Delivery and Transportation

You trigger shipping processing by creating deliveries from orders that are due to be shipped. The system checks both the availability of the product, and the validity of the shipping deadlines.

Goods issue represents the completion of shipping processing. It results in a reduction of stock and an update in the balance sheet account valuation in Financial Accounting (FI). You perform the goods issue posting for the spare part that is to be delivered from the warehouse, by specifying the movement type that corresponds to the goods issue for a sales order.

Depending on service agreements, the customer either receives the delivery free of charge, or is billed for it on the basis of the delivery note.

The transportation of spare parts to the customer requires transportation processing. This comprises the following areas:

- *Transportation planning*
You can use transportation planning to group the deliveries that are due to be transported. It comprises all activities that are to be performed before a shipment leaves the shipping point. This includes the following tasks:

- Appointing a forwarding agent
- Organizing the means of transport
- Specifying the transportation route
- Defining individual legs of the route, to determine the best possible route
- Defining shipping deadlines

Various shipping document types are available for the different forms of transportation activities (for example, individual shipments, stop-off shipments). The shipping documents serve as the basis for performing transportation planning.

- *Transportation processing*
Transportation processing comprises all activities that have to be performed when a means of transport leaves the shipping point. This includes, for example, the weighing and loading of materials or spare parts.

Completion Confirmation

You can use the order confirmation to implement the following confirmation types:

- Completion confirmations of time
- Invoice receipts
- Entry of services performed
- Goods issues from the warehouse
- Technical completion confirmation report
- Measurement and counter readings
- Equipment changes

Time sheets (CATS) can also be used by internal and external employees to enter time data for all applications. Completion confirmations are generated from working time data entered (for example, to update capacity requirements and dates, or calculate costs).

Repairs Processing at the Customer Site (Field Service)

The time sheet is equipped with an approval procedure for the time data entered.

Settlement and Completion

Costs incurred are automatically recorded in the service order and can be checked in the cost report at any time. You have the following options during the settlement of a service order:

- For a service order **without** reference to a service contract: The service order is **revenue-bearing** and can either be settled to a profitability segment, a controlling object, a G/L account or to another settlement receiver.
- For a service order **with** reference to a service contract: The service order is **non-revenue-bearing** and can only be settled to the service contract.
You can refer to the service contract when you create the service notification.

The completed service orders, together with their notification, order and object data, automatically create a *service history* in the system for each individual device and asset. This data is made available to you, enabling you to perform analyses of past service activities and planning for future activities over long periods of time.

The service history comprises:

- A usage history for the customer devices
- A history of completed orders and notifications, including the resources used

You can use *historical order creation* to subsequently transfer an historical order that does not originate from the SAP System, but whose service history data you would like to include in your analyses.

Billing

You can bill services that have been defined in the system by service product master records with their respective prices. You can create credit and debit memos in complaints or rebate processing.

When performing resource-related billing for services, you base this on the actual resources that have been used (materials consumed, time spent) and other expenses in the form of kilometers traveled or direct costs, and present these costs to the customer in a billing document.

You can perform resource-related billing as soon as a service order has been confirmed as being complete. When this happens, all costs that have arisen as a result of the order are collected in the order.

If no service contract exists or cover is not provided by the contract and the order type permits revenue postings to the order, you can directly create a billing request (debit memo request) for resource-related billing for the service order.

Depending on the service agreement, the costs are either settled internally (for example, if the service is covered by a service contract or warranty) or billed to the customer. It is possible to refer automatically to special price agreements in the service contract (for example, special prices for spare parts or particular discounts for services).

You create the actual billing document for the customer during billing processing on the basis of this billing request.

It is also possible to bill fixed prices.

Repairs Processing at the Customer Site (Field Service)

The creation of the billing document is performed on the basis of deliveries (products) or expenses for services in orders. Billing plans support you when performing periodic or milestone billing.

The billing document is completely integrated in Financial Accounting (accounts receivable accounting) and Profitability Analysis. This means that the creation of a billing document triggers postings to the appropriate financial accounting and cost accounting accounts.

Evaluations With the Service Maintenance Information System (SMIS)

The Logistics Information System (LIS) is part of SAP's Open Information Warehouse, whose objective is to integrate the data of various information systems, and to make available and easily accessible all company information that is important for decision makers (Executive Information System, EIS).

Important information is recorded in the LIS statistics database during every business transaction. When this happens, a quantitative reduction of the data volume takes place, due to the periodic recording, and also a qualitative aggregation of the statistics-relevant information.

The SAP System provides various methods for analyzing the data:

- Predefined standard analyses, which you use to analyze generally known and required data constellations without having to make any further settings
- Flexibly defined, customer-specific programs, with which you can define your individual list layouts and specific formulas

In the Service Management Information System (SMIS), you can use all the options described above specifically for Customer Service analyses.

You can perform both object-related and customer-related standard analyses in the SMIS:

- **Object-related evaluations** refer to information about rectifying the malfunction, or maintenance (for example, devices, manufacturer, notification processing, service orders, service notifications, malfunction analysis).
- **Customer-related evaluations** refer to information from Sales and Distribution (for example, customer, services, sales contracts, orders, sales organization).

Repairs Processing in the Service Center (In-House)

Purpose

This scenario comprises the processing of planned (periodic) and unplanned services at internal work centers.

In this case, the customer sends the affected serviceable item (for which a malfunction has occurred) to the service provider, within the framework of a maintenance agreement. The repair of the serviceable item is performed in-house, meaning in a service center that has been set up specifically for this purpose. Once the repair has been completed, the device is sent back to the customer.

In the case of **unplanned services**, information is usually entered in the form of problem notifications that you refer to later as the central information objects for service data during the execution of unplanned services at the customer company.

Services are not just performed on the basis of event-related notifications from the customer, but also on the basis of plannable or **periodic services**, that are defined in contracts (see Scenario [Long-Term Service Agreements \[Page 95\]](#)). You use maintenance plans and task lists to plan the services. The integration of contract management and the execution of periodic services is ensured by an automatic monitoring of dates on the basis of maintenance plans.

Prerequisites

Within the framework of the scenario *Repairs Processing in the Service Center* you can use the integrated business functions of the following SAP application components:

SAP Component	Functions
Customer Service (CS)	Entry and processing of service notifications; Performance and settlement of services (service order)
Sales and Distribution (SD)	Sales and billing of services; Delivery and return delivery of customer devices; Delivery and return delivery of loaner devices; Credit memos
Materials Management (MM)	Entry of goods movements (customer devices and loaner devices); Procurement of external services and non-stock material; Inventory Management and withdrawal of stock material
Quality Management (QM)	Entry of customer complaints; Quality inspection on goods issue and, where required, on goods receipt of customer devices
Financial Accounting (FI)	Ongoing, automatic account postings upon invoice creation
Controlling (CO)	Ongoing, automatic account postings upon invoice creation



The process flows in *Quality Management* that are relevant for this scenario concerning the (optional) quality inspection for the receipt of customer devices are represented separately in the scenario [QM in Materials Management \[Page 124\]](#).

Repairs Processing in the Service Center (In-House)

Process Flow

Service Notification

Repairs processing can be triggered by the entry of a problem or service notification. You can initiate all necessary processes for rectifying the problem from the problem notification, including, for example, a service within the service work center. You can automatically create a repair order via the action box in the notification.

The use of service notifications is optional in this scenario. It is also possible to create a repair order directly in repairs processing (see below).

The following work steps for service notification processing are identical to those of the scenario [Repairs Processing at the Customer Site \[Page 102\]](#) and are described there in detail.

Customer Complaint

You can enter customer complaints on a temporary basis in the form of a quality notification. You can automatically create a repair order via the action box in the notification.

The use of quality notifications in this scenario is optional. It is also possible to create a repair order directly in repairs processing (see below).

Entering customer complaints using quality notifications is described in more detail in the scenario [QM in Sales and Distribution \[Page 130\]](#).

Repair Order

You send the exact and binding product information (for example, prices, delivery dates) to the customer in the form of a quotation. A *sales order* can be created directly from a valid quotation that has been accepted by the customer.

The necessary logistics and repairs operations performed within the framework of repairs and return processing are linked together using the *repair order* - a special sales order type in the SAP Sales and Distribution (SD) application component.

You use a repair order, that you either create directly, from a customer quotation, or from a service notification, to enter the device (serviceable material) that is to be repaired for a customer. The individual operations that can be represented within the framework of integrated repairs processing are:

- Accepting devices to be repaired and returning those that have been repaired.
- Dispatching and collecting devices loaned to the customer
- Triggering of repairs
- Documenting that an item is to be scrapped
- Triggering credit memo processing, so that the customer is reimbursed for goods that cannot be repaired
- Documenting resource-related billing data

Goods Movements

You post a goods receipt in order to document that the serviceable material delivery from your customer has arrived at your plant. The serviceable material is posted as sales order stock. For this you require a repair order in which you have documented the repair requests of your customer.

In addition, you can also post necessary loaner device deliveries as well as the corresponding

Repairs Processing in the Service Center (In-House)

return deliveries to your customer as goods issue and receipt.
Finally, you enter a goods issue for the return delivery of the repaired or replaced serviceable material to the customer.

Service Order

The service technician repairs the serviceable material for which you have created a repair item. He then refers to the service order which was automatically created for the repair item in order to document the following important information:

- Material required for the performance of the repairs.
- Tasks that must be performed.
- Costs incurred (for example, hours worked).

The following work steps for service order processing are identical to those of the scenario [Repairs Processing at the Customer Site \[Page 102\]](#) and are described there in detail.

Subsequent Process Flow for Returns and Repairs Processing

Because the following process flow for *repairs processing in the service center* is identical, the detailed description of the steps listed below can be found in the scenario [Repairs Processing at the Customer Site \[Page 102\]](#).

- **Risk/Credit Management**
- **Warehouse Management**
- **Delivery and Transportation**
- **Completion Confirmation**
- **Settlement and Completion**
- **Billing**
- **Evaluations with SMIS**

Result

The scenario *repairs processing in the service center* includes all business processes involved, such as the inbound and return delivery of a serviceable material, the inbound and return delivery of a loaner device, or the customer invoice for services provided (resource-related). In this way, you can follow the different stages of the customer repair order from inspection to completion confirmation. The link between documents and the initial repair order guarantees an overview of all the relevant documents.

Plant Maintenance

Plant Maintenance

Definition

All business transactions, which involve the planning, processing and documenting of repair tasks to corporate operating and production resources (for example buildings, machines and so on) in order to ensure availability for use, are grouped together under **Plant Maintenance**.

Use

With respect to the complete life cycle of the fixed asset, the business transactions in Plant Maintenance primarily represent the technical aspects of general asset management. They comprise all the technical tasks (for example, maintenance and repair) that ensure the optimum condition and utilization of, for example, production systems, vehicles, hardware, software or buildings. This can involve both scheduled, periodic maintenance and inspection tasks, and issuing orders for internal and external repairs in the event of unforeseen malfunctions.

The ever-increasing degree of automation within industry results in high fixed asset costs, so high availability of production systems is essential for cost-effective distribution of fixed costs.

In addition, more stringent quality assurance requirements necessitate greater planned maintenance of production systems.

The importance of technical asset management has grown as a result of increasing legal and social requirements with respect to environmental protection and safety at work.

Plant Maintenance includes tasks for:

- Inspection (tasks to determine the actual condition) of operational systems
- Preventive maintenance (tasks to maintain the target condition) of operational systems
- Repair (tasks to restore the target condition) of operational systems

Other activity types for Plant Maintenance are:

- Modifications
- Refurbishment
- Production of tools
- Cleaning work

Breakdown Maintenance

Purpose

In Plant Maintenance, unforeseen events can occur in addition to periodic maintenance tasks. Such malfunctions or exceptional operational situations require a quick response from the maintenance organization. For this purpose, the *Plant Maintenance* application component provides numerous options for entering maintenance tasks flexibly, tailoring them to the specific requirements of your company, and managing them easily.

This scenario describes the process flows, which occur when maintenance tasks are executed that usually precede a malfunction at a technical object, for example:

- Malfunctions that seriously endanger further production (processing of emergency tasks)
- Malfunctions that do not seriously endanger further production, but that should be rectified in the medium term to restore the optimal condition of the system

This scenario also describes corrective maintenance processing, which involves work scheduled based on dates and resources, even if immediate repair work is not necessary (for example, when an old, but still functioning aggregate is replaced).

Prerequisites

In the *Breakdown Maintenance* scenario, you use business functions integrated from the following R/3 application components:

R/3 Component	Functions
Plant Maintenance (PM)	Execution of maintenance tasks on company-internal technical systems
Materials Management (MM)	Procurement of non-stock materials, Inventory management and withdrawal of stock materials
Project System (PS)	Order settlement to a project or WBS element
Controlling (CO)	Order settlement to a controlling object (for example, a cost center)

Process Flow

Notification

You can use notifications to describe in detail an exceptional technical condition at a defective reference object. You request the necessary maintenance task using a notification and document the task performed.

During notification creation, the *Plant Maintenance* application component distinguishes between the following types of notification:

- *Malfunction report:*
Describes the condition or malfunction at a maintenance object, which is limiting its performance in some way.
- *Maintenance request:*
Requests a service or task from the maintenance department when no malfunction exists.

Breakdown Maintenance

In this scenario, the term notification refers in particular to the malfunction report. Malfunctions at a technical object are first entered using the malfunction report.

Order

You can plan the following sub-aspects for the order:

- Spare parts required (internal/external)
- Work centers affected
- Decision on internal or external processing

In particular, you use the order to:

- Manage maintenance activities in terms of planning and execution
- Collect the costs incurred by the tasks
- Create a subsequent maintenance history for the technical objects

When processing orders, you can use *Work Clearance Management* if you have to isolate technical objects electrically for the duration of maintenance tasks or special tests, or separate them mechanically from other system parts.

You can only perform the following activities once you have released the order:

- Print shop papers for the order
- Withdraw material for the order from the warehouse (planned and unplanned)
- Execute purchase orders for requirement requests
- Post goods receipts
- Enter external services
- Post invoice receipts
- Enter completion confirmations of time

After the order has been released, the individual activities can be performed either by internal maintenance employees or external service companies (external service providers).

Capacity Planning

You generally plan dates and resources before executing a plannable, non-ad hoc maintenance task. You can evaluate the capacity situation and, if necessary, perform capacity leveling during any phase of order processing.

Modification of Technical Systems

During maintenance processing, you can install, dismantle and replace individual pieces of equipment, several pieces of equipment, or complete equipment hierarchies for functional locations. To do this, you change the assignment of the equipment or equipment hierarchy to a functional location. You can save the installation and dismantling data for a piece of equipment in its usage list.

Material Movements

The material movements in this scenario involve goods issues of required spare parts and materials.

Completion Confirmation

You can use the order confirmation to implement the following confirmation types:

- Completion confirmations of time

- Goods movements
- Service entries (services)
- Invoice receipts
- Entry of tasks/activities
- Technical confirmation report (for example, causes of damage)
- Entries for measurement and counter readings
- Equipment changes

Time sheets (CATS) can also be used by internal and external employees to enter time data for all applications. Completion confirmations are generated from working time data entered (for example, to update capacity requirements and dates, or calculate costs).

The time sheet is equipped with an approval procedure for the time data entered.

Settlement and Completion

Both the notification and order are completed after the requested maintenance work has been executed. There are two completion functions available:

- Technical completion
- Business completion

Technical completion is used to cancel all outstanding purchase requisitions, open reservations and capacities that still exist for the order. Although the order can continue to receive costs (for example, from invoice receipts for materials delivered and used), it is blocked for all other processing changes.

During *order settlement*, the costs incurred, which were collected temporarily on the order, are forwarded to the receiver (for example, to the cost center of the repaired object).

Business completion is used to indicate that the order posting has been completed. The order cannot receive any more postings.

Evaluations with the Plant Maintenance Information System (PMIS)

You can use the Plant Maintenance Information System to perform various analyses (for example, on damage, activities performed, or costs for particular maintenance objects).

The R/3 System provides various methods for analyzing this data:

- Predefined standard analyses, which you use to analyze generally known and required data constellations without having to make any further settings
- Flexibly defined, customer-specific program, which you can use to define your individual list layouts and specific formulas

Preventive Maintenance

Purpose

Ensuring a high availability of objects in the long term is one of the most important tasks of Plant Maintenance. Preventive maintenance is a suitable instrument for avoiding system breakdowns or the breakdown of other objects, which in addition to the repair costs, often create much higher costs through the resultant breakdown in production.

This scenario describes the planning and processing of periodic maintenance tasks at technical objects. Preventive maintenance is the generic term used for inspections, maintenance and planned repair tasks, in other words, maintenance tasks that are repeated regularly.

Further reasons for preventive maintenance can include:

- Legal regulations
- Environmental requirements
- De facto regulations from customers
- Quality assurance of products manufactured at a technical system

You can use preventive maintenance to describe dates and the scope of maintenance and inspection tasks that can be planned on objects, to define the cycles for scheduling tasks based on time or performance, and to synchronize dates for several maintenance tasks on different objects.

Prerequisites

In the *Preventive Maintenance* scenario, you use business functions integrated from the following R/3 application components:

R/3 Component	Functions
Plant Maintenance (PM)	Planning and implementation of periodic maintenance tasks on technical systems
Materials Management (MM)	Procurement of non-stock materials; Inventory management and withdrawal of materials in stock; Purchase of services
Project System (PS)	Order settlement to a project or WBS element
Asset Management (AM)	Order settlement to an asset
Controlling (CO)	Order settlement to a controlling object

Process Flow

Maintenance Planning

1. Types of maintenance plan

The following types of maintenance plan are available:

- **Maintenance plan with maintenance strategy**
In the individual **maintenance packages** that are maintained within the strategy, you

Preventive Maintenance

define the concrete time or performance cycles, within which the maintenance activities should be performed.

- **Single cycle plan**

No maintenance strategy is defined for single cycle plans. Here, you define exactly **one** time-based or performance-based maintenance cycle, in which you specify the interval at which the maintenance plan should be performed.

- **Multiple counter plan**

Multiple counter plans do not have their own maintenance strategy either, but they have cycle sets. They contain a combination of time-based and performance-based cycles.

In the maintenance plan, you enter one or more maintenance items for each planned maintenance task.

You can create *task lists* to describe tasks repeated on objects. In the task lists, you describe the individual work steps that must be executed for inspections, preventive maintenance and repairs. For strategy-based plans, you can assign each work step to one or more maintenance packages.

2. Scheduling

The system uses maintenance plan scheduling to generate the corresponding maintenance orders for all maintenance items affected at the due date, and suitable maintenance notifications, if required.

Worklist

From maintenance planning, you can combine several notifications, which have been generated from maintenance plans, for an order, and thereby generate a worklist for planned maintenance.

You create separate maintenance plans with the maintenance call object *Notification* for all the planned activities within your plant. Enter a task list for the maintenance item in the maintenance plan, in which the activities to be performed are described.

The system uses maintenance plan scheduling to generate a notification for each maintenance item in a maintenance plan at the due date for the maintenance calls.

When you call up the list editing function for notifications, you can display the notifications generated and select those that should be grouped together for an order ("worklist").

You can then print this order with all its operations, process it and confirm the completed activities for the order.

Subsequent Process Flow for Preventive Maintenance

The decisive criterion for the *Preventive Maintenance* scenario is the preceding maintenance planning and the possible resultant creation of a worklist. With the exception of the optional use of the notification, the following process flow is identical to that for the [Breakdown Maintenance \[Page 113\]](#) scenario.

Preventive Maintenance

- **Notification** (optional)
- **Order**
- **Capacity Planning**
- **Modification of Technical Systems**
- **Material Movements**
- **Completion Confirmation**
- **Settlement and Completion**
- **Evaluations with the Plant Maintenance Information System (PMIS)**

Project-Based Maintenance

Purpose

This scenario describes the concrete processing of complex maintenance work with a project character, for example, revision work or complete modification of a technical system, based on previous project planning.

When planning and processing complex maintenance work using project management in parallel, you are supported by the integrated functions of the PS application component.

To manage complex maintenance work using a PS project, you must first create the PS project with a project structure plan and/or network. You then assign the required maintenance orders to the appropriate project. You thereby ensure that all postings to the order are transferred to the project.

The procedures required for project structuring are described in the [Internal Project \[Page 156\]](#) scenario for Project Management. The latter scenario is intended to supplement the scenario described here.

Prerequisites

In *Project-Based Maintenance*, you use business functions integrated from the following R/3 application components:

R/3 Component	Functions
Plant Maintenance (PM)	Execution of maintenance tasks on technical systems
Materials Management (MM)	Procurement of non-stock materials; Inventory management and withdrawal of stock materials
Project System (PS)	Planning of complex maintenance tasks at internal systems in the form of a project; Order settlement to a project or WBS element
Controlling (CO)	Order settlement to a controlling object

Process Flow

The actual maintenance processing, using maintenance notifications and orders, as well as internal and external resources, which occurs after the project-relevant process (*Internal Project* scenario) is identical to that for the [Breakdown Maintenance \[Page 113\]](#) scenario.

- **Notification**
- **Order**
- **Capacity Planning**
- **Modification of Technical Systems**
- **Material Movements**
- **Completion Confirmation**
- **Settlement and Completion**

Project-Based Maintenance

- **Evaluations with the Plant Maintenance Information System (PMIS)**

Refurbishment in Plant Maintenance

Purpose

High value components are often used at production plants or other technical objects (for example, pumps, motors) and are replaced by a repairable spare in the event of a malfunction and then refurbished using a separate order.

This scenario is of particular interest to companies for which system availability plays a crucial role (for example, process industry, oil extraction and processing, steel manufacturing and so on), and who keep repairable spares in stock to ensure a high system availability. The refurbishment of these defective spares, which are generally of high value, is of great economic importance for these companies and is often a core process within their maintenance department.

Prerequisites

In the *Refurbishment in Plant Maintenance* scenario, you use integrated business functions from the following R/3 application components:

R/3 Component	Functions
Plant Maintenance (PM)	Execution of maintenance tasks on company-internal technical systems
Materials Management (MM)	Procurement of non-stock materials, Inventory management and withdrawal of materials in stock, Order settlement to material
Project System (PS)	Order settlement to a project or WBS element
Controlling (CO)	Order settlement to a controlling object (for example, a cost center)

Process Flow

Order

Refurbishment orders are created for defective repairable spares. These refer to:

- Individual repairable spares (pieces of equipment)
- Non-individual repairable spares (material)

The refurbishment order can be used to plan and execute the transition of the repairable spare from its initial defective condition to a new target condition. Each of these orders can refer to one or more repairable spares that have to be refurbished from the same initial condition to the same final condition.

Capacity Planning

You generally plan dates and resources before executing a plannable, non-ad hoc maintenance task. You can evaluate the capacity situation and, if necessary, perform capacity leveling during any phase of order processing.

Goods Movements

The goods movements involved in this scenario are:

Refurbishment in Plant Maintenance

- Goods receipts of defective repairable spares that are to be refurbished from production into the repairable spares warehouse
- Goods issues of defective repairable spares that are to be refurbished from the repairable spares warehouse to refurbishment
- Goods issues of spares and materials that are required for refurbishment
- Goods receipts of refurbished repairable spares in the repairable spares warehouse
- Goods issues of refurbished, functional, repairable spares from the repairable spares warehouse to production

Accompanying Process Flow for Order Processing

The decisive criterion for the *Refurbishment in Plant Maintenance* scenario is the special character of the refurbishment order, with all its movement types and material conditions. With the exception of the material movements, the resulting maintenance process is identical to the process for the [Breakdown Maintenance \[Page 113\]](#) scenario.

- **Completion Confirmation**
- **Settlement and Completion**
- **Evaluations with the Plant Maintenance Information System (PMIS)**

Result

After refurbishment, both the stock value of the repairable material in the warehouse and the charges to the cost center change:

- In inventory management, the stock assets will have increased in value after the refurbishment.
- By withdrawing the defective material, a material debit is created; by returning the refurbished material, a credit memo is applied to the order. The account assignment object (for example, the warehouse as the receiving cost center) receives a credit memo to the amount of the difference minus the resources required (internal service, other spare parts, external services and so on).

Quality Management

Definition

The enterprise area *Quality Management* focuses on the market requirements for quality management procedures, the business processes in a company, as well as data processing support for integrating quality management functions in the logistics supply chain.

The main task of a quality management system is to ensure that at every stage of the logistics supply chain, business processes and the resulting products fulfill the quality requirements that have been laid down for them.

Progressive quality management – as defined in the ISO 9000 series of standards – requires the effective integration of QM systems in all processes within an organization. Different demands are placed on a company's QM System, depending on the industry sector involved; for example, FDA (US Food and Drug Administration) or GMP (Good Manufacturing Practices). The standards for QM systems must also be taken into consideration, for example, ISO 9000, ISO 9001 and QS 9000.

Total Quality Management (TQM) describes the objectives of a modern quality management system in a company. The integration of QM processes in the procurement, production, and sales and distribution processes ensures maximum effectiveness in achieving, safeguarding, and improving quality standards.

Use

The integration of the QM application component in the R/3 System allows quality management tasks to be combined with those in other applications (such as materials management, production, sales and distribution and cost accounting) and supports tasks associated with quality planning, quality inspection and quality control. In addition, it controls the creation of quality certificates and manages problems with the help of quality notifications.

QM in Materials Management

QM in Materials Management

Purpose

This scenario describes the use and integration of the *Quality Management* (QM) component in the procurement processes of a company.

Quality management supports you in the management of materials (procurement):

- In purchasing when
 - Selecting and releasing suitable vendors
 - Creating and processing requests for quotations and purchase orders
- In inventory management when
 - Processing goods receipt inspections
 - Releasing or rejecting lots
 - Valuating batches
- In batch storage when monitoring expiration dates and deadlines for recurring inspections
- When processing complaints against vendors for substandard deliveries

Prerequisites

In the scenario *QM in Materials Management*, you use the integrated business functions of the following R/3 components:

Component	Functions
Quality Management (QM)	Performing quality inspections at goods receipt for a purchase order Evaluating vendors Processing complaints against vendors (quality notification)
Purchasing (MM-PUR)	Creating purchase orders Creating, releasing, and shipping purchase orders, contract release orders or individual schedule lines
Inventory Management (MM-IM)	Controlling goods movements
Controlling	Recording and settling nonconformity costs
SAP Business Workflow	Controlling follow-up processes Sending messages to the departments affected
SAP ArchiveLink	Storing customer-specific quality certificates in the optical archive Assigning and managing incoming and outgoing documents related to a quality notification

Process Flow

Procurement and Purchasing

In the quality information record (Q-info record), you define specific information relating to the vendor and to the delivered material at plant level, such as references to quality assurance agreements, delivery status (model, production series), release periods, and quantities.

QM in Materials Management

You use this to control the source inspection at the vendor's premises and the criteria for an inspection skip.

You release vendors, if they are to deliver goods that are subject to quality control. You can limit the release of these supply relationships to a specific time frame and a maximum delivery quantity. If the vendor has serious quality problems, you can block requests for quotations, purchase orders, or goods receipts for specific materials supplied by this vendor.

For the evaluation of the vendor, the system summarizes quality scores from vendor audits, goods receipt inspections, and complaints against the vendor. Information about the vendor's delivery reliability and price record is also provided from purchasing for evaluation purposes. The QM component provides information about the vendor's QM system and the quality of the delivered goods.

When you receive requests for quotations and purchase orders for materials that are subject to quality control, your quality system must have released the vendor. If this is not the case, the purchasing agent is informed. When the purchase order is placed, the vendor automatically receives information about the technical delivery terms, the quality assurance agreement, and his or her obligation to include a quality certificate with the delivery.

Quality Inspection in MM

1. At the time of goods receipt, the SAP System automatically creates an inspection lot and provides you with the shop papers required for the quality inspection.
2. If you have scheduled a source inspection instead of a goods receipt inspection, the SAP System automatically creates an inspection lot for this.
3. You record characteristic results.
4. You can document any defects that are found using defect data. To manage a defect, together with its corrective action in the system, you activate and process a quality notification.
5. The quality inspection ends with the inspection lot completion, which involves making a usage decision for the total goods receipt quantity. If certification is required, you have to confirm receipt of the relevant certificate at the time the usage decision is made (at the latest).

If you release the material...	If you reject the material...
The system posts the goods to unrestricted-use stock, thus allowing them to be subsequently placed into storage	The system can automatically create a complaint against the vendor. You can then return the material to the vendor

As long as you have not made the usage decision, the system blocks the automatic payment of an invoice.

You can use a QM order to enter and settle costs for inspection activities that were incurred when results were recorded or when the usage decision was made.

If the system releases the goods receipt quantity because no defects were found in the quality inspection, you can post the goods to unrestricted-use stock.

Quality Notifications for Complaint Against Vendor

You can use quality notifications to process and document complaints against vendors that have arisen as a result of poor quality products in procurement.

QM in Materials Management

1. The products are stored in the warehouse. You can either complain about the goods (without returning them) or return them. If you have already created a return for sales order processing, the system automatically creates an inspection lot for the inspection that subsequently takes place.



Alternatively, the customer sends a collective shipment, together with the corresponding inspection reports.

2. You then create a quality notification in which you can enter the object concerned, the details of the problem, the departments responsible for the notification in your company, as well as the corrective tasks and activities to be performed.
If the substandard product in the problem is a material or product handled in batches, you can call up a batch where-used list to identify, for example, the batches of raw material or semi-finished products that make up the affected batch, or the batches of semi-finished or finished products that contain the affected batch.
3. Once you have performed and confirmed all the required tasks, you complete the quality notification.



Often, you only ascertain whether a task was successful after the quality notification has been completed. In such cases, you can document the success of a task retrospectively in the quality notification.

It is advisable to use quality notifications for complaints against a vendor if:

- Several people are required to process a problem
- You want to improve your products and processes on an ongoing basis, by systematically analyzing problems

Result

The data collected and documented in the quality notification is available for more detailed analysis in the **QM Information System**. In this way, you build a knowledge base that helps you to improve the quality of your products and processes on an ongoing basis.

QM in Production

Purpose

This scenario describes the quality inspections that take place during and after the manufacturing operation. These inspections can play an important part in different industry sectors and production types. They can be integrated, for example, in lot-based machine assembly, mass production of machine parts or batch-based foodstuff production.

The manufacture of products using batches or recipes in certain branches of the process industry is subject to stringent requirements regarding product quality and manufacturing procedures, which are laid down by regulatory bodies (such as the FDA and GMP). These requirements apply primarily to the pharmaceutical industry, but also to certain sectors in the foodstuff and cosmetic industries.

Prerequisites

In the scenario *QM in Production*, you use the integrated business functions of the following R/3 components:

Component	Functions
Quality Management (QM)	Processing quality notifications Carrying out quality inspections during production and for goods receipts from production
Production Planning (PP)	Processing lot-based shop manufacturing with production order or mass production with production version (work scheduling and production processing)
Production Planning in the Process Industry (PP-PI)	Processing batch-based process manufacturing (chemical, pharmaceutical, foodstuff industries) with process order
Controlling (CO)	Recording and settling nonconformity costs
SAP Business Workflow	Controlling follow-up processes Sending messages to the departments affected
SAP ArchiveLink	Assigning and managing incoming and outgoing documents of a quality notification

Process Flow

Quality Inspection During Production

- When you release a manufacturing order (production order, process order or production version) the system automatically creates an inspection lot to manage inspection specifications and inspection results in all operations. You can also create an inspection lot manually before the manufacturing order is released. The system provides the required shop papers for the quality inspection.
These inspections are based on a separate inspection plan. If several different batches are

QM in Production

produced and delivered to the warehouse during a manufacturing order, an inspection lot is created for each batch.

- In a quality inspection during production, you can plan numerous inspections for an operation by using inspection points. This allows you to constantly monitor the production operation and to assign the partial quantities (subsets) that have been produced to the inspection points.
- You then record characteristic results. If there are partial quantities with varying characteristics, you can divide the total quantity for the production order into partial lots, based on the inspection points.
You can record inspection activities and results when you confirm operations in the manufacturing order.
- You can document any defects that are found using defect data. To manage a defect, together with its corrective action in the SAP System, you activate and process a quality notification.
- You make a usage decision for the total quantity of the inspection lot at inspection lot completion. You can also make a usage decision for each partial quantity (partial lot) of the inspection lot. The usage decision for the entire lot documents the completion of all inspections, or the completion of the manufacturing order from a QM standpoint.
- If no defects were found in the quality inspection, you post a goods receipt. This posting updates the stock quantities and the stock value of the goods produced.

Quality Inspection for a Goods Receipt from Production

The SAP System can create a new inspection lot at goods receipt, and if required, can post the material to inspection stock.

A quality inspection for a goods receipt from production is similar to the inspection during production. It does not however use inspection points and partial lots. Alternatively, an “early” inspection lot can be created for the goods receipt posting from production when the order is released. Partial quantities can then be posted continually to this lot, each time goods are received from production.

You record the costs of the inspection in a QM order.

To complete the inspection, you make a usage decision for the goods receipt quantity. The inspection lot quantity that has been accepted is posted to unrestricted-use stock. You can make special postings for quantities that have not been accepted.

Internal Quality Notifications

You can use internal quality notifications during production to process and document defects in quality that have been identified.

For example, if an employee identifies serious defects in semi-finished products or machines, you can create a quality notification in which you can enter the objects concerned, the departments responsible for the notification in your company, as well as the corrective tasks and activities to be performed.

If the substandard product in the problem is a material or product handled in batches, you can call up a batch where-used list to identify, for example, the batches of raw material or semi-finished products that make up the affected batch, or the batches of semi-finished or finished products that contain the affected batch.

Once you have confirmed all the required tasks that have been performed, you complete the quality notification.

Often, you only ascertain whether a task was successful after the quality notification has been completed. In such cases, you can document the success of a task retrospectively in the quality notification.

It is advisable to use quality notifications in production if:

- Several people are required to process a problem
- You want to improve your products and processes on an ongoing basis, by systematically analyzing problems

Process Industry

The batch and recipe-oriented manufacture of products in the process industry also requires a special approval procedure, when the individual process orders are released. This procedure plays an integral role in safeguarding specific quality requirements in the relevant industry sectors.

Result

Once you have processed the quality notification, you have rectified the problem that occurred and removed the cause of the problem.

In a quality inspection, you can give attributes to the batches produced with the help of the inspection results. You can then use these attributes in Sales to select specific batches at a goods issue posting.

Once the production operation has been completed, you have goods of an acceptable quality in your warehouse, provided that no defects were found at the quality inspection. These goods are available for use as required.

Quality Management in Sales and Distribution

Quality Management in Sales and Distribution

Purpose

This scenario describes how you use and integrate the *Quality Management* (QM) component in the sales and distribution processes of a company.

With this component, you can support your sales and shipping activities by:

- Performing quality inspections for delivery of a material or product before it leaves your premises (quality inspections for a delivery).
- Creating quality certificates for individual deliveries
- Managing customer-specific terms of delivery or inspection specifications
- Processing customer complaints for substandard or defective deliveries

Prerequisites

In the scenario *QM in Sales and Distribution*, you use the integrated business functions of the following R/3 components:

Component	Functions
Quality Management (QM)	Performing quality inspections for a delivery Creating quality certificates for delivery Processing customer complaints (quality notifications)
Sales and distribution (SD)	Accessing sales data for quality certificate creation (for example, from the customer master record or sales order)
Controlling (CO)	Entering and settling nonconformity costs
SAP Business Workflow	Controlling follow-up processes Sending messages to the departments affected
SAP ArchiveLink	Assigning and managing incoming and outgoing documents related to a quality notification

Process Flow

Customer-Specific Inspection Specifications

For configurable materials, the customer can specify characteristic values for a required variant. You can define that these specifications from the variant configuration are automatically copied into production inspections and their related goods inspections.

If you manage the stock of a material in batches, the system allows you to select suitable batches using batch characteristics. You can use the characteristic values defined for batch determination as the specifications for the final inspection at the shipping stage.

If the inspection characteristics come from different sources and are not compatible, the specifications from batch determination or from the variant configuration have precedence over the specifications from the material specification or inspection plan.

Quality Management in Sales and Distribution

Quality Inspection for Delivery and Return Delivery

When you create a delivery note for a product, the SAP System **automatically** opens an inspection lot and provides the necessary shop papers for a quality inspection. The inspection lot can also be created **manually**.

If you manage the product to be delivered in batches and one delivery item cannot be covered by a single batch, the system can divide the delivery item between several batches and create a partial lot for each batch.

If you have defined that the quality inspection can take place after the delivery, you can post the goods issue independently of the quality inspection.

You enter characteristic results for the inspection lot or partial lot.

You can document any defects that are found using defect data. To manage a defect, together with its corrective action in the system, you activate and process a quality notification.

If you recorded characteristic results for partial lots, you make a usage decision for the partial lot and the entire inspection lot. Otherwise, you make a usage decision for the inspection lot.

You can use a QM order to enter and settle costs for inspection activities that were incurred when results were recorded or when the usage decision was made.

If necessary, the system automatically creates a quality certificate.

If no defects were found in the quality inspection, you can post a goods issue after making the usage decision.

Certificate Creation

Some industry sectors include quality certificates with the delivery. These certificates document the material specification or the inspection results of a batch. The SAP System provides many options for certificate creation. It automatically finds the delivery certificate recipient and selects the correct form, content, and output device according to the information for the addressee and environment. It uses information from Sales and Distribution (for example, from the customer master or sales order) and if required, information from the Quality Management component (for example, from inspection specifications or inspection results), or from the Materials Management component (for example, from the batch specification, or from the specifications for batch determination). The SAP System creates the certificate at the same time as the other shipping documents and prints them using a printer or fax. The quality certificates that are produced can be stored using the SAP ArchiveLink.

Customers with the required authorization can access the certificate for a batch on the Internet.

Quality Notifications for Customer Complaints

You can use quality notifications to process and document customer complaints, that arise as a result of poor quality products.

The products have been delivered to the customer. The customer complains about the goods (without returning them) or returns them without prior notice.

If you have already created a return for sales order processing, the system automatically creates an inspection lot for the inspection that subsequently takes place.

Alternatively, the customer sends a collective shipment together with the corresponding inspection reports.

Quality Management in Sales and Distribution

You then create a quality notification in which you can enter the object concerned, the details of the problem, the departments responsible for the notification in your company, as well as the corrective tasks and activities to be performed.

If the substandard product in the problem is a material or product handled in batches, you can call up a batch where-used list to identify, for example, the batches of raw material or semi-finished products that make up the affected batch, or the batches of semi-finished or finished products that contain the affected batch.

Once you have confirmed all the required tasks that have been performed, you complete the quality notification.

Often, you only ascertain whether a task was successful after the quality notification has been completed. In such cases, you can document the success of a task retrospectively in the quality notification.

It is advisable to use quality notifications for customer complaints if:

- Several people are required to process a problem
- You want to improve your products and processes on an ongoing basis, by systematically analyzing problems

The data collected and documented in the quality notification is available for more detailed analysis in the **QM Information System**. In this way, you build a knowledge base that helps you to improve the quality of your products and processes on an ongoing basis.

Test Equipment Management

Purpose

This scenario describes how to enter measurement readings and how to monitor the test and measurement equipment you create as technical objects, in the areas of plant maintenance or customer service. The aim of the inspection is to determine whether your technical objects meet the required quality standards, or whether they need to be repaired, rejected or replaced. You can:

- Inspect the technical objects according to predefined requirements
- Document the inspection results for each technical object
- Value the technical objects

Prerequisites

To manage test equipment and enter extended measurement readings, you must have created technical objects. If you want to automatically update the measurement documents in plant maintenance or customer service as a follow-up action to the usage decision you must:

- Assign a measuring point or counter to the technical object
- Create master inspection characteristics in QM
- Have created a maintenance task list that contains inspection characteristics

In the scenario *Test Equipment Management*, you can combine business functions from the *Quality Management* (QM) component with functions from the *Plant Maintenance* (PM) component or the *Customer Service* (CS) component.

Component	Functions
Quality Management (QM)	Performing and documenting quality inspections on test and measuring equipment
Plant Maintenance (PM)	Managing test equipment; maintenance planning; Scheduling maintenance operations and recording costs
Customer Service (CS)	Managing test equipment; maintenance planning; Scheduling maintenance operations and recording costs

Process Flow

Preventive Maintenance Plan

- You create a preventive maintenance strategy.
If you do not define a strategy, you can only use [multiple counter plans or single cycle plans](#) [Page 116].
- You create a preventive maintenance plan. The preventive maintenance strategy forms the basis of the preventive maintenance plan.
- You create maintenance items, in which the maintenance or service objects to be maintained and their corresponding maintenance task lists are assigned. The maintenance tasks that are

Test Equipment Management

to be completed by a due date are determined by the maintenance task list that is assigned to the maintenance item. The system automatically creates any maintenance or service orders that are required.

Inspection Lot Creation

There are the following ways to create an inspection lot when entering measurement readings and monitoring technical objects:

- You schedule the preventive maintenance plan. You can do this:
 - Manually
 - According to the preventive maintenance strategy
 - According to the counter reading
 - Based on the due date
- When the maintenance call is scheduled, the SAP System automatically creates a maintenance or service order and an inspection lot.
- Alternatively, you can release a maintenance call manually. This also causes the system to create a maintenance or service order and an inspection lot.

Maintenance or Service Order

1. You process an order if you:

- Record costs
- Schedule
- Monitor capacities

The order causes a task to be performed on an object by a due date.

2. If required, you plan the necessary capacity requirements for the work center where an operation is to take place.
3. When all the operations have been recorded, you release the order. Once this order is released, the SAP System automatically creates an inspection lot relating to the technical object.

Quality Inspection for an Order

When the inspection lot is created, the system provides the required shop papers for the quality inspection.

1. You inspect the technical object and record results for the measurements taken. The results are either directly recorded, or copied into the system from external measuring equipment using the QM interface.
2. You can document any defects in the results recording function for the technical object. If you want to use the R/3 System to manage a defect you have identified, together with the corrective action for this defect, the system can automatically create a maintenance or service notification.
3. If all the inspection characteristics have been inspected, the system values the inspection object or technical object. The object can be valued automatically or manually. As a result, data for an inspection report is available.

Test Equipment Management

4. You make the usage decision for the technical object and decide whether the technical object is to be:
 - Used again
 - Repaired
 - Rejected
5. You can confirm any costs incurred when results were recorded or when the usage decision was made in the maintenance or service order.

You can trigger the follow-up actions listed below, depending on the outcome of the inspection:

- Redefining the time period between orders
- Altering the way the test equipment is used
- Transferring the inspection results to a technical object

You close the order.

Result

After the inspection is completed, if no defects were found for your technical objects by the quality inspection, you have test equipment that complies with the quality standards.

If defects were found, you can decide whether the technical objects that no longer comply with the quality standard have to be rejected, repaired or replaced.

If the system automatically created a maintenance or service notification at defects recording, use a damage-related notification to create and process an additional order.

Environment, Health and Safety

Definition

SAP EH&S (Environment, Health & Safety) provides important functions necessary for the tasks involved in company safety, health and environmental protection. Integrated functions from the EH&S areas can be used in all parts of the supply chain of a manufacturing company, from sales, through production planning, human resources, materials management, production, plant maintenance, and distribution, to the transport of the finished goods. SAP EH&S covers concepts and functions for the areas *Product Safety*, *Dangerous Goods Management*, *Industrial Hygiene and Safety*, and *Occupational Health*.

Use

Product Safety

The *Product Safety* area covers tasks involved in managing product safety. This includes creating and managing data required for substances and products, managing multilingual texts as phrases, generating and dispatching prescribed documents, and integrating these processes into the procedures that are in operation in your enterprise. The eight components described below have been designed so that they can be used not just directly as product safety functions, but also as an infrastructure for other SAP EH&S areas and as new procedures available in the general R/3 System.

- **Substance management**
Substance management forms the basis for all other SAP EH&S functions and provides the infrastructure for further applications in the R/3 System. Using substance management, you can enter and identify all kinds of substances (pure substances, preparations, mixtures, polymers, and so on) and describe them using properties. The substance properties can be changed both quickly and flexibly. You can also extend them and arrange them into properties trees that the user can define. Compositions that are made up of preparations can be defined and maintained as required. Attributes in the form of a text are supported by *phrase management*. Authorization profiles that are delivered with the standard system allow you to make small differences in the access rights of different user groups.
- **Phrase management**
Phrase management supports effective handling of texts in standardized modules in several languages. Phrases are managed in phrase libraries and grouped together in phrase groups. You can use phrase sets to assign phrases to the individual characteristics of substance properties. You can manage several phrase libraries. One of these is chosen as the active library in which you maintain data. Like substances, phrases use engineering change management.
- **Substance information system**
You can use the substance information system to perform complex drilldown reporting for substance properties. You can display the results in lists (output methods) that you can define yourself. You can also display multilevel substance compositions. You can use the properties tree to search for properties. A number of substances can be output per report. A Microsoft Excel interface enables you to prepare and process the data for each of the substances found.

- **Report generation**
You can use report generation to create any number of multilingual reports that can contain data from the substance database, from other R/3 components, and also from graphical symbols. Text modules can be integrated using phrase management.
- **Report management**
Report management supports the management and release of reports, for example, material safety data sheets and labels. Using status management, you can set up a controlled release process according to your own individual needs. By adding data from an actual substance, a report is generated from the report template that is created for a certain language and jurisdiction. This report is then available in R/3 document management for all R/3 users in a company. By transferring current data (such as material number, company name and logo) this report is transferred to the final report to be dispatched. The entire report request can be triggered manually or automatically. Changes to substances or phrases can be managed using a worklist.
- **Report shipping**
Report shipping is used for shipping finished reports, taking into account the relevant valid legal regulations. In addition, you can use report management to trigger the printing of reports at a later point in time. As well as the automatic triggering from within SAP R/3 SD Shipping, you can create a shipping order for reports manually. Bundling the substance reports according to certain criteria (such as envelope used, e-mail size or recipient) is also possible. Subsequent shipping of reports is carried out automatically using a date-controlled check routine. Reports can also be subsequently shipped automatically if the report has changed because relevant changes were made to substances or phrases. Reports that were created as inbound documents can also be shipped.
- **Report information system**
You can use the report information system to display all reports for a substance in the form of a report tree. The current (released) version of a report is highlighted in the report display. Historical versions of a report can also be displayed. The report information system can also be started from a material for which reports are to be displayed. This function can also be used from within documents from R/3 Shipping.
- **Data exchange**
You can exchange (import and export) data for substances, phrases, sources, properties trees, report templates, SAP EH&S reports, and reports from other systems. This means that you can exchange data with other (non-R/3) systems (and also exchange individual items of data if changes are made to them). You can import phrases specifically for individual languages or phrase groups. A defined interface is available for non-SAP EH&S documents that also completely integrates inbound documents into report management. In this way, the prerequisites are fulfilled for replacing old applications or structuring distributed system scenarios, since EH&S provides the basis for both structured substance data and complete substance reports.

Dangerous Goods Management

Dangerous goods are substances and products that could pose a risk to public safety when being transported because of their properties. The transportation of your goods is therefore subject to a great number of national and international regulations. *Dangerous Goods Management* enables the correct handling of these regulations using the following three components:

- **Dangerous goods master data**
For dangerous goods master data, SAP EH&S uses both an enhancement of the material

Environment, Health and Safety

master and the varied functions available in the substance database in substance management. Together they allow efficient and redundancy-free maintenance of dangerous goods data, suited in the best possible way to the dangerous goods portfolio and data scenario of your company.

As an enhancement to the material master that is specific to dangerous goods, the *dangerous goods master* provides all the data for dangerous goods required for sales and distribution logistics. The data can be maintained directly or supplied automatically using high-performance *filling*. This filling function uses the *legal data* provided within the substance database, the dangerous goods rating that corresponds with dangerous goods laws in the *dangerous goods classification*, and the relevant substance data. In addition, filling enables convenient usage of external sources, such as old applications.

You can create and manage the *legal data* for the individual dangerous goods regulations, such as IATA-DGR, IMDG code, ADR, ADN, RID, or 49 CFR in listed substances in the substance database. If required, the listed substance can be filled by external sources, meaning, for example, that the contents of qualified data providers can be used.

In *dangerous goods classification* SAP EH&S provides a new master data object in the substance database, allowing the creation of a dangerous goods rating for each dangerous goods regulation by simply linking to the legal data. Referencing in the substance database thus enables the system to pass this rating on to all the affected substances and therefore automatically to all the materials assigned.

- **Dangerous goods checks**

In SAP EH&S, dangerous goods checks have been integrated into the sales process. The documents in delivery and transport (and also customer inquiry, quotation, and order in SAP EH&S Release 2.5 A and higher) are the starting point for the check procedure. Checks can be started automatically or manually. The information from the route stages you maintained is automatically used for the dangerous goods checks. You can use the dangerous goods checks processor to specify your own check schemata with your own configuration for selecting check modules, their sequence, and the processing of the results. The check results are contained in a detailed check log. You can lock documents with critical check results, therefore preventing deliveries of goods that do not conform to laws and regulations.

- **Dangerous goods documents**

SAP EH&S provides easy-to-handle solutions for generating dangerous goods documents that are prescribed by law, and for outputting the necessary dangerous goods data on other documents required, either on paper, or as an electronic message (EDI).

Both functions use features from the R/3 component SD (Sales & Distribution). The delivery document and packing list are extended to include dangerous goods data. Specific dangerous goods documents are managed via output control from R/3 SD and printed and dispatched automatically.

You can use a language control to automatically output the necessary texts in the correct languages that correspond with the route stages and the appropriate regulations.

Industrial Hygiene and Safety

SAP EH&S *Industrial Hygiene and Safety* supports the employer when providing protection for his or her employees' health and safety. The SAP EH&S Industrial Hygiene and Safety components *work area*, *exposure log*, *incident/accident management*, *risk assessment and measurement management*, *standard operating procedure*, *health and safety briefing*, and *site inspection* are the basic modules that provide effective company industrial hygiene and safety management. Integration into the SAP R/3 System means that data consistency is automatically guaranteed between business processes, and there is no longer redundant maintenance of data. Data and documents are always kept up-to-date. SAP EH&S Industrial Hygiene and Safety can be used in all companies and industry sectors worldwide.

- **Work area**
The work area is the fundamental organizational unit in industrial hygiene and safety and a central element for many processes. The company organization can be portrayed individually using the header data for the work area (short description, plant, work area type, location, higher-level work area). An exact history of individual work areas can be traced using the additional administration data. The technical organization of the work area can be portrayed using the industrial hygiene and safety data, which includes safety equipment and devices/safety measures, personal protective equipment and emergency numbers, for example. All agents/hazards that are present in the work area and their assessment can be entered specifically in the exposure profile. You can create references to existing R/3 objects (functional location, workplace, location) for the work area.
- **Exposure log**
By setting up an exposure log, you can systematically record all agents that are present in your company. The exposure log can therefore combine, for example, a hazardous substance log, a noise log, and a climate log. You can enter the corresponding quantities of each agent as well as information regarding the measurements made (measurement duration, measurement description, executor, for example) in the exposure log for the exposure profile of the individual work areas. Maintenance and evaluation of data is made easier by the fact that you can choose either an agent-related view or a work area-related view.
- **Incident/accident management**
In the SAP EH&S Industrial Hygiene and Safety component incident/accident management you can enter not only accidents that involve injury to persons, but also events that do not involve injury and any 'near' accidents, known as incidents. This provides all the relevant data for the accident statistics and extensive accident analysis. In addition to accident data that is not related to persons such as accident location, accident time data, damage to equipment and machines, persons involved and their roles, the system can also portray person-related data such as injuries, further treatment, time data, and cause of accident. Accident reports that are required by law in Germany, for example, can be generated directly using the data entered. Any other forms that the user requires can be created easily using the WWI Layouting Tool. Access to HR master data or business partner administration makes entering accident data much simpler and easier. In the future there will be a link to corrective action tracking in industrial hygiene and safety, allowing the monitoring and documentation of technical, organizational and/or personal corrective actions.
- **Standard operating procedure**
Standard operating procedures are an important area of industrial hygiene and safety with regard to dealing with hazardous substances, working with machines and installations, or performing tasks that are potentially dangerous. SAP EH&S supports the generation of standard operating procedures for agents and work areas. The agent-specific data for the standard operating procedures is taken from the SAP EH&S substance database. Data specific to the work area is taken from industrial hygiene and safety data in the work area. Standard operating procedures can be created in the languages maintained in phrase management. Standard operating procedures that are required by law in Germany according to the German Hazardous Substances Directive (Gefahrstoffverordnung), for example, can be generated directly using the data entered. Any other forms that the user requires can be generated easily using the WWI Layouting Tool.

Environment, Health and Safety**Occupational Health**

The purpose of occupational health is to monitor the health and well-being of employees. This is made possible using health surveillance protocols that are performed regularly and that are required by law in most countries.

Another task involved in occupational health is to document all first aid and treatment that is given in a company.

Both of these tasks are associated with a great amount of administration and many legal requirements. The SAP EH&S component *Occupational Health* offers you comprehensive support in this area.

SAP EH&S *Occupational Health* contains the following components:

- Master data
- Assignment and selection of the necessary health surveillance protocol
- Time scheduling
- Invitations
- Questionnaire (creation, entering of data and evaluation)
- Medical service
- Statistics and documentation
- Injury/illness log

The integration with the SAP EH&S components *Industrial Hygiene and Safety* and *Product Safety*, as well as with SAP R/3 *Human Resources Management* (HR) and SAP Organizational Management greatly reduces the amount of time needed to manage and maintain data, thus helping the company to save time and money.

By using the SAP EH&S component *Occupational Health*, a company can comply with legal requirements easily and at the same time optimize its business processes.

Master Data Management for Product Safety

Purpose

This scenario describes the recording of substances using different identifiers as well as assigning values to these substance using characteristics. These substance characteristics describe substances according to chemical, physical, and handling-specific criteria. For the most part, they are available as text data in the form of phrases in phrase libraries. Substance data is used to generate substance reports in the form of material safety data sheets that provide customers with the information on handling the substances delivered according to legal regulations. To trigger the shipping of material safety data sheets to customers within the framework of delivery processing, the substances must have been previously assigned to the materials as bearers of logistics data.

The following R/3 components are integrated with master data management for product safety:

R/3 Component	Function
Materials Management (MM)	Processing materials
Product Safety (EHS-SAF)	Processing phrases, substances, substance reports
Shipping (SD)	Processing deliveries
Sales (SD)	Processing customer orders

Process Flow

Material Master

Master data processing for product safety entails material master processing in that you maintain the environmentally-relevant indicator in a material master. This enables material safety data sheet shipping to be triggered in delivery processing.

Product Safety

1. You record phrases and assign them to phrase sets. In this way, you can use phrase-related characteristics for assigning values to substances.
2. You use various identifiers to describe the substances, assign materials to the substances, assign values to substances, describe their composition, and specify usages for the substance data recorded.
3. As a basis for processing substance reports, you create substance report templates. You define substance report generation variants that control the usage for the substance reports to be created. Substance report generation variants link substance report templates with the group of people authorized to view substance reports and with the validity areas defined by a common base of legal regulations for handling dangerous substances.
4. You can generate report bodies for a substance, release them and trigger manual substance report shipping. Or you can generate substance reports for a substance from report templates for checking purposes.

Master Data Management for Product Safety**Result**

Material safety data sheet shipping can be carried out from Sales and Distribution, or it can be triggered manually from substance management. However, the generation, management and shipping of substance reports, in particular of material safety data sheets, is triggered automatically within delivery and customer order processing. This means that industrial users of dangerous chemical products are provided with material safety data sheets before, during, and after they receive the delivery itself from the vendor, and can therefore be alerted to the chemical properties, risks, and safety measures for particular substances.

Master Data Management for Dang. Goods without Substance Database

Purpose

This scenario describes the recording and maintenance of dangerous-goods specific data for a material master where the data is required to carry out dangerous goods checks in delivery and shipment processing and generate dangerous goods papers in shipping.

The characteristics of master data management for dangerous goods without the substance database are:

The dangerous goods legal data are maintained directly in the dangerous goods master.

The following R/3 components are integrated with master data management for dangerous goods without the substance database:

R/3 Component	Function
Materials Management (MM)	Processing materials
Dangerous Goods Management (EHS-DGP)	Processing the dangerous goods master
Shipping (SD)	Processing deliveries
Transportation (SD)	Processing shipments

Process Flow

1. Material Master

Master data management for dangerous goods without the substance database begins with processing the material master. You assign a dangerous goods indicator profile for a material master to be able to control the subsequent functions within dangerous goods management.

2. Dangerous Goods

- When you create a dangerous goods master, as well as entering a material, you must also enter the dangerous goods regulation that is the deciding parameter for carrying out dangerous goods checks and generating dangerous goods papers. You maintain dangerous goods legal data directly in the dangerous goods master.
- From the source system, you can trigger the distribution of dangerous goods data in other clients or R/3 Systems.

Result

In delivery and shipment processing, you can use data to carry out dangerous goods checks to identify deliveries and shipments for dangerous-goods relevant materials, whilst taking the appropriate regulations into account. You can enhance the check methods regardless of the release you are using in order to adapt the process flow of checks and system reactions to suit your requirements. If a delivery contains dangerous goods, the corresponding EDIs are provided with the necessary dangerous goods data.

Master Data Management for Dang. Goods without Substance Database

Master Data Management for Dang. Goods with Substance Database

Purpose

This scenario describes the recording and maintenance of dangerous goods legal data for a material. These data are required for carrying out dangerous goods checks in delivery and shipment processing, as well as for generating dangerous goods papers in shipping.

The characteristics of master data management for dangerous goods with the substance database are:

- Dangerous goods legal data are maintained in the R/3 substance database as UN listed substances, and are assigned to materials using dangerous goods classification directly or indirectly via real substances.
- Dangerous goods data recorded in the substance database are transferred to the dangerous goods master via an interface, and distributed to the dangerous goods masters of other R/3 Systems.

The following R/3 components are integrated with master data management for dangerous goods with the substance database:

R/3 Component	Function
Materials Management (MM)	Processing materials
Product Safety (EHS-SAF)	Processing substances
Dangerous Goods Management (EHS-DGP)	Processing, filling, distributing the dangerous goods master
Shipping (SD)	Processing deliveries
Transportation (SD)	Processing shipments

Process Flow

- 1. Material Master**
Master data management for dangerous goods with the substance database begins with processing the material master. You assign a dangerous goods indicator profile for a material master to be able to control the subsequent functions within dangerous goods management.
- 2. Product Safety**
In the substance database, you store dangerous goods legal data as UN listed substances. You assign dangerous goods legal data to materials using dangerous goods classification. Using the same technical methods, you maintain this legal data as substances in the substance database.
- 3. Dangerous Goods**
 - By triggering filling for a dangerous goods master, you classify a material and assign the corresponding legal data (according to the dangerous goods regulation) to the UN number of the material.
 - From the source system, you can trigger the distribution of dangerous goods data in other clients or R/3 Systems.

Master Data Management for Dang. Goods with Substance Database**Result**

In delivery and shipment processing, you can use data to carry out dangerous goods checks in order to identify deliveries and shipments for dangerous-goods relevant materials, whilst taking the appropriate regulations into account. You can enhance the check methods regardless of the release you are using in order to adapt the process flow of checks and system reactions to suit your requirements. If a delivery contains dangerous goods, the corresponding EDIs are provided with the necessary dangerous goods data.

Industrial Hygiene and Safety

Purpose

The *Industrial Hygiene and Safety* component supports tasks such as:

- Organization of industrial hygiene and safety within the company, based on freely-definable work areas
- Definition and management of Industrial Hygiene and Safety corrective actions
- Documentation of the exposure situation in the various work areas by means of an exposure profile
- Creation of an exposure log, in which the amount of exposure that occurs can be recorded and linked to the relevant work areas
- Access to an agent information system that finds and displays entries in the exposure log
- Entry and management of incidents and accidents with the aid of an incident/accident log
- Creation and shipping of reports such as standard operating procedures (SOPs) and accident reports

These processes can be divided up as follows:

Work Area (Work Area Processing)

This component – with the aid of the work area object – enables you to structure your company in a flexible manner, and also manage your industrial hygiene and safety data by work area.

Work areas can be defined from different viewpoints. They can, for example, be defined in terms of processes, installations, employee groups, or tasks. The relationship between the work areas themselves can either be hierarchical or non-hierarchical in character. You link the work area to your higher-level enterprise structure by assigning the work area to a plant.

You can manage the following data:

- Industrial hygiene and safety data (for example, emergency plan, emergency number)
- Agent data
If you wish to document the exposure situation, you can store all the agents found in one work area in an exposure profile, and make a *qualitative* assessment of the exposure in the work area. You store *quantitative* exposure data and details of the measurements and values determined in the exposure log.
- Integration
References to the storage location, functional location, and workplace can be created.

Agent

- **Agent processing**
You must create agents in the R/3 System before you can process them. You assign each agent to an agent category.
- **Exposure log processing**
You can use this component to systematically enter all the *agents* that are present in your company, as well as store agent amounts and enter data on the methods used to measure

Industrial Hygiene and Safety

these amounts.

The exposure log supports the company industrial hygiene and safety officer by determining which work areas have the same agents present (for example, work areas with exposure to carcinogenic substances).

Entries in the exposure log can be subjected to a multi-level release authorization process (status switching).

Incidents and Accidents (Incident/Accident Log Processing)

This component enables you to enter and assess *events*, as well as report them to the responsible institutions or authorities if necessary.

In the Federal Republic of Germany, the following laws apply:

According to § 6 Para. 2 of the Labor Protection Law (Arbeitsschutzgesetz), every employer must record any accidents in his company that result in the death of an employee, or render an employee completely or partially incapable of work for a period of more than 3 days.

Furthermore, § 193 Para. 1 SGB VII (Code of Social Law, Part VII), states that employers are also obligated to report accidents that are notifiable according to the criteria given above to the responsible work-related injury insurer, in other words, to the workers' compensation associations. A copy of the accident report is sent to the trade supervisory authorities and to other organizations as necessary.

The *Incident/Accident Management* component gives you the support you need in order to comply with such statutory requirements by providing the following functions:

- Entry and editing of all relevant event data in an *incident/accident log*
Besides entering notifiable accidents, you have the option of recording accidents that result in an employee being absent from work for less than 3 days, or not being absent at all. You can also enter any 'near-accidents.'
- Automatic transfer of data from the injury/illness log to the incident/accident log if required
- Creating and shipping of the accident report required by law for notifiable accidents in the R/3 System
- Authorization management
Incident/accident log entries and accident reports can only be displayed and edited by employees who have the appropriate authorization. The authorization check takes place in *Incident/Accident Management*, using the *incident/accident log entry category* (authorization object C_EHSI_IAL).

Prerequisites

As part of Industrial Hygiene and Safety, you use the following integrated R/3 components:

R/3 Component	Functions
Product Safety (EH&S)	Agent processing; Storing phrase sets; Entering data in additional languages (for example, phrases, work area description); Creating, editing, and shipping reports
Occupational Health (EH&S)	Transferring data from the <i>injury/illness log</i> to the <i>incident/accident log</i>

Industrial Hygiene and Safety

Plant Maintenance (PM) and Materials Management (MM)	Integration of data in the <i>work area</i> (for example, workplaces, functional locations)
Personnel Administration (PA)	Creation of HR master data records and business partners

Process Flow

Work Area

1. In the *Edit Work Area: Initial Screen*, you have the following options:
 - You can enter various search criteria to start a work area search. If the work area that you are trying to find is not available in the R/3 System, you can create the work area. The *Manage User Exits* activity in Customizing for *Industrial Hygiene and Safety* enables you to specify enhancements to the search function, such as a search using agents.
 - You can also create a work area in the initial screen itself.
2. The result of the search is displayed in a hit list. This list is the starting point for further editing or for creating work areas. When you create work areas, it is always the header data that you edit first, no matter whether you are creating the work area from the hit list or in the initial screen.
3. For example, you can call the following functions from the hit list:
 - Status switch
 - Work area structure (hierarchy display of the work area)
 - Data integration
 - Industrial Hygiene and Safety data
 - Exposure profile
 - Accident locations
 - Report information system

Agent Processing

- To create agents, you switch to substance management in the EH&S *Product Safety* component.
- Make the necessary entries. These could be any of the following:
 - The name of the agent (in the input field: *Substance*)
 - The agent category (in the input field: *Substance category*)
You can choose only agent categories in the substance category input field.
 - Authorization group
 - Identifiers
 - Reference substances

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The substance category and the agent category are controlled separately by means of the *Agent category* indicator. You set this indicator when you specify the agent categories in Customizing for *Industrial Hygiene and Safety*.

Exposure Log Processing

1. When you access the R/3 *Industrial Hygiene and Safety* component, the following options are available:
 - You can enter various search criteria, and search for an entry in the exposure log. If the entry that you are trying to find does not exist in the R/3 System, you can create it. The *Manage User Exits* activity in Customizing for *Industrial Hygiene and Safety* enables you to specify enhancements to the search function.
 - You can also create an exposure log entry in the initial screen itself.
2. The result of the search is displayed in a hit list. This list is the starting point for editing or creating exposure log entries.
3. Regardless of whether you create an exposure log entry from the hit list or from the initial screen, the first thing you do is enter the header data for the entry.
4. For example, you can call the following functions from the hit list:
 - Header data
 - Amounts
 - Status switch

Incident/Accident Log Processing

1. When you access the R/3 *Industrial Hygiene and Safety* component, the following options are available:
 - You can enter various search criteria and search for an entry in the incident/accident log. If the entry that you are trying to find does not exist in the R/3 System, you can create it. The *Manage User Exits* activity in Customizing for *Industrial Hygiene and Safety* enables you to specify enhancements to the search function.
 - You can also create an incident/accident log entry in the initial screen itself.
2. The result of the search is displayed in a *hit list*. This list is the starting point for editing or creating incident/accident log entries.
3. Regardless of whether you create an incident/accident log entry from the hit list or from the initial screen, the first thing you do is enter the header data for the entry.
4. The following data can be entered and edited for an incident or accident:
 - Header data
 - Event location (plant, accident location, work area)
 - Persons involved (injuries, treatment, time data)
 - Damage (functional location, equipment, machine)
 - Investigation results

- Additional information

5. If an accident report is required, you can create it and print it out here.

Result

Work Area

You have structured your enterprise into work areas. This provides you with an overview of all the work areas in your enterprise.

Agent Processing

The agent is stored in the *Product Safety* substance database and can be edited in the *Exposure Log*.

Exposure Log Processing

Processing and maintaining the exposure log provides you with a comprehensive overview of the agents that are to be found in the company.

Incident/Accident Log Processing

This provides you with a comprehensive overview of all incidents and accidents that occurred in the enterprise and can initiate further corrective actions to prevent new accidents or to correct any damage that occurred. You can also create accident statistics.

Occupational Health

Occupational Health

Purpose

The R/3 application component *Occupational Health* supports you both with the general occupational health care and support of your employees, but also with the planning and execution of special health surveillance protocols in your enterprise.

Special surveillance is required for those persons who could be subjected to specific chemical, physical, or biological effects at their workplace or who perform activities that pose a health hazard. Furthermore, health surveillance protocols can include vaccinations or random drug tests (USA).

Occupational Health comprises two processes with the following components:

Health Surveillance Protocols

- **Basic data**
You use this component to specify the data that you require for managing occupational health protocols in your enterprise, such as defining and assigning agents, reference values, and protocols.
With the *question catalog* and *questionnaire* functions you can create occupational health questionnaires in the R/3 System. The data required to create questionnaires is created and managed in the question catalog. Questionnaires can be replied to online in the system, or be printed out and scanned into the system again once they have been answered and filled out.
- **Scheduling**
With this component you can determine which persons need to be registered for health surveillance protocols, and create a medical service for each person.
- **Medical service**
Using this component you can enter and manage all examination data required such as diagnoses, examination results, work restrictions for health reasons, and so on. Occupational health questionnaires are answered in the medical service.

Injury/Illness Log

With this component you can enter and manage in the R/3 System all occurrences of aid given in your enterprise, such as first aid following accidents or minor injuries, treatment of old injuries, or treatment of persons feeling unwell.

Prerequisites

As part of Occupational Health, you use the following integrated R/3 components:

R/3 Component	Function
Industrial Hygiene and Safety (EH&S)	Incident/accident management
Personnel Administration (PA)	Master data management
Organizational Management (OM)	Assignment of agents and exposure groups

Process Flow

Health Surveillance Protocol

1. The process in Occupational Health starts with you entering and maintaining the basic data.
The data includes:
 - Agent
 - Exposure group
 - Examination
 - Health surveillance protocol
 - Question catalog
 - Questionnaire

The basic data is a necessary prerequisite for you to be able to use the Occupational Health component.
2. In the next step, you assign agents to persons and exposure groups.
3. On the basis of the basic data and the assignment of agents to persons/exposure groups, you determine persons for a medical service and assign appointments with the aid of the system.
4. Once you have opened a medical service for a person, you can enter test results, examinations, diagnoses, and health surveillance protocols in it, as well as the answers from the questionnaire. You can also set the next appointment and enter any possible actions that may result from a medical service.

Injury/Illness Log

1. When you access the injury/illness log, you have the following possibilities:
You can enter various search criteria and start a search for an entry in the injury/illness log. If the log entry that you are looking for does not exist in the R/3 System, you can create the entry. You can create an injury/illness log entry immediately.
2. The search result appears in a *hit list*.
From the hit list, you can continue to edit the injury/illness log entries, for example, by switching an entry to the next status. It is also possible to create an injury/illness log entry from the hit list.
3. You can edit injury/illness log data from the hit list.
In the injury/illness log data, you can display the data transfer status, and change it if necessary, depending on the category of the injury/illness log entry.

Result

Health Surveillance Protocol

You have documented that you have fulfilled your duty of care as an employer. You can make further use of the data entered for statistics and epidemiological studies.

Occupational Health**Injury/Illness Log**

Depending on the injury/illness log entry category, entries in the injury/illness log are transferred to the incident/accident log. As the incident/accident log is linked to reporting in the R/3 *Product Safety* component, you can print data from the injury/illness log on reports.

Project Management

Definition

Project management covers all the functions used to organize and execute a project as it is processed. The *Project Management* enterprise area comprises the following phases:

- [Initiating the project \[Page 156\]](#)
- [Project planning \[Page 157\]](#)
- [Project execution \[Page 161\]](#)
- Project [completion \[Page 165\]](#)

Use

Projects are tasks with the following characteristics:

- They are usually complex and unique, and involve a high degree of risk.
- They have exact objectives, which are agreed between the sold-to party and the contractor.
- They are of limited duration, and are cost and capacity intensive.
- They are subject to certain quality requirements.
- They have mainly strategic importance for the company that implements them.

Project Management distinguishes between different types of projects, such as customer projects, overhead cost projects, and capital investment projects.

Capital investment projects are described in detail in the documentation on processing complex capital investment measures in the *Asset Construction* enterprise area.

Both large scale projects, such as the construction of a subway system, and smaller ones, such as organizing a trade fair, require detailed planning of the various activities involved. The person responsible for the project must ensure that the project is executed competently, on time, and within budget. He or she is responsible for providing the resources and funds needed to achieve this.

Projects are usually included in the operational structure of a company. To control the tasks carried out as part of project execution, you require an organizational form that is specific to the project and covers all the departments involved. To implement a project in its entirety, you must both describe the project objectives precisely and structure the project services to be carried out. A clear and unique project structure is a prerequisite for successful project planning, monitoring, and control.

As part of Collaborative Engineering and project management, you can use the Internet to send product structures, project structures, and documents relevant to the development project from the SAP system to selected participants. The participants send the objects, revised as necessary, or comments back to you. You then check them and adopt them, to the extent desired, in the SAP System.

Initiating Projects

Initiating Projects

Purpose

Initiation is a preliminary project phase. In this phase, the decision is taken on whether to carry out the project.

It uses both the Project System functions and the following functions from Sales and Distribution (SD):

- SD Inquiry processing
- SD quotation processing

Process Flow

Customer Inquiries and Quotations

You can use an inquiry to record a customer query, including the customer's basic requirements. You send exact and binding product information (such as prices and delivery dates) to the customer in the form of a **quotation**.

The Project System supports this work with its integrated capacity scheduling and cost and date planning. You can organize and structure production at the same time. When the quotation phase is finished, a complete project, with WBS elements and networks, may be in place in the R/3 System. You can use the project simulation functions to work through different quotation scenarios, postponing the decision on which one to use until you have actually received the order.

Initiating Projects Internally

It is also possible for projects to be initiated by means of internal processes. Internal project initiation involves preparing for and making the decision to approve the project.

Planning

Purpose

Good project planning is a prerequisite for project success. Keeping the costs within budget, keeping appointments, and fulfilling tasks all dependent largely on the amount and quality of planning done.

Project planning with the Project System is not a one-time process. Depending on the degree of detail available and the project phase you are in, you can add to your planning work at any time.

The planning phase involves integrated use of the Project System and of functions from the following modules:

- PP Production Planning and Control
- CO Internal Accounting
- FI External Accounting and Cash Management
- PDM Product Data Management
- MM Materials Management, Services

Process Flow

Structure

To implement a project in its entirety, the project objectives must be described exactly and the project services to be rendered must be structured. A clear and unique project structure is a prerequisite for successful project planning, monitoring, and control.

Depending on the project type and the main focus of project monitoring, you structure your project using a work breakdown structure (WBS) or network. Standard structures, such as standard WBSs or the standard network, enable you to standardize and reuse some of the structures and processes that have worked well in past projects.

Revenue Planning

Use this function to plan the revenues you expect to earn when carrying out the project. The following planning forms are available in the Project System:

- Manual revenue planning:
 - By WBS
 - By revenue element
- Automatic update of revenue plan values from the billing plan:
 - In the WBS element
 - In the sales order

Cost Planning

Use this function to plan the costs you expect to incur when carrying out the project. Cost planning has different objectives in the different project phases:

Planning

- At the design and rough-cut planning stage, cost planning acts as the basis for an initial cost estimate.
- At the approval stage, cost planning serves as a base for allocating the budget.
- During project execution, cost planning is the means of monitoring and controlling cost variances.

You can plan costs for your project in the SAP R/3 Project System, using the WBS and the network.

In networks, the most important factors are dates, personnel, and operating resources, not costs. Costs are planned automatically, based on an existing price/quantity structure. Use networks to plan costs if you are using complex project processing - that is, if dates and resources are relevant, as well as costs.

If cost planning and monitoring are the most important factors for you, as would be the case, for example, in capital investment projects or overhead cost projects, manual cost planning in the WBS elements is the correct planning tool to use. The WBS guarantees integration with Controlling and Financial Accounting.

Date Planning

You can plan dates as follows:

- **Manual WBS scheduling:** This is possible as soon as you have created WBS elements. In rough-cut planning, you can prescribe dates that are then binding on later planning. The rough plan can act as the starting point for more detailed planning. There are various functions for comparing, reconciling, or extrapolating dates.
- **Project scheduling:** You can schedule a project or a project subhierarchy, with all its assigned activities.
- **Overall network scheduling:** You use this procedure to schedule all networks that are linked by cross-network relationships.

Capacity Planning

Capacity planning is used to plan the capacities and resources used for project work carried out internally. It does not cover capacities procured from outside your company.

You stipulate this work and the work center provided for processing in internally processed network activities. The system determines the project capacity requirement in scheduling. You can compare this requirement with the capacity available in the work centers involved. Use capacity leveling to ensure the best possible use of suitable capacities. The most important resources in projects are the project personnel. With workforce planning, you can distribute work accurately by period from network activities to personnel, planning centers, or HR organizational units.

Planning Services and External Activities

You can create externally processed activities or external elements in your network - for example, if you commission an external design office to design a machine.

You can also plan services for externally processed activities and external elements.

Cash Flow Planning

As your project progress, expenditures and costs affecting project revenue are incurred - that is, payment inflows and outflows occur. You need to plan payments, so that you have some idea of

when they will happen during project processing. This is the only way to have sufficient funds in the right place at the right time.

Project Cash Management plans and monitors the payment flow, as viewed from the project. Project Cash Management differs in this respect from Cash Management and Cash Budget Management in Treasury (TR), which monitor the payment flow for your whole business.

You use manual payment planning, particularly in the early stages of planning, to plan revenues and expenditures in one or more WBS elements. Manual payment planning does not require detailed project structures.

Material Procurement Planning

Material procurement planning covers the following processes:

- **Assigning materials to activities:** By assigning material components to network activities, you stipulate the components and raw materials that must be reserved or ordered for a project, and trigger procurement using material requirements planning (MRP) or purchasing.
- **Project related material requirements planning:** The main task of material requirements planning is to ensure that materials are available - that is, to procure the required materials in the right quantity and at the right time. The process includes monitoring stocks and, especially, triggering the procurement process when required.

Planning Statistical Key Figures

You can enter statistical key figures to form key figures in reporting and to act as the basis for period-based allocations.

Periodic Allocations

You use periodic allocations to determine all the planned data you must consider in a period, and make project plan data available for enterprise planning.

Periodic assignment covers the following processes:

- **Planned results analysis:** Periodic valuation of the planned results for the projects
- **Planned overhead costing:** assignment of overhead, using planned overhead in the WBS element
- **Planned periodic reposting:** Correction postings in the project - for example, when planned costs fall in a different period because of date changes
- **Planned activity-based costing:** In activity-based costing, the system distributes overhead from business process or cost centers/activity types, according to what caused them.
- **Planned interest calculation:** Improves planning quality by including the costs of tied-up capital. The planned interest calculation enables you to achieve the best possible cost/revenue distribution in the project, particularly if it is capital-intensive.
- **Planned settlement:** You use planned settlement to assign planned costs to cost centers, business processes, or profitability segments to give you the overall view.

Budgeting

The budget is the approved cost framework for a project.

It differs from project cost planning in that it is binding. It is approved by management, to regulate how project costs develop over a given period.

The **original budget** is the first budget to be assigned.

Planning

Project Execution

Purpose

Many of the activities to be carried out are triggered from the project during project execution. Some activities in project execution can be performed outside the project organization/Project System - for example, when purchase orders are submitted and processed by the Purchasing department.

Commercial activities are assigned by means of appropriate account assignments to a WBS element or network activity.

In addition to the Project System, the following functions from other modules are used:

- SD Sales order processing, dispatch, billing
- PP Production Planning and Control
- MM Materials Management, Services
- CO Internal Accounting
- FI External Accounting and Cash Management
- PDM – Product Data Management

Process Flow

Sales Order Processing

Once the customer has sent in a purchase order, you can use the quotation already in place to generate a sales order. Any changes between the quotation and the order can be shown both in the sales order and the project.

Sales orders includes functions such as delivery and billing. The link to the project ensures that costs and revenues are updated correctly.

Budgeting

The budget is the approved cost framework for a project. It differs from project cost planning in that it is binding.

- **Budget updates:** Unforeseen events, additional work, inflation, and so on, may mean that you need to correct the original budget. You do this by means of budget updates. These take the form of:
 - Supplements
 - Returns
 - Transfers
- **Budget release:** To ensure that the available funds are not used earlier than planned, you can release the budget in stages. Budget releases are based on the current budget - that is, the original budget as amended by supplements, returns, or transfers.

Project Execution

Project Release

Releasing a project or subprojects enables you to enter actual postings for them. You base the decision to release the project on the results of the planning phase.

Rescheduling and Actual Date Entry

As the scope of the project or other basic scheduling factors may change, it is sometimes necessary to reschedule.

The best way to schedule a project efficiently is to compare the basic dates with the actual dates.

Time Recording

Confirmations document the state of processing in network activities and activity elements. You can use them to produce a forecast of how project execution is likely to progress further.

- **Activity assignment:** Internal process by which you can assign valuated activities from cost centers to the cost receivers, according to what caused them.
- **Confirmation from PDC and external systems:** You can enter data in external systems and transfer it to the R/3 System.
- **Activity confirmation:** You can use this function to enter confirmations directly in the Project System. A distinction is drawn between individual, collective, and summary confirmations.
- **Confirmation using timesheets:** The timesheet is a cross-component application of the R/3 System, which you can use to enter network confirmations relating to employees of your company and external personnel. You can then transfer the data to the Project System.

Down Payments

Down payments are used for short or medium-term financing. They are usually made available to vendors or producers without any interest being charged. In some industries, it is usual to make a down payments if, for example, producers of goods that take a long time to make are not in a position to bear all the costs of financing production themselves. Down payments are usually made before production starts or when it is partially complete.

Materials Procurement and Service Processing

- **Purchase requisition processing for projects:** You use this function to regulate when the system creates purchase requisitions for material components and externally processed activities, and when reservations become relevant to planning.
- **Purchase order processing:** Call from a purchasing organization to a vendor or plant to deliver a particular quantity of materials or render services at a particular time.
- **Goods receipt processing with reference:** You can use this component to post receipt of goods from an external vendor or from production. If the goods receipt is in connection with a purchase order, you reference that purchase order when entering the goods receipt.
- **Service entry:** If the vendor has supplied services rather than goods, you enter the services in a service entry sheet.
- **Delivery from projects:** You can use this component to create deliveries in the Project System and thereby deliver material components that are assigned to a project.
- **Goods issue processing:** You can use this component to post a goods withdrawal or issue, material usage, or the dispatch of goods to a customer (without SD dispatch).

Production Processing

As part of material requirements planning, you create planned orders to cover the requirements. Planned orders represent requests to procure or produce a material. Planned orders for materials to be produced internally are converted into production orders. The material components required for production appear as items in the planned order and are copied into the production order when the planned order is converted.

Statistical key figures

You can enter statistical key figures to form key figures in reporting and to act as the basis for period-based allocations.

Billing

You use billing to create a customer invoice for the goods and services supplied on the basis of a sales order.

- **Fixed price billing:** Billing is per sales order item at a fixed price and as of a fixed date.
- **Billing request processing and resource-related billing:** In resource-related billing, items are created in the billing request, on the basis of cost information. The billing request is used to created billing documents as of the relevant dates.

Period-End Closing

You carry out period-based commercial transactions as part of period-end closing. This ensures that all the data is determined for a period and is made available to Enterprise Controlling.

- **Periodic reposting:** Defective postings in the project are corrected.
- **Overhead rates:** The system calculates rates based on the quantities or in proportion to the unit costs. The rates are applied to materials, personnel, or machines.
- **Template assignment of overhead:** While the system distributes overhead at a flat rate, during template assignment, it distributes the overhead for business processes or cost centers/activity types.
- **Interest calculation:** Valuation of funds committed in the form of costs, revenues, and payments; used to optimize the project payment flow.
- **Actual price revaluation:** The system initially values activities or business processes used as part of project processing using the planned prices, because the actual prices are not determined until the period-end closing stage. You carry out the revaluation to determine the actual costs on the basis of the actual prices.
- **Results analysis:** Periodic valuation of the results for the projects
- **Settlement:** The system settles some or all of the costs incurred in the project to one or more receivers. The system automatically generates offset postings to credit the project.

Project Monitoring and Controlling

- **Forecast remaining work:** The system does this automatically when you save the confirmation. In the process, it calculates the actual work and the degree of processing.
- **Date forecast:** You can forecast dates for networks and work breakdown structures. You can copy these forecast dates into the basic dates.

Project Execution

- **Cost forecast:** You can use the cost forecast to adapt your planned costs to events. The system takes the planned and actual values as the basis for calculating the costs still expected between now and the end of the project. The result is called the "cost to complete".
- You use **progress analysis** to monitor and compare planned and actual project progress. The system values the activities using overall planned costs - that is, independently of the costs planned or posted by period.
- You use **milestone trend analysis** to obtain a simple, clear view of the date situation in a project and identify variances and trends promptly.

Analyzing Project Results

The Project System includes a flexible and comprehensive information system.

Completion

Purpose

In the completion phase of the project, you calculate the project result and settle the costs incurred during the project to receivers. The projects are technically completed and prepared for archiving.

SD billing is used, in addition to the Project System.

Process Flow

Preparing for Project Completion

The preparatory work includes creating a final invoice (billing document), checking project stock, checking that you have met your contractual obligations, final results analysis, and final settlement. In addition, you must update existing project templates and create new ones.

Project Completion

Project completion includes the following processes:

- Setting the status "Complete": Projects are not static objects, but have a life cycle of their own, starting when they are created and ending once they are closed.
- **Project completion documentation:** All the completion documents are assigned to the project.

Project Archiving

A project cannot be archived until you set the deletion indicator for it. Once you have set the deletion indicator, you can delete the project, archiving it at the same time if you want.

External Accounting

External Accounting

Definition

Accounting is an instrument for representing business transactions and relationships. It includes internal and external accounting, with each having different audiences.

The *external accounting* area of an enterprise includes:

- **Duty to account**
An enterprise needs accounting processes to meet the requirements of the law to account to stockholders, tax authorities, and creditors or lenders with respect to its assets, debts, and profit and loss.
- **Duty to inform**
An enterprise publishes information about the overall business of the enterprise, both voluntarily and to meet legal requirements.

Use

External accounting contains business processes for commercial record-keeping and for accounting to other parties, particularly to the owners of outside capital and the tax authorities. These processes include financial accounting and year-end closing.

The range of services provided by the SAP System include the processes of the following subareas of the *Financial Accounting* component:

[General Ledger Accounting](#)

[\[Page 168\]](#)[Accounts Payable \[Page 170\]](#)

[Accounts Receivable \[Page 172\]](#)

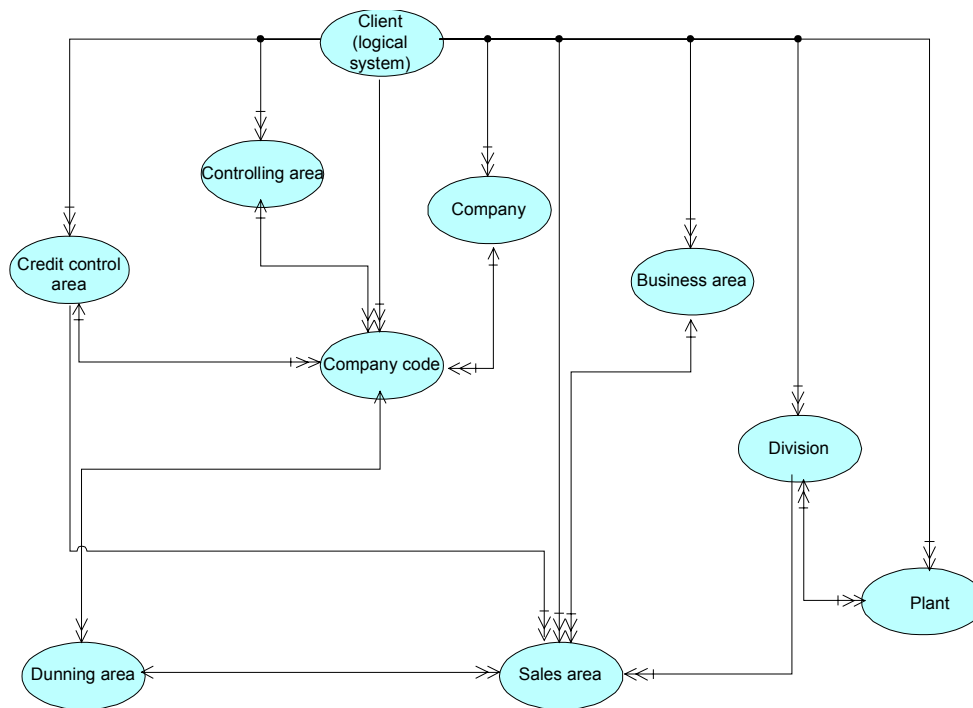
[Special Purpose Ledger \[Page 175\]](#)

[Valuation of Stocks for Balance Sheet Purposes \[Page 176\]](#)

[Consolidation \[Page 252\]](#)

[Funds Management \[Page 182\]](#)

External Accounting Organization Diagram



[Legend \[Ext.\]](#)

General Ledger Accounting

General Ledger Accounting

Purpose

The main task of G/L accounting is the overall presentation of Financial Accounting. The general ledger is the complete record of all business transactions, and thus represents the main and current element in the rendering of accounts.

This scenario describes the process by which you define the G/L accounts and plan your general ledger. It also describes the postings you make in the general ledger.

Prerequisites

- You have defined the company codes for your company and have assigned all charts of accounts to a company code.
- If you are using the [Consolidation \[Page 252\]](#) component, define a group chart of accounts for each chart of accounts. This ensures that the group account number is a required entry field in the chart of accounts.
- To be able to plan the general ledger, you must ensure that planning periods are open for each fiscal year.
- You must open posting periods in order to post to the G/L accounts. The posting keys and document types required are provided in the standard system, but you can configure them to meet your own requirements.

Process Flow

Master data

You can maintain the G/L accounts in different ways:

- You can create or change the G/L account first in the chart of accounts, and then in the company code
- You can create or change the G/L account in one step in both the chart of accounts and in the company code

When defining the accounts, you must always specify whether the account is a balance sheet or profit and loss account.

Planning

In the *General Ledger* (FI-GL) application component, you plan by company code. Within a company code, you can plan by accounts, or by a combination of account and business area. You enter the planned values using a financial statement version and the plan version number. You can plan at both financial statement item and account level.

Posting in the General Ledger

You can use the SAP System to make the following posting transactions in the General Ledger:

- Standard G/L account postings
- Transfer postings with clearing (offsetting)
- Document parking

- Manual foreign currency valuations
- Recurring entries

Account clearing

You can use this function manually or via the clearing program to clear debit and credit amounts that balance to zero (such as invoices and payments that you have already entered).

Interest calculation on accounts

You can calculate interest either on the account balance or on the arrears when calculating interest for a vendor account.

General Ledger account analysis

G/L account analysis includes:

- Line item analysis
- Balance analysis
- Evaluations

Closing operations

The SAP System supports the following closing operations for creating financial statements:

- Foreign currency valuation, balances
- Foreign currency valuation, open items
- Flat-rate value adjustment for payment default or credit risk
- Accrual/deferral postings
- Regrouping of receivables/payables
- GR/IR clearing account maintenance
- P&L adjustment
- Balance carried forward
- Periodic reports
- Creating financial statements

Result

- The values posted to the G/L accounts appear in the financial statements.
- If you implement the SAP *Cost and Revenue Controlling* application component, the values posted to P&L accounts are also posted to the primary cost types defined for these accounts.
- If you have carried out planning for the General Ledger, actual and plan values are shown on the balance sheet evaluation report for the financial statement version in question.

Accounts Payable

Accounts Payable

Purpose

Accounts payable accounting keeps and manages the account records of all vendors and is also an integral part of purchasing.

This scenario describes the processes that are used in handling business transactions with vendors.

Process Flow

Document parking

If you do not have all the necessary data to enter a complete document, you can begin processing a vendor invoice or credit memo by parking it. Once you receive all the information to complete the document, you can enter it in the parked document and then post the document.

Invoices and credit memos

If you receive a vendor document containing all the required information, you can directly enter and post a document in the system.

Down payments

You create a down payment request if you have made arrangements with your vendor to make down payments and plan to use the automatic payment program or the dunning program. However, you can also make a down payment manually, you do not necessarily require a down payment request. Once you have received the final invoice, you can clear the down payment with this. However, you also have the option of making a transfer posting of the down payment from the special G/L account to the payables account, without clearing it with an invoice.

Payment request

You create a payment request if you want the payment program to pay a parked invoice/credit memo or make a partial payment.

Payment

You can make manual payments in cases where you do not want to use the automatic payment program. In addition, you can:

- Process partial payments
- Create residual items
- Enter reason codes
- Charge off differences to special accounts
- Trigger correspondence via reason codes

Account clearing

You can use this function manually or via the clearing program to clear debit and credit amounts that balance to zero (such as invoices and payments that you have already entered).

Release for payment

You can use workflow functions to release invoices that are blocked for payment.

Account analysis

Vendor account analysis includes:

- Line item analysis
- Balance analysis
- Evaluations

Bill of exchange payable

You post your own bill of exchange payments to clear the payables owed to vendors.

Interest calculation

You can calculate interest either on the account balance or on the arrears when calculating interest for a vendor account.

Accounts Receivable

Accounts Receivable

Purpose

Accounts receivable accounting keeps and manages the account records of all customers and is also an integral part of sales controlling.

This scenario describes the processes that are used in handling business transactions with customers.

Process Flow

Invoices and credit memos

As long as you receive all necessary information in a customer invoice or credit memo, you can directly enter and post a document in the system.

Payments

You can use the system to make manual payments. You enter a bank line item and can clear the customer item, or generate a partial payment or a residual item with or without a reason code. You can also use the automatic payment program, which has been developed for payment transactions with domestic and international customers.

Down payments

You create down payment requests if you wish to use the automatic payment program and/or the dunning program. However, you can also create a down payment manually, without having to create a down payment request. When the final invoice has been issued, this can be used to clear the down payment either manually or automatically. You also have the option of making a transfer posting of the down payment from the special G/L account to the receivables account, without clearing it with an invoice.

Bills of exchange

You post bill of exchange payments to clear the receivables owed by customers. You post a bill of exchange usage and reverse the commitment once the bill of exchange matures.

Account clearing

You can use this function manually or via the clearing program to clear debit and credit amounts that balance to zero (such as invoices and payments that you have already entered).

Release for payment

You can use workflow functions to release customer credit memos for payment.

Document parking

The document parking function enables you to enter and store (park) incomplete documents in the SAP System without requiring extensive input checks. Parked documents can be completed, checked, and posted - where necessary, by another user - at a later date.

Parked documents do not update any data, such as the transaction figures, except in Cash Management.

Payment request

You create a payment request if you want the payment program to pay a parked invoice or a credit memo, or to make a partial payment.

Payment card settlement

The system also allows you to use payment cards to settle customer invoices.

Processing payment advice notes

You can enter payment advice notes, which are then used to automatically find and assign open items when the payment is made.

Account analysis

Customer account analysis includes:

- Credit management analysis (information for credit control)
- Line item analysis
- Balance analysis
- Evaluations (payment history, credit limit, days in arrears, net/cash discount overview)

Dunning program

Sometimes customers may fall behind in making payment to you. You can remind them of their outstanding debts by sending them payment reminders or dunning notices.

Interest calculation

You can calculate interest either on the account balance or on the arrears when calculating interest for a customer account.

Documentation not Available in Release 4.6C

Documentation not Available in Release 4.6C

Special Purpose Ledger Processing

Implementation Options

This scenario describes processes available to you when implementing the FI-SL system. You can use the FI-SL system to report on values from various applications on several different levels. The modules available in the FI-SL system allow you to:

- Collect information
- Combine information
- Create totals
- Modify totals
- Allocate and distribute actual and plan values

This information is transferred from other SAP applications and external systems to the FI-SL system.

Process

Planning

1. Enter planning data at any level of detail. In the FI-SL system, planning means the entry, distribution, and posting of planning data. Use the Report Writer to access the planning data you entered as well as to create financial budgets, prognoses, and other reports.

Actual Posting

2. Enter the data directly in FI-SL, go back to data entered in other SAP applications, or transfer data from external systems to your FI-SL system.

Periodic Processing

3. After you have entered planning and actual data in the system, you can perform the following periodic operations:
 - Allocation
 - Rollup
 - Currency translation
 - Balance carryforward
 - Data transfer
 - Archiving

Valuation of Stocks for Balance Sheet Purposes

Valuation of Stocks for Balance Sheet Purposes

Purpose

This scenario describes the processes used to value material stocks and change material prices.

Process Flow

1. Material Price Change (MM)

- Before the balance sheet is prepared, you have to balance the price difference accounts. Analysis of these accounts tells you if materials subject to standard price control are valued correctly.
- If they are not, you have to change the material price. You change the material price either online (with immediate effect) or by creating a batch input session that must be processed before the key date.
- Using an indicator in Customizing, you can control whether the price change should only be valid for the previous year and the balance sheet or whether it should also be valid for the current fiscal year and the current valuation of the stocks.
- You may have to debit or credit a partial quantity of a material, if the value of a material has fallen due to water damage in the warehouse, for example.

2. Lowest Value Determination (MM)

You use lowest value determination to determine a material value less than that shown in your stock accounts. You can either include this lowest value in the balance sheet or use it to revalue your materials for accounting purposes for the previous or current fiscal year.

- **Procedure**
 - Market price analysis (purchased parts only)
 - Inventory costing (products only)
 - Range of coverage determination (both)
 - Movement rate determination (both)
- **Lowest Value Determination Process:**
 - **Project Execution**
 - Lowest value determination is carried out at the start of a new fiscal year and is usually based on data from the last three months of the previous fiscal year.
 - You can carry out lowest value determination in one or two steps.
 - If you carry it out in one step, you use only one procedure or two procedures simultaneously.
 - If you carry it out in two steps, you use the second procedure to devalue the results from the first procedure.

Valuation of Stocks for Balance Sheet Purposes

- For purchased parts, you normally use market price analysis to determine the lowest delivered price. You can then decrease the market price again in per cent by carrying out a range of coverage or movement rate analysis.
- After devaluating raw materials and material components, you can include the lowest value prices for these materials in the lowest value determination for your products via inventory costing. You can then carry out another devaluation using range of coverage or movement rate determination.
- **Revaluation in Accounting (optional)**
If you want to reevaluate your materials according to the results of the “lowest value” comparison, you create a batch input session from the last program you use in lowest value determination (usually range of coverage or movement rate determination). This batch input session reevaluates the materials for a particular key date. You can choose a date from the previous fiscal year as a key date. Depending on the configuration of Customizing, the price change is only effective for the previous year or causes current prices to be adjusted.
- **Balance Sheet Creation with Results of Lowest Value Comparison**
Depending on revaluation for accounting purposes, the results of the lowest value comparison are automatically included in balance sheet valuation. If you do not carry out revaluation for the closed fiscal year, you can use the list of your balance values for each G/L account after lowest value determination to carry out the required adjustment postings for the balance sheet manually.

3. LIFO (MM)

You can also use the LIFO procedure to determine a lower stock value for the balance sheet.

In a market with rising prices, it makes sense that the material stocks that were purchased last are issued first. This means that the lower stock values of the materials that were purchased first are included in the balance sheet.

You can run LIFO valuation for individual materials or for material pools. A LIFO pool consists of materials that are similar in unit of measure and value.

- **Procedure**
 - Quantities LIFO
 - Index LIFO
- **LIFO Valuation Process**
 - **Identifying Materials**
Materials that are to be included in LIFO valuation must be marked as relevant for LIFO. If materials are grouped together in pools, you need to enter the pool number in the material master record as well.
 - **Creating the Base Layer**
During the first year of LIFO valuation, you have to create a base layer, which includes the closing stock and the stock value of the material or LIFO pool.
 - **Forming a Data Extract**
If you start using the LIFO procedure during the fiscal year, you must form a data extract from all LIFO-relevant documents.
 - **Updating Mid-Year**
For all LIFO-relevant transactions/events, receipt and issue quantities and receipt values

Valuation of Stocks for Balance Sheet Purposes

are registered and updated in monthly layers, which are aggregated and evaluated after the end of the fiscal year.

– LIFO Valuation

After the end of the fiscal year, annual layers are created for each material or pool if the receipt quantity is greater than the issue quantity. If the issue quantity is greater than the receipt quantity, the previous years' layers for each material or pool are dissolved, until the base layer is reached.

There are four different valuation methods used in LIFO valuation:

- Average delivered price for the settlement period
- Average delivered price for part of the year (the first n periods)
- Price on a progressive fill-up basis
- Price from the material master

From these procedures, you select the one that determines the lowest stock value for the balance sheet.

– Lowest Value Comparison

After running LIFO valuation, you normally carry out a lowest value comparison. In this procedure, the valuation of the individual annual layers can be reduced again by the lowest values. The lowest net layer values that are determined are included in the balance sheet.

– Displaying the LIFO Results

On the LIFO results display, the results of the valuation according to inventory accounting and the results of the valuation according to the LIFO procedure are compared. You can choose between gross LIFO values (without 'lowest value' comparison) and net LIFO values (with 'lowest value' comparison). You can also have a weighted LIFO price updated in the material master (as of 4.5A, you can also make material price changes directly or use a batch input session to make material price changes).

– Creating a Balance Sheet Using the LIFO Results

The results of LIFO valuation are not automatically included in balance sheet valuation. You can therefore use a list of your balance values for each G/L account after LIFO valuation to make the necessary adjustment postings for the balance sheet manually.

4. FIFO (MM)

You can also use the FIFO procedure to determine a lower stock value for the balance sheet.

In a market with falling prices, it makes sense that the materials that were purchased first are issued first. This means that the lower stock values of the materials that were purchased last are included in the balance sheet.

You run FIFO valuation individually for each material.

• FIFO Valuation Process:

– Identifying Materials

Materials that are to be included in FIFO valuation must be marked as relevant for FIFO.

– Forming a Data Extract

If you start using the FIFO procedure during the fiscal year and/or the procedure should work on the basis of single receipts, you have to form a document extract.

Valuation of Stocks for Balance Sheet Purposes

- **FIFO Valuation Using Lowest Value Comparison**

Actual FIFO valuation takes place after the end of the fiscal year. In contrast to LIFO valuation, you can carry out lowest value comparison in the same step.

In FIFO valuation, you can also create a batch input session for revaluation of your materials for accounting purposes. The batch input session must be activated for the key date.

In the list of FIFO results, the results of the valuation according to inventory accounting and the valuation according to the FIFO procedure are compared.

- **Creating a Balance Sheet Using the FIFO Results**

Depending on revaluation for accounting purposes, the results of FIFO valuation are automatically included in balance sheet valuation. If you do not carry out revaluation for the closed fiscal year, you can use a list of your balances for each G/L account after FIFO valuation to make the necessary adjustment postings for the balance sheet manually.

Consolidation

Consolidation

Purpose

This scenario describes how the individual financial statements of companies in a corporate group are combined in order to create consolidated financial statements.

The consolidation process involves eliminating the effects of trading partner and financial relationships between group companies. You can perform consolidation for your group using the functions described below.

Process Flow

Master Data

1. Before you start consolidation, you set up master data in your Consolidation application. Most importantly, you set up master data for your companies, subgroups, and the financial statement chart of accounts that you use.

Data Entry

2. You collect the individual financial statement data for consolidation in the system. This data can be transferred from a remote PC or system, or entered centrally.

Currency Translation

3. Group currency is always used for the consolidated financial statements. You therefore translate individual financial statement data from the local currency of each company into group currency.

Standardizing Entries

4. Before any consolidation entries are posted, you adjust data in the individual financial statements so that it meets the valuation requirements of the parent company. You do this by posting standardizing entries.

Intercompany Eliminations

5. You post consolidating entries in order to eliminate the payables and receivables and revenue and expense that originate from goods and service transactions between group companies.

Before you post these entries, you can generate lists of balances in order to analyze any indiscrepancies in the data.

Elimination of Intercompany Profit and Loss

6. You post consolidation entries in order to eliminate profit and loss resulting from goods and service transactions between group companies. You eliminate intercompany profit and loss in both transferred assets and inventory.

Consolidation of Investments

7. You post consolidating entries in order to eliminate the investment holdings of parent companies in your group against the proportional equity of subsidiaries and associated

Consolidation

companies in the same group. The common methods of consolidating investments - that is the purchase method, pooling-of-interest method, proportional consolidation and the equity method - are all supported by the system.

Standard Reports

8. After you have completed your consolidation activities, you can run one of the standard reports provided on the consolidated data.

User-Defined Reports

9. In addition to running standard reports, you can define and run your own reports to meet your own specific requirements.

Funds Management

Funds Management

Purpose

The *Funds Management* scenario describes the planning and execution of the budget and the execution of year-end operations. It also represents the master data processing and use of the information system in Funds Management.

You implement the business functions of the R/3 components in the following list, as part of the *Funds Management* scenario. The values you have posted in these components are updated in Funds Management, if a commitment item with the financial transaction 30 was stated as an additional account assignment on posting. The following table highlights if posting of expenditures with such an additional account assignment can also take place with or without an active availability control of the required funds.

R/3 component	Functions	Availability control
G/L accounting	G/L account posting, parked documents, settlement cancellation, incoming payments, outgoing payments	√
Accounts payable accounting	Invoices, credit memos, down payments, internal transfers, outgoing payments, incoming payments	√ -
Accounts receivable accounting	Invoices, credit memos, down payments, internal transfers, incoming payments, outgoing payments	-
Asset accounting	Asset acquisition, transfer posting, other transactions, document reversal Asset retirement, document changes	√ -
Travel Management, HR administration	Travel expenses	√
Overhead cost controlling	Actual line item reposting, manual funds reservation Actual assessment, actual posting of primary costs, actual distribution, indirect activity allocation, surcharge calculation, order settlement. Activity allocation actuals, actual accrual calculation	√ -
Purchasing	Purchase requisition, purchase order, outline agreement, scheduling agreement	√
Inventory management	Goods receipt, goods issue, transfer posting, service entry, goods movement for return deliveries, transfer from own stocks	√
Invoice verification	Invoice receipt, logistics invoice verification	√
Maintenance processing	Settlement of plant maintenance orders	-
Purchasing, shipping, invoicing	Customer invoice processing, goods issue	-

R/3 component	Functions	Availability control
Payroll, HR administration	Payroll accounting	√

Process Flow

The process flow of the scenario is divided into budget planning, budget execution and the execution of year-end changes. Master data processing and use of the information system in Funds Management takes place in parallel.

Master data processing

- You define the budget structure at the beginning of master data processing. This consists of the following objects:
 - Commitment items (structural content of the budget)
 - Funds centers (organizational structure)



If you require an additional structure, you can make this using funds. Funds, e.g. funds from secondary sources, are supplied by a sponsor for a particular application of funds and administered separately.

- Commercial transactions in Funds Management are controlled by the assignment of one or more statuses to a master data object (funds center, commitment item, fund).
- Master data indexes are available for checking the budget structure.
- You store a Funds Management commitment item in each selected G/L account of Financial Accounting, to prepare for budget execution.
- Finally, you prepare integration of Funds Management with Inventory Management or Cost Accounting. You, for example, assign cost elements of cost accounting to commitment items of Funds Management to integrate Funds Management and Cost Accounting.

Budget planning

- Budget planning begins with preparatory activities:
 - First, you process budget versions to execute budgeting in several versions. You can emphasize different steps in budget planning with budget versions.
 - First, you process budget versions to execute budgeting in several versions. A budget structure plan defines which combinations of fund, funds center and commitment item can be budgeted or posted for a budget year.
 - You define rules for revenues increasing the budget to increase the expenditure budget by revenues.
- In connection with these preparatory activities, you estimate the budget. You can use an already existing budget version as a template for the original budget processing. If you are working with budget versions, you can provide these with blocks.
- You process the original budget as soon as the budget plan has been approved and the budget is available. You also have the option of working with budget version copies and blocks for this purpose.

Funds Management

4. You can choose when to release budget during the subsequent budget execution. You can use releases to increase the available budget in the case of foreseeable budget exhaustion or overrun.
During a budget year, it might be necessary to execute the following budget updates:
 - Supplements serve to increase the available budget or to create a supplementary budget. If you are working with budget version blocks, you first have to unlock the appropriate version. The supplementary budget is estimated and then approved. You can release the budget after entering the supplement.
 - Transfer postings are for increasing the available budget or they enable you to consume budget resulting from a budget increase. If you are working with budget version blocks, you first have to unlock the appropriate version. If you are working with releases, you have to reduce these before the transfer. You can release the budget after executing the transfer.
 - Returns are for returning budget. If you are working with budget version blocks, you first have to unblock the appropriate version. If you are working with releases, you have to reduce these before the return.

Budget execution

1. You execute the following functions of Funds Management as part of the budget execution:
 - Payment transfers to move actual data in Funds Management from one FM account assignment to another.
 - Funds reservations to reserve funds for later expenditures.
 - Payment selections to convert line items from invoices, which are completely cleared in Financial Accounting, from the status *Invoice* to the status *Payment*.
 - Budget increases, to increase existing budget for certain functional areas according to the purpose-related additional revenues.
2. You also implement business functions of the R/3 components listed in the *Purpose* section. The values you have posted in these components are updated in Funds Management. This might result in an availability control of the required funds.
3. Depending on the results of these postings, you then carry out additional processes in Funds Management:

If ...

the posting was executed, but a warning of foreseeable budget exhaustion was issued...

OR

the posting was rejected because the budget was exceeded...

you are working on a payment basis and payments are posted...

you are working on invoice basis, outgoing invoices were posted and you would like to increase your budget on the basis of posted invoices...

Then...

you have the options of releasing, supplementing and transferring budget in the *Budget planning* section of Funds Management.

you select the posted payments. After payment selection, you can execute a budget increase on payment basis.

you execute the budget increase. In order to be able to consume budget, you need to carry out the budget transfer described in the section *Budget planning*.

Year-end operations

If you want to execute year-end operations, prepare for this by completing closing operations in R/3 feeder components.

You have the following options as part of year-end operations:

- Carryforward of the open commitment: You select open commitment documents and carry them forward. You can cancel this carryforward if required.
- Carryforward of budget remainders: First, you define carryforward rules. In connection with this or with the carryforward of commitment documents, you carry out preparation of the budget carryforward, determination of the budget carryforward and budget carryforward.
- Carryforward of actual balances of funds: First, you assign the carryforward item categories to the commitment item categories and mark the appropriate funds for inventory management. You then execute the balance carryforward.

Information System

You can use the information system to analyze the business transactions relevant to *Funds Management* using the following reports:

- Master data indexes
- Summarized reports (totals evaluations)
- Line item reports
- Overview of closing operations executed
- Matching line items and totals records

Treasury

Treasury

Definition

The enterprise area **Treasury** focuses on efficient liquidity, portfolio and risk management within a company.

Use

Parts of Treasury:

Cash Management

The Cash Management component allows you to ensure that you have sufficient liquidity for payments that are due and to monitor payment flows. The cash position and liquidity forecast functions display the movements on the various accounts.

Functional areas of Cash Management:

- Electronic banking
- Check deposit
- Cash management
- Cash forecast
- Cash concentration

Payment inflows and outflows can be entered in entered in Cash Management in the following ways:

- Manual/electronic bank statement
- POR procedure
- Lockbox procedure
- Manual/electronic check deposit
- Bill of exchange presentation
- Using payment advice notes

The core records and concentration channels are based on the concentration strategy you define in advance (cash concentration / cash pooling). The result of the cash concentration is output in the form of payment orders or confirmation letters. The payment advices required for the value-dated bank account balance are generated automatically and considered for the cash position.

Treasury Management

The treasurer uses the analyses of the current liquidity and risk situation to make decisions about future investments and borrowings, taking the conditions on the financial markets into account. The resulting financial transactions are then entered in Treasury Management.

Targets of Treasury Management:

- To provide support for managing financial transactions and positions from the trading stage through to the transfer to Financial Accounting.

- To provide flexible reporting and evaluation structures for analyzing financial transactions, positions and portfolios.

You can control short-term liquidity and risk positions by concluding money market and foreign exchange transactions (for example, to iron out liquidity deficits/surpluses or hedge currency risks). The securities area supports instruments for the medium to long term.

Loans Management

Borrowing and lending in the form of loans is a key element of a company's liquidity and portfolio management.

Targets of Loans Management:

- To provide functions for entering and managing loan transactions at all stages, from making an offer to a prospective customer and drawing up the conditions of the actual contract (including complex collateral management), right through to posting in Financial Accounting.
- To automate and streamline typical loan processes as far as possible by using standardized procedures and accessing and processing the relevant loan information on a timely basis.

Since Loans Management is integrated with the Cash Management and Market Risk Management components, you can see the effect of your loans on your liquidity and interest rate risk immediately.

Cash Budget Management

The objective of the Cash Budget Management component is to monitor and secure liquidity in the medium to long term. It delivers the actual and target figures for reviewing plans, analyzing deviations and as a basis for future planning.

In Cash Budget Management you can plan the expected incoming and outgoing payments for exact periods and split them up into specific groups. Planned incoming and outgoing payments are not netted (gross principle). Typical periods are weeks or months. The planned items indicate the source of incoming payments and the purpose of outgoing payments (for example, payments for raw material purchases, rent or salaries).

The system takes the relevant data from the documents posted in Financial Accounting and other operational systems (amounts and structure of the payment commitments (grouped according to planned items) / actual payments). At the same time you see the funds available for payment at the beginning and end of a period.

Market Risk Management

Market Risk Management (TR-MRM) is a subcomponent of Treasury that is used for planning, controlling and monitoring the market risks a company is exposed to.

Market risks result from the danger of negative market developments (changes to parameters on the money and capital markets), which in turn affect the financial assets of a company. You can differentiate between risks from changes to stock prices, interest rates and exchange rates.

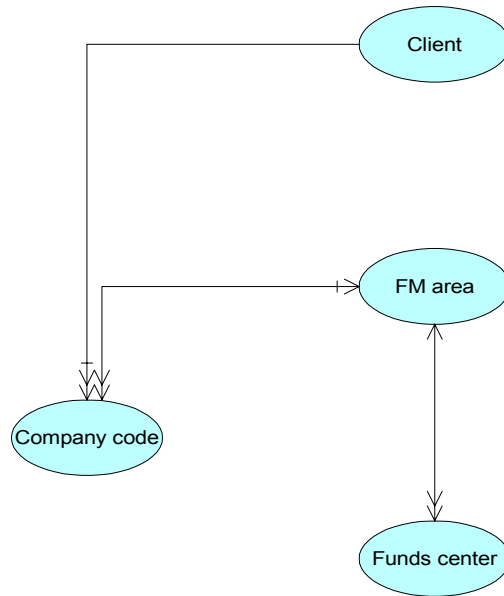
Market Risk Management can be used to carry out the following basic functions:

- Create and maintain all the market data required to value financial instruments (both real data and fictitious data within scenarios)
- Select financial instruments according to various criteria, taking underlying transactions into account
- Value the following transactions on the basis of real and fictitious data:

Treasury

- Forward exchange transactions
- Currency options
- Bonds
- Loans
- Money market transactions
- Forward rate agreements
- Interest rate guarantees
- Interest rate swaps / cross-currency interest rate swaps
- Swaptions
- Futures
- Bond options
- Options on futures
- Calculate the following key figures:
 - Market values and differences to market values
 - Future values for any time horizon
 - Effective price and effective interest rate
 - Currency exposure / interest rate exposure
 - Sensitivity to changes in interest rates, exchange rates or volatilities
 - Value at Risk
 - Cash flow for options and instruments with variable interest rates
- Interactive analysis for the above values

Treasury Organization Diagram



[Legend \[Ext.\]](#)

Stocks

Stocks

Purpose

This scenario describes how stocks, investment certificates and other corporate investments are processed in the SAP System, and how the corresponding positions are managed.

Prerequisites

The necessary master data for the business partners, securities accounts and classes, as well as the required market data (indices, reference interest rates, and securities prices) is created.

See also: Securities master data scenario.

Process Flow

Transaction Processing

In the course of processing, a transaction progresses through various activity categories. Which of the following progressions applies, depends on the Customizing settings made for the transaction type:

- *Order → Contract → Settlement* or
- *Order → Contract*

The following explains the various processing steps using the progression *Order → Contract → Settlement* as an example.

1. Creating an order

When you create an order, you are reproducing either a sales order or a purchase order in the R/3 System. You determine which security (e.g. stock with ID number 777778) in which securities account (e.g. COMBA1) is to be purchased or sold, and also specify the number of units and the conditions. The bank account is proposed by the system based on the *Standing Instructions* for the counterparty.



You can use the *Other flows* function to enter the charges, brokerage, commissions and so on associated with the purchase or sale of the security, directly on creating the order.

2. Executing the order

With the *Transaction → Execute* function, you effectively move the transaction from the activity category *Order* to the activity category *Contract*. You use this function once the required securities are ordered (e.g. after the bank has called back). You have the option of changing any of the initial order details if necessary.

- At the order execution stage, you can also generate correspondence. By means of the correspondence function, you can automatically generate the following correspondence for the financial transactions:
 - External correspondence (letters of confirmation) or
 - Internal correspondence (dealing slips).

- You can also display the cash flow. The cash flow shows the set of all flow records classified by flow types in chronological order. The most typical flow types are purchases, sales, fixed and variable interest rates, and repayments.
- Saving the transaction as a contract updates both the cash flow and the data in Cash Management.
- Instead of executing the order, you can also opt to delete it at this stage.

3. Settling the **contract**

When you come to settle the contract, the system pulls up all the details on the financial transaction from the contract so that you can check the information and make any changes that might be necessary. Once again, you have the option of activating correspondence or of displaying the anticipated cash flow.

4. Releasing the **transaction**

Depending on the Customizing settings, the transaction is either released automatically when the contract is settled, or manually, using the release function.

5. Posting the **transaction**

Once the transaction has been released, you can proceed to post it. A posting log is generated, and you can use this to see what the corresponding financial accounting document looks like.

Position Management

The following functions are provided to help you manage your stock, investment certificate, and shareholding positions:

- **Securities account transfer**

This function lets you transfer positions at the book value from one securities account within the company code to another. A prerequisite for this is that the position indicator in the target securities account is maintained. The flows required for the transfer are generated by the system, which also updates the position in the respective securities account. The result of the transfer is displayed in a posting log.

- **Incoming payment processing**

Incoming payments (interest, dividend or repayment flows) can be posted either automatically or manually.

- Automatic posting of incoming payments

You can use automatic posting to process flows which occur regularly, where the timing and the amount of the flow is known in advance. Typically, automatic posting is used for interest, dividend, and repayment flows, that is, flows generated from conditions.

- Manual posting of incoming payments

You can use the incoming payments function to manually process due flows for interest, dividends and repayments. In contrast to automatic processing, here you have the advantage of being able to process the flows individually. This is useful in a case where - after comparison with the bank statements - you want to manually change automatically generated tax flows, for example.

- **Corporate actions**

Stocks

The *Corporate Actions* function lets you represent changes to the capital structure stemming from the issuer. Predefined corporate actions allow you to represent the following capital changes for example:

- Stock split
- Capital reduction
- Capital increase from retained earnings
- Transfer of new stocks

You can also implement user-defined position actions.

- **Closing operations**

Both period-end closing and key date valuation are available for closing operations.

- You use **period-end closing** to post price gains or losses and correction records up to a certain key date. Correction records are used to value positions belonging to the same class, but located in different securities accounts, in the same way.

You can initially execute period-end closing in a simulation run. This generates a list of all securities flows included in the period-end closing operation. Period-end closing is a prerequisite for other closing work, such as key date valuations.

- You use **key date valuation** to value your equities, and can also run the valuation as a foreign currency valuation. By means of general valuation rules set in Customizing, you can represent country-specific valuation specifications on the one hand, and on the other, run a differentiated valuation by classifying rate types (e.g. valuation rate, spot rate, bid rate, ask rate, closing rate).

- **Balance sheet transfer**

The balance sheet transfer function allows you to move securities positions between account assignment levels. This can be linked to a transfer posting between the corresponding balance sheet accounts in Financial Accounting, something which is necessary when a security from your current assets is to be added to your fixed assets, for example.



The G/L account in which the position is managed in Financial Accounting is assigned by means of the account assignment reference.

- **Restraint on disposal**

With this function you can block sales for entire securities accounts or certain classes within a securities account. When you select individual classes you can block either the entire item or just parts of the item.

You can set a time limit for the block so that the position is automatically released once the time limit is exceeded. You can manually unblock blocked items or securities accounts at any time.

Result

You have set up and managed securities positions. You can now proceed to evaluate the positions in the information system.

Stocks

Within the context of position measure planning, you decide whether you want to set up further securities positions or dismantle existing positions. Your decision will largely depend on the changes in the external market conditions, since these have a direct impact on your company's liquidity situation.

Subscription Rights

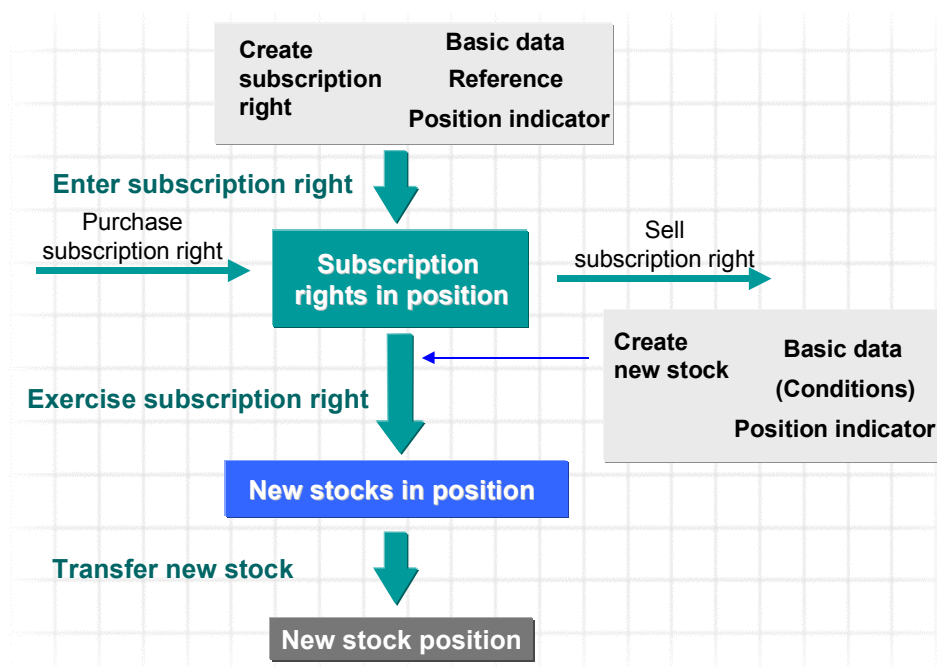
Subscription Rights

Purpose

The subscription rights scenario allows you (as a stockholder) to retain your share of a stock corporation's basic capital when there are capital increases by exercising acquired and recorded subscription rights.

Process Flow

Overview: Capital increase



The following functions are provided to support you at the various processing stages:

Function	Prerequisites	Result
Post subscription rights (Corporate action)	<ul style="list-style-type: none"> Period-end closing carried out for the old stock. Subscription right is created as a class. Position indicator has been created for the subscription right. 	<p>The subscription rights resulting from ownership of the old stocks are in the position.</p> <p>The old stock position is marked down and the subscription rights position is posted. (see graphic)</p>

Subscription Rights

Purchase/sell subscription rights (if appropriate) (via transaction management)		The required quantity of subscription rights is in the position.
Exercise subscription right (Exercise security rights)	<ul style="list-style-type: none"> • Period-end closing carried out for the subscription right. • New stock has been created as a class [Ext.]. • A position indicator [Ext.] has been created for the new stock. 	The new stock is in the position.
Transfer new stock (Corporate action)	<ul style="list-style-type: none"> • Period-end closing carried out for the new stock. 	During the transfer posting, the new stock is automatically assigned the ID number of the old stock. → New stock position.

You manage the positions for subscription rights using the same functions as for managing [stocks \[Page 190\]](#).

Result

Having managed your subscription rights, you return to the decision process for position actions: you have processed your subscription rights position and now need to decide whether to plan another subscription right or switch to a different securities type and position.

Bonds

Bonds

Purpose

This scenario describes how bonds are processed in the SAP System, and how the corresponding bond positions are managed.

Prerequisites

The necessary master data for the business partners, securities accounts and classes, as well as the required market data (indexes, reference interest rates and securities prices) is created.

See also: *Securities Master Data Scenario*.

Process Flow

Transaction Processing

In the course of processing, a transaction (purchase or sale of a security) progresses through various activity categories. Which of the following progressions applies, depends on the Customizing settings made for the transaction type:

- *Order → Contract → Settlement* or
- *Order → Contract*

The following explains the various processing steps using the progression *Order → Contract → Settlement* as an example.

1. Creating an order

When you create an order, you are reproducing either a sales order or a purchase order in the system. You determine which security in which securities account is to be purchased or sold, and also specify the number of units and the conditions. The bank account is proposed by the system based on the *Standing Instructions* for the counterparty.



You can use the *Other flows* function to enter the charges, brokerage, commissions and so on associated with the purchase or sale of the security, directly on creating the order.

2. Executing the order

With the *Transaction → Execute* function, you effectively move the transaction from the activity category *Order* to the activity category *Contract*. You use this function once the required securities are ordered (for example, after the bank has called back). You have the option of changing any of the initial order details if necessary.

- At the order execution stage, you can also activate correspondence. By means of the correspondence function, you can automatically generate the following correspondence for the financial transactions:
 - External correspondence (letters of confirmation) or
 - Internal correspondence (dealing slips).

- You can also display the cash flow. The cash flow shows the set of all flow records classified by flow types in chronological order. The most typical flow types are purchases, sales, fixed and variable interest rates, and repayments.
- Saving the transaction as a contract updates both the cash flow and the data in Cash Management.
- Instead of executing the order, you can also opt to delete it at this stage.

3. Settling the **contract**

When you come to settle the contract, the system pulls up all the details on the financial transaction from the contract so that you can check the information and make any changes that might be necessary. Once again, you have the option of activating correspondence or of displaying the anticipated cash flow.

4. Releasing the **transaction**

Depending on the Customizing setting, the transaction is either released automatically when the contract is settled, or manually, using the release function.

5. Posting the **transaction**

Once the transaction has been released, you can proceed to post it. A posting log is generated, and you can use this to see what the corresponding financial accounting document looks like.

Position Management

The following functions are provided to help you manage your bond positions:

- **Securities account transfer**

This function lets you transfer positions at the book value from one securities account within the company code to another. A prerequisite for this is that the position indicator in the target securities account is maintained. The flows required for the transfer are generated by the system, which also updates the position in the respective securities account. The result of the transfer is displayed in a posting log.

- **Incoming payment processing**

Incoming payments (interest, dividend or repayment flows) can be posted either automatically or manually.

- Automatic posting of incoming payments

You can use automatic posting to process flows which occur regularly, where the timing and the amount of the flow is known in advance. Typically, automatic posting is used for interest, dividend, and repayment flows, that is, flows generated from conditions.

- Manual posting of incoming payments

You can use the incoming payments function to manually process due flows for interest, dividends and repayments. In contrast to automatic processing, here you have the advantage of being able to process the flows individually. This is useful in a case where – after comparison with the bank statements - you want to manually change automatically generated tax flows, for example.

- **Corporate actions**

Bonds

The *Corporate Actions* function lets you represent changes to the capital structure stemming from the issuer. For example, a predefined corporate action allows you to represent the capital change *Issue Currency Changeover*.

You can also implement user-defined actions.

- **Closing operations**

Within the closing operations area, you can choose the following processes:

- Period-end closing

You use period-end closing to post rate gains or losses and correction records up to a certain key date. Correction records are used to value positions belonging to the same class, but located in different securities accounts, in the same way.

You can initially execute period-end closing in a simulation run. This generates a list of all securities flows included in the period-end closing operation. Period-end closing is a prerequisite for other closing work, such as key date valuation.

- Key date valuation

You use key date valuation to value your positions, and can also run the valuation as a foreign currency valuation. By means of general valuation rules set in Customizing, you can represent country-specific valuation specifications on the one hand, and on the other, run a differentiated valuation by classifying rate types (e.g. valuation rate, spot rate, bid rate, ask rate, closing rate).

- Amortization

The amortization function allows you to value a position using linear or exponential amortization from the book rate to the repayment rate precisely to-the-day, on any key date. The corresponding amortization flows are automatically generated by the system based on the difference determined.

- Price valuation

- Interest accrual/deferral

With the help of the **interest accrual/deferral** function you can assign revenues and expenses to the respective fiscal years based on periods. Once the year-end closing work is complete, you reverse the accruals/deferrals again.

- **Balance sheet transfer**

The balance sheet transfer function allows you to move securities positions between account assignment levels. This can be linked to a transfer posting between the corresponding balance sheet accounts in Financial Accounting, something which is necessary when a security from your current assets is to be added to your fixed assets, for example.



The G/L account in which the position is managed in Financial Accounting is assigned by means of the account assignment reference. The balance sheet transfer changes the account assignment reference in the position indicator. You can execute the balance sheet transfer per company code or per securities account.

- **Restraint on disposal**

With this function you can block sales for entire securities accounts or certain classes within a securities account. When you select individual classes you can block either the entire item or just parts of the item. You can set a time limit for the block so that the position is automatically released once the time limit is exceeded. In addition to entering a blocking reason, you can use a memo to enter further information for the activity. You can manually unblock blocked items or securities accounts at any time.

Result

You have set up and managed securities positions. You can now proceed to evaluate the positions in the information system.

Within the context of position measure planning, you decide whether you want to set up further securities positions or dismantle existing positions. Your decision will largely depend on the changes in the external market conditions, since these have a direct impact on your company's liquidity situation.

Warrants

Warrants

Purpose

This scenario describes how warrants are represented in Treasury Management.

A warrant documents the right to buy or sell an underlying at a certain point in time or within a certain period against payment of an amount specified when the warrant was issued. This scenario includes processes for the purchase/sale of warrants, that is, the posting of warrants from warrant bonds, plus for exercising the rights established in these warrants.

Prerequisites

You must have created the warrant in the class master data by entering the following information:

- Issuer
- Issue currency
- Option ratio
- Term
- Underlying

Process Flow

Equity warrants include both traditional warrants, as in warrant bonds, and covered warrants. You enter traditional warrants within the framework of scenario TR-SE: Warrant Bonds using the *Exercise Security Rights* function by detaching the warrant from the warrant bond. All other warrant positions are represented by buying the warrants via transaction management.

- In principle, the management functions used for managing [stocks \[Page 190\]](#) are also available for managing warrant positions.
- The *Exercise security rights* function enables you to exercise warrants, or let them expire.
 - When you exercise a warrant, the system displays the information on the warrant and the corresponding underlying in the header data. If you specified cash settlement in the issue conditions when maintaining the class master data, the system calculates the cash settlement per reference unit based on the current rate of the underlying (which you have to enter). If you specified delivery, the system automatically generates the flows for the corresponding change in the capital position.
 - Before you exercise a warrant, you have the opportunity of changing the generated flows, entering payment details, or generating additional flows.
 - To let the warrant expire, you sell the warrant at a price of "0" (zero).

Result

Having managed your warrants, you are back at the position measure planning stage: you have processed your warrants and now need to decide whether to plan another warrant or switch to a different securities type and position.

Warrant Bonds

Warrant Bonds

Purpose

You use the warrant bond scenario to process bonds to which a warrant allowing subscription to the stocks of the issuer is attached.

Prerequisites

In order to use the scenario for warrant bond management, you must have:

- Created the class master data for the warrant bond cum and the warrant bond ex (differentiation using the quotation type (cum or ex)) plus the warrant.
- Executed period-end closing for the warrant bond cum.
- Maintained the position indicators for the warrant bond ex and the warrant.

Process Flow

1. You can buy or sell warrant bonds within transaction processing.
For details, see the [Bonds \[Page 196\]](#) scenario.
2. When you come to exercising the right vested in the bond, the following functions are available:
 - a. Detaching the warrant from the bond (Function: *Exercise security right*)
This function automatically reduces the previous warrant bond cum position and increases the warrant bond ex and warrant positions.
 - b. Exercising the warrant (Function: *Exercise security right*)
For details, see the [Warrants \[Page 200\]](#) scenario.
3. You manage your warrant bond cum positions and your warrant bond ex positions with the same functions used for standard [bonds \[Page 196\]](#).

Result

With the help of the warrant bond scenario, you have exercised the warrant carried by a warrant bond.

Convertible Bonds

Purpose

The scenario for managing convertible bonds allows you to process bonds which can be converted into the stocks of the issuer within a certain period.

Prerequisites

To use the scenario for managing convertible bonds, you must have:

- Created the class master data for the convertible bond and the stock.
- Carried out period-end closing for the convertible bond before converting it.

Process Flow

1. You can buy or sell convertible bonds within transaction processing (for details, see the [bonds \[Page 196\]](#) scenario).
2. You can use the *Exercise Security Rights* function to convert the bond within the given conversion period.
 - a. When you exercise your conversion right, you are asked to determine the portion you want to convert. The system then determines the number of stocks to be received and any surcharge which is due.
 - b. In the conversion process, the bond position decreases and the stock position increases in line with the conversion ratio. The book values of the positions are updated on the basis of the book rates at the time of conversion and, if appropriate, the surcharge. The planned flows of the cash flows are adjusted to match the changed positions.
3. The same functions available for managing standard bonds are also available to help you manage your convertible [bond \[Page 196\]](#) positions.
4. Similarly, when you come to manage the stock positions subscribed to through the conversion, the functions provided for managing [stocks \[Page 190\]](#) are available.

Result

You have exercised the conversion option attached to a convertible bond and now have the stocks in your position.

Deposits at Notice

Deposits at Notice

Purpose

Financial transactions with deposits at notice are used for the short- to medium-term investment or borrowing of liquid funds. Cash management decisions made on the basis of the surpluses and shortages established in Cash Management, can be implemented using deposits at notice.

Prerequisites

To use the scenario for back office processing of deposits at notice, you must have created the master data already required for trading deposits at notice in the relevant master data scenario.

Process Flow

1. You invest or borrow deposits at notice within deposit at notice processing. When deposits at notice are traded, money is invested and borrowed without a set due date. You enter the amounts and conditions, the period of notice, plus the interest payment date and frequency. There are also functions for giving notice on and rolling over existing deposits at notice. By rolling over a deposit at notice, you can increase or decrease the amount of the deposit at notice and change the conditions while retaining the original transaction number.



Since the term end for a deposit at notice only becomes known when notice is actually given, the cash flow for these transactions can only be determined for a certain period. You specify this period during configuration. In cases where this period is exceeded (because notice has not yet been given) the continuing cash flow for the transaction is updated on a periodic basis.

2. In addition to the functions directly related to transactions with deposits at notice, there are supporting functions for correspondence and confirmation management. The system prepares the transaction data such as activities, flows etc. and creates preliminary letters of confirmation ready for editing. You can print out this data, or fax it directly from the R/3 System. When you are defining the correspondence, you can specify that a counterconfirmation from the business partner should be received before further processing takes place. The correspondence functions also incorporate a tool for monitoring overdue counterconfirmations.
3. Afterwards, as in the trading area, you can call up information on entered transactions and make any adjustments that might be necessary. You can use the settlement function to control and check the transactions and can add any information that might be missing, such as payment instructions or posting specifications. When you save, the system changes the activity category of the transaction, thereby recording the fact that it has been checked and edited in the back office area.
4. Before the transactions are transferred to accounting, you can make use of a netting function for financial transactions. The netting function allows you to summarize transactions from the areas money market, forex, and derivatives, and settle them together. One of the main prerequisites for this is that the transactions were created in the same company code, with the same business partner, and have the same currency and payment terms.
5. After the transactions that were entered in trading have been checked and completed in the back office, they are finally processed in the accounting area. Here, you find functions for

Deposits at Notice

transferring the data to financial accounting, such as posting reports or postings within the framework of position management; functions which stem from Financial Accounting rather than Treasury. You also find functions ensuring that financial transactions and positions are correctly taken account of in closing work, including a function for the periodic accrual of revenues and expenses, and valuation functions. In the money market area, you can run key date and foreign currency valuations as well as display realized gains and losses.

6. You can then use the information system to evaluate your money market transactions. The journal function allows you to select those transactions in a certain period which were concluded by certain traders or with certain business partners. With the position list function, you can run position evaluations relating to traders or business partners and generate a list of the transactions sorted according to the conditions. The payment schedule function lets you call up the incoming and outgoing payments resulting from money market transactions within the period you define. Finally, the link to the SAP drilldown reporting tool provides you with access to a whole range of flexible reporting and editing functions for the position and flow values generated in money market trading.

Commercial Paper

Commercial Paper

Purpose

Financial transactions with commercial papers are used for the short- to medium-term investment or borrowing of liquid funds. Cash management decisions made on the basis of the surpluses and shortages established in Cash Management, can be implemented using commercial papers.

Prerequisites

To use the scenario for back office processing of commercial papers, you must have created the master data already required for commercial paper trading in the relevant master data scenario.

Process Flow

1. You purchase or sell individual commercial paper tranches in commercial paper processing. The most notable feature about commercial papers is that there are no interest payments during the term to maturity. You enter the nominal amount and the yield to be achieved and the system uses discounting to determine the payment amount which the investor has to pay to the debtor at the start of the term to maturity. Alternatively, the interest can be determined based on a specified rate. The cash flow displays the capital position increase, which is equivalent to the nominal amount and the discounting amount, at the start of the term to maturity, and the repayment of the nominal value at the end of the term to maturity. Another variant is to display the discounted capital position increase at the start of the term and the repayment of the PV and the interest flow at the end of the term.
2. In addition to the functions directly related to transactions with commercial papers, there are supporting functions for correspondence and confirmation management. The system prepares the transaction data such as activities, flows etc. and creates preliminary letters of confirmation ready for editing. You can print out this data, or fax it directly from the R/3 System. When you are defining the correspondence, you can specify that a counterconfirmation from the business partner should be received before further processing takes place. The correspondence functions also incorporate a tool for monitoring overdue counterconfirmations.
3. Afterwards, as in the trading area, you can call up information on entered transactions and make any adjustments that might be necessary. You can use the settlement function to control and check the transactions and can add any information that might be missing, such as payment instructions or posting specifications. When you save, the system changes the activity category of the transaction, thereby recording the fact that it has been checked and edited in the back office area.
4. Before the transactions are transferred to accounting, you can make use of a netting function for financial transactions. The netting function allows you to summarize transactions from the areas money market, forex, and derivatives, and settle them together. One of the main prerequisites for this is that the transactions were created in the same company code, with the same business partner, and have the same currency and payment terms.
5. After the transactions that were entered in trading have been checked and completed in the back office, they are finally processed in the accounting area. Here you find functions for transferring the data to financial accounting, such as posting reports or postings within the framework of position management; functions which stem from Financial Accounting rather than Treasury. You also find functions ensuring that financial transactions and positions are correctly taken account of in closing work, including a function for the periodic accrual of

Commercial Paper

revenues and expenses, and valuation functions. In the money market area, you can run key date and foreign currency valuations as well as display realized gains and losses.

Fixed-Term Deposits

Fixed-Term Deposits

Purpose

Financial transactions with fixed-term deposits are used for the short- to medium-term investment or borrowing of liquid funds. Cash management decisions made on the basis of the surpluses and shortages established in Cash Management, can be implemented using fixed-term deposits.

Prerequisites

To use the scenario for back office processing of fixed-term deposits, you must have created the master data already required for fixed-term deposit trading in the relevant master data scenario.

Process Flow

1. You invest or borrow fixed-term deposits within fixed-term deposit processing. The investment or borrowing of fixed-term deposits (including overnight money and Euromoney) involves transactions with a fixed interest rate and an agreed maturity. If the business partners authorized for this and the corresponding payment details have already been entered, you merely have to add the features.

In addition to being able to invest or borrow new fixed-term deposits, you have the option of rolling over existing fixed-term deposits. By rolling over a fixed-term deposit you can change the terms of the transaction but retain the original transaction number. When a transaction is rolled over, it is assigned a new activity or status which is handled in accordance with the parameters of the transaction and position management process. The maturity of a fixed-term deposit can be changed up until repayment provided no interest flows that have already been released, posted, or manually changed are affected (which could be the case if the maturity is shortened).

The impact of the deals concluded on liquidity is immediately visible in Cash Management.
2. In addition to the functions directly related to fixed-term deposits, there are supporting functions for correspondence and confirmation management. The system prepares the transaction data such as activities, flows etc. and creates preliminary letters of confirmation ready for editing. You can print out this data, or fax it directly from the R/3 System. When you are defining the correspondence, you can specify that a counterconfirmation from the business partner should be received before further processing takes place. The correspondence functions also incorporate a tool for monitoring overdue counterconfirmations.
3. Afterwards, as in the trading area, you can call up information on entered transactions and make any adjustments that might be necessary. You can use the settlement function to control and check the transactions and can add any information that might be missing, such as payment instructions or posting specifications. When you save, the system changes the activity category of the transaction, thereby recording the fact that it has been checked and edited in the back office area.
4. Before the transactions are transferred to accounting, you can make use of a netting function for financial transactions. The netting function allows you to summarize transactions from the areas money market, options, and derivatives, and settle them together. One of the main prerequisites for this is that the transactions were created in the same company code, with the same business partner, and have the same currency and payment terms.

Fixed-Term Deposits

5. After the transactions that were entered in trading have been checked and completed in the back office, they are finally processed in the accounting area. Here you will find functions for transferring the data to financial accounting, such as posting reports or postings within the framework of position management; functions which stem from Financial Accounting rather than Treasury. You will also find functions ensuring that financial transactions and positions are correctly taken account of in closing work, including a function for the periodic accrual of revenues and expenses, and valuation functions. In the money market area you can run key date and foreign currency valuations as well as display realized gains and losses.
6. You can go on to evaluate your money market transactions in the information system. The journal function allows you to select those transactions in a certain period which were concluded by certain traders or with certain business partners. With the position list function you can run position evaluations relating to traders or business partners and generate a list of the transactions sorted according to the conditions. The payment schedule function lets you call up the incoming and outgoing payments resulting from money market transactions within the period you define. Finally, the link to the SAP drilldown reporting tool provides you with access to a whole range of flexible reporting and editing functions for the position and flow values generated in money market trading.

Currency Options

Currency Options

Purpose

You use the scenario for back office processing of currency options to control liquidity, and recognize, analyze, and hedge against currency risks.

Prerequisites

In order to process currency options, you must have created the master data already required for option trading in the relevant master data scenario.

Process Flow

1. You purchase or sell a put or call option within currency option processing. The option price calculator helps you to determine market-oriented option prices.



When the contract is concluded, the cash flow only consists of the premium. You can represent both European- and American-style options in the SAP R/3 System and can either physically exercise the option or choose cash settlement. The impact of the deals concluded on liquidity is immediately visible in Cash Management.

2. In addition to the functions directly related to the option contract, there are supporting functions for correspondence and confirmation management. The system prepares the transaction data such as activities, flows etc. and creates preliminary letters of confirmation ready for editing. You have the possibility of printing out this data, or of faxing it directly from the R/3 System. You can also create S.W.I.F.T. files for forex transactions, so that, with the help of a user exit, you can benefit from matching systems for outgoing confirmations, such as FX-Match. When you are defining the correspondence, you can specify that a counterconfirmation from the business partner should be received before further processing takes place. The back office processing functions incorporate a tool for monitoring counterconfirmations that are overdue.
3. Afterwards, as in the trading area, you have the option of calling up information on entered transactions and making any adjustments that might be necessary. You can use the settlement function to control and check the transactions and can add any information that might be missing such as payment instructions or posting specifications. When you save, the system changes the activity category of the transaction, thereby recording the fact that it has been checked and edited in the back office area.
4. Before the transactions are transferred to accounting, you can make use of a netting function for financial transactions. The netting function allows you to summarize transactions from the areas money market, options, and derivatives, and settle them together. One of the main prerequisites for this is that the transactions were created in the same company code, with the same business partner, and have the same currency and payment terms.
5. After the transactions that were entered in trading have been checked and completed in back office processing, they are finally processed in the accounting area. Here you will find functions for transferring the data to financial accounting, such as posting reports or postings within the framework of position management; functions which stem from Financial Accounting rather than Treasury. You will also find functions ensuring that financial transactions and positions are correctly taken account of in closing work, including a function

Currency Options

for the periodic accrual of revenues and expenses, and valuation functions. In the option trading area you can run key date and foreign currency valuations as well as display realized gains and losses.

Spot/Forward Exchange Transactions

Spot/Forward Exchange Transactions

Purpose

You use spot/forward exchange transactions to control liquidity, and to recognize, analyze and hedge against foreign exchange and currency risks.

Prerequisites

To use the scenario for back office processing of spot/forward exchange transactions, you must have created the master data already required for foreign exchange trading in the relevant master data scenario.

Process Flow

1. You create spot/forward exchange transactions within spot/forward transaction processing. In spot exchange deals, internationally traded currencies are sold or purchased for other currencies at the spot exchange rate. In forward exchange deals, the currencies are traded at an agreed later date, while the relevant markups or markdowns for calculating the forward rate are specified when the deal is concluded. For back office processing, you must have stored the mandated banks as authorized business partners, together with the corresponding payment details. For foreign currency transactions, traders can import the latest rate and swap proposals.
 - If the spot/forward transaction is initially created as an *order*, you can either let the order expire or execute the order. Before the order becomes a *contract*, all the data is displayed so that you can check it and make any changes that might be necessary.
 - Forex transactions created as fixing transactions in the trading area, have to be followed up with exchange rate fixing. You can fix the exchange rate manually, or automatically by importing a rate from an exchange rate table. When the exchange rate is fixed, the transaction moves into the *contract* stage.
 - In addition to being able to create new forward exchange transactions, you have the option of rolling over existing transactions or settling them prematurely. The system uses the functions for rollovers and premature settlements to create two individual transactions linked by a swap reference. One transaction serves to offset the original forward exchange transaction (by means of identical, reverse conditions), the other, as a new transaction, allows you to adjust the term to your requirements while adopting the previous amount data.

The impact of the deals concluded on liquidity is immediately visible in Cash Management.
2. In addition to the functions directly related to the spot/forward transaction, there are supporting functions for correspondence and confirmation management. The system prepares the transaction data such as activities, flows etc. and creates preliminary letters of confirmation ready for editing. You have the possibility of printing out this data, or of faxing it directly from the R/3 System. You can also create S.W.I.F.T. files for foreign exchange contracts, so that, with the help of a user exit, you can benefit from matching systems for outgoing confirmations, such as FX-Match. When you are defining the correspondence, you can specify that a counterconfirmation from the business partner should be received before further processing takes place. The back office processing functions also incorporate a tool for monitoring counterconfirmations that are overdue.

Spot/Forward Exchange Transactions

3. Afterwards, as in the trading area, you have the option of calling up information on entered transactions and making any adjustments that might be necessary. You can use the settlement function to control and check the transactions and can add any information that might be missing such as payment instructions or posting specifications. When you save, the system changes the activity category of the transaction, thereby recording the fact that it has been checked and edited in the back office area.
4. Before the transactions are transferred to accounting, you can make use of a netting function for financial transactions. The netting function allows you to summarize transactions from the areas money market, forex, and derivatives, and settle them together. One of the main prerequisites for this is that the transactions were created in the same company code, with the same business partner, and have the same currency and payment terms.
5. After the transactions that were entered in trading have been checked and completed in the back office, they are finally processed in the accounting area. Here, you find functions for transferring the data to financial accounting, such as posting reports or postings within the framework of position management; functions which stem from Financial Accounting rather than Treasury. There are also functions to ensure that financial transactions and positions are correctly taken account of in closing work, including a function for the periodic accrual of revenues and expenses, and valuation functions. In the foreign exchange trading area you can run key date and foreign currency valuations as well as display realized gains and losses.

See also: [Foreign Exchange Swaps \[Page 214\]](#)

Foreign Exchange Swaps

Purpose

You use foreign exchange swaps to control liquidity, and to recognize, analyze, and hedge against currency risks. A foreign currency swap combines a forward transaction with a spot transaction. In a foreign exchange swap you hedge against the exchange rate risks arising from a spot transaction by concluding a forward transaction with the reverse conditions.

Prerequisites

To use the scenario for back office processing of foreign exchange swaps, you must have created the master data already required for foreign exchange trading in the relevant master data scenario.

Process Flow

1. You create a forex swap within forex swap transaction processing. When you create a forex swap in the SAP R/3 System, a spot transaction and a forward transaction are created simultaneously. The foreign currency bought by means of a spot transaction is sold again by means of a forward transaction. Alternatively, the foreign currency sold by means of a spot transaction is repurchased by means of a forward transaction.



The forward rate is determined using a specified markup or markdown. The conditions relating to authorized business partners and payment terms are the same as for spot and forward transactions. If a realtime datafeed is available, you can use a rate or swap proposal to simulate transactions, allowing direct comparison with the negotiated rates. If the forex swap is initially created as an order, you can either let the order expire or execute the order. Before the order becomes a *contract*, all the data is displayed so that you can check it and make any changes that might be necessary.

In addition to being able to create new forex swaps, you have the option of rolling over existing swaps or settling them prematurely. Rolling over a forex swap extends the forward transaction. In this process, the original transaction is offset and a new forward transaction with a different term is created. The existing data is copied to the new transaction but can be adjusted if necessary. When a forex swap is prematurely settled, offsetting is linked with a new transaction with a value date before the original term end. The impact of the deals concluded on liquidity is immediately visible in Cash Management.

2. In addition to the functions directly related to the forex swap, there are supporting functions for correspondence and confirmation management. The system prepares the transaction data such as activities, flows etc. and creates preliminary letters of confirmation ready for editing. You have the possibility of printing out this data, or of faxing it directly from the R/3 System. You can also create S.W.I.F.T. files for foreign exchange contracts, so that, with the help of a user exit, you can benefit from matching systems for outgoing confirmations, such as FX-Match. When you are defining the correspondence, you can specify that a counterconfirmation from the business partner should be received before further processing takes place. The back office processing functions also incorporate a tool for monitoring counterconfirmations that are overdue.

Foreign Exchange Swaps

3. Afterwards, as in the trading area, you have the possibility of calling up information on entered transactions and making any adjustments that might be necessary. You can use the settlement function to control and check the transactions and can add any information that might be missing such as payment instructions or posting specifications. When you save, the system changes the activity category of the transaction, thereby recording the fact that it has been checked and edited in the back office area.
4. Before the transactions are transferred to accounting, you can make use of a netting function for financial transactions. The netting function allows you to summarize transactions from the areas money market, options, and derivatives, and settle them together. One of the main prerequisites for this is that the transactions were created in the same company code, with the same business partner, and have the same currency and payment terms.
5. After the transactions that were entered in trading have been checked and completed in the back office, they are finally processed in the accounting area. Here you will find functions for transferring the data to financial accounting, such as posting reports or postings within the framework of position management; functions which stem from Financial Accounting rather than Treasury. You will also find functions ensuring that financial transactions and positions are correctly taken account of in closing work, including a function for the periodic accrual of revenues and expenses, and valuation functions. Within forex swap processing, you can run key date and foreign currency valuations as well as display realized gains and losses.

See also: [Spot/Forward Exchange Transactions \[Page 212\]](#)

Listed Derivatives

Listed Derivatives

Purpose

Listed derivatives (*options* and *futures*) are standardized forward transactions which are traded on exchanges.

- With these transactions, the terms *purchase* and *sale* are not used to indicate a position increase or decrease: instead, they indicate the *side* in the forward transaction. As a result, here, both purchases and sales lead to a *position increase*.
- The increase and decrease of items is represented by the terms *Open* and *Close*.

The position is decreased by means of an offsetting transaction with the same class, which is marked as a *closing* transaction. The possibility of leaving the market at any time by means of an offsetting transaction, without first having to ask the counterparty for permission, is one of two special characteristics which differentiates listed options and futures from options and futures that are traded over-the-counter. The second of the two special characteristics is the fact that the contents of the contracts are firmly standardized.

Prerequisites

After creating the master data for listed options and futures, you use the *Extras* option to select the respective exchange. Before you can assign exchanges, you need to define them in Customizing by choosing *Define Exchange*.

Process Flow

There are two basic procedures:

- **Non-future-style procedure**
 - The *buyer* (long) of an option enters into no risk, he does not have to put up any collateral. For each of his long positions he receives a credit margin which is offset against his short positions.
 - The *seller* (short) has to deposit a premium margin. The margin amount is calculated so that if the position were liquidated today, the loss would be covered. If the price development is such that the loss of the seller increases, he has to increase his margin.
- **Future-style procedure**

In the case of DTB options on DAX futures and DTB options on BUND futures and BOBL futures, there is no immediate payment of the option premium. Instead, the daily settlement price is determined and the difference immediately cleared as profit and loss. Since this settlement method is similar to the procedure for futures, it is known as the future-style procedure. So that *both parties in the transaction carry a risk*, both sides are obliged to put up collateral.

Result

There are therefore four basic positions:

- **Long call**

The right to buy the underlying from the holder of the short call position at a price agreed in advance. The investor is counting on rising prices. He/she will exercise the option as

Listed Derivatives

soon as the market price exceeds the strike price, allowing him/her to buy below the market value.

- **Short call**

The obligation to deliver the underlying to the holder of the long call position at a strike price agreed in advance. (*writer of a stock call option*). The investor is counting on prices remaining steady or falling slightly, which would make the option worthless. The option is not exercised. Provided the call is covered, the investor can collect the option premium as a yield enhancement for his portfolio.

- **Long put**

The right to deliver the underlying to the holder of the short put position at a strike price agreed in advance. The investor is counting on falling prices. He/she will exercise the option as soon as the market price falls below the strike price, allowing him/her to sell above the market value.

- **Short put**

The obligation to take delivery of the underlying from the holder of the long put position and pay the strike price which was agreed in advance. (*Writer of a put option*). The investor is counting on prices remaining steady or increasing slightly, which would cause the option to expire worthless and allow him/her to collect the option premium.

Derivative OTC Interest Rate Instruments

Purpose

The position management scenario for OTC interest rate instruments allows you to enter interest rate adjustments for OTC interest rate instruments, such as variable interest rate swaps, caps, or floors.

Prerequisites

You must have processed the corresponding derivative financial transactions and integrated them into your position. You do this in the scenario for processing derivative OTC interest rate instruments.

Process Flow

You opt for an interest rate adjustment in the course of position measure planning.

You can enter the reference interest rate for the planned interest rate adjustment either manually or automatically. The reference interest rate is used to determine any interest receivable which becomes due. If the option is in-the-money, this amount is calculated automatically and you can display it in the basic overview – either as a single amount or together with previous payment flows. This procedure is executed and saved for each interest rate adjustment until the transaction expires. In the case of a cap which is out-of-the-money, there are no payments on either side.

Result

Once you have made the interest rate adjustments, you can use the scenario for processing derivative OTC interest rate instruments to navigate to the Treasury accounting functions.

Options on Interest Rate Instruments and Securities

Purpose

You use the scenario for back office processing of standard options to control liquidity, and to recognize, analyze, and hedge against interest rate and securities risks.

Prerequisites

In order to process these options, you must have created the master data already required for option trading in the relevant master data scenario.

Process Flow

1. You purchase or sell an OTC option within standard option processing. OTC options are asymmetrical hedging instruments since the associated rights and obligations are unequally distributed between the buyer and the seller.
 - In contrast to listed instruments, OTC (over-the-counter) options can have any features and are directly traded between the business partners. On buying a call, the purchaser acquires the right, but not the obligation, to purchase a certain foreign currency amount at a fixed price within a certain period or at a certain date. The seller of the call, on the other hand, has the obligation to deliver the foreign currency amount, for which he receives a premium from the buyer. Puts are processed similarly, but the aim is reversed.
 - While the trader is entering the data, he/she has direct access to the option price calculator, allowing him/her to calculate the theoretical value of the option premium. In addition to the premium, the option price calculator also delivers the most important sensitivities for the respective option. The option premium can either be entered as a percentage of the underlying transaction (in basis points) or as a fixed amount.
 - When the contract is concluded, the cash flow only consists of the premium. You can represent both European- and American-style options in the SAP R/3 System and can either physically exercise the option or choose cash settlement. The impact of the deals concluded on liquidity is immediately visible in Cash Management.
2. In addition to the functions directly related to the option contract, there are supporting functions for correspondence and confirmation management. The system prepares the transaction data such as activities, flows etc. and creates preliminary letters of confirmation ready for editing. You have the possibility of printing out this data, or of faxing it directly from the system. You can also create S.W.I.F.T. files for option contracts, so that, with the help of a user exit, you can benefit from matching systems for outgoing confirmations, such as FX-Match. When you are defining the correspondence, you can specify that a counterconfirmation from the business partner should be received before further processing takes place. The processing functions incorporate a tool for monitoring counterconfirmations that are overdue.
3. Afterwards, as in the trading area, you have the possibility of calling up information on entered transactions and making any adjustments that might be necessary. You can use the settlement function to control and check the transactions and can add any information that might be missing such as payment instructions or posting specifications. When you save, the system changes the activity category of the transaction, thereby recording the fact that it has been checked and edited in the back office area.

Options on Interest Rate Instruments and Securities

4. Before the transactions are transferred to accounting, you can make use of a netting function for financial transactions. The netting function allows you to summarize transactions from the areas money market, options, and derivatives, and settle them together. One of the main prerequisites for this is that the transactions were created in the same company code, with the same business partner, and have the same currency and payment terms.
5. After the transactions that were entered in trading have been checked and completed in back office processing, they are finally processed in the accounting area. Here, you find functions for transferring the data to Financial Accounting, such as posting reports or postings within the framework of position management; functions which stem from Financial Accounting rather than Treasury. You will also find functions ensuring that financial transactions and positions are correctly taken account of in closing work, including a function for the periodic accrual of revenues and expenses, and valuation functions. In the option trading area you can run key date and foreign currency valuations as well as display realized gains and losses.

Mortgage Loans

Purpose

You use the product category "mortgage loan" to map loans given and loans taken that are secured by a charge over property.

This scenario takes you through the various stages in the loan process for new business, from the initial inquiry through to the legally binding contract and disbursement.

Prerequisites

To speed up the entry of the conditions for loans given and avoid errors, you can define one or several condition tables.

Process Flow

Transaction management offers functions for processing new mortgage loans, from the first contact with the interested party, to conclusion of the contract and disbursement. The following process flows apply:

- For mortgage loans given you can use the functions for interested party management to enter basic information about a potential customer without actually creating a contract. This might include the capital required, the purpose of the loan, how the potential customer contacted you and other internal information, such as a reservation period, or a rejection date and reason.
- You enter more concrete loan data in the relevant loan status. In **application status** you can enter or assign all the data for a potential contract, including general contract data, partner information, collateral objects and other collateral.
- For mortgage loans given, you can also incorporate a **decision-making** stage in the process flow between the entry of an application and creation of corresponding contract offers. The decision-making function allows you to review mortgage loan applications with respect to the collateral value and the purchase price of the object as well as the credit standing of the borrower, and convert an application into one or more offers or contracts
- In **offer status** you make changes to the data already entered in application status and enter additional details. At this stage you set down concrete conditions for the mortgage loan. New business tables for loans given help you to simplify and speed up the entry process.
- Once the loan reaches **contract status**, any missing data must be added. At this stage, all the main loan data must be entered in the system. At this point, you can still enter regulatory reporting data (Germany). A correspondence function is available in the Loans area for generating the contract to be sent to the borrower.
- There are a wide range of options for structuring disbursements, including full or partial disbursements, gross and net procedures and functions for calculating the discount and the commitment interest. You can apply a release procedure to the various stages in the process flow, including the disbursement stage. In other words, you can specify that disbursements must be released before the payment is made.
- Upon disbursement, the accounting information is transferred to Financial Accounting. The accounting side of loan processing is supported by functions for posting interest payments and repayments. For incoming and outgoing payment activities, the Treasury applications

Mortgage Loans

use the Financial Accounting functions. The accounting area within Loans Management also includes functions for accrual/deferral of interest and discounts, balance sheet transfers and valuation.

- The position management options for mortgage loans include functions for rolling over loans (individual rollover or mass processing), transferring contracts or entering unscheduled repayments.

Refinancing Loans

Purpose

Refinancing loans are long-term, large-scale loans that are similar to bonds. They are usually granted to financial institutions and incorporate price gains or losses.

You use this product type to process borrower's note loans that are "not traded".

Process Flow

You enter refinancing loans in contract status. All the relevant functions for creating contracts, defining conditions and processing contracts are supported.

You can use the same accounting and position management functions as for [mortgage loans](#) [Page 221]. In particular, there is a function to write back accruals and deferrals automatically and functions to calculate and post price gains and losses.

Policy Loans

Policy Loans

Purpose

In most cases, policy loans are offered by insurance companies at current capital market conditions. A redeemable life insurance or accident insurance policy held by the borrower serves as the loan collateral.

Prerequisites

To speed up the entry of the conditions and avoid errors you can define one or several condition tables.

Process Flow

Policy loans given can have the statuses *offer* and *contract*.

As for mortgage loans, managing policy loans involves recording the basic data that describes and classifies the loan as well as the individual contract conditions. In addition, you enter data about the insurance policy that serves as collateral for the loan.

1. The **contract offer** function allows you to enter all the data, terms and conditions of a potential loan contract in the system as an offer, without creating a contract. Within one offer, you can create several offer variants with different conditions. The borrower can then choose the most suitable alternative. The conditions the borrower accepts form the basis for the contract.
2. When the **contract is concluded**, you can convert the contract offer directly into a contract. At this stage, you can still make any necessary changes. A loan has contract status when the conditions agreed with the customer are final. If you convert a contract offer into a contract, the data you entered for the contract offer is transferred into the contract. If the collateral for the loan was not entered with the offer, you can enter the data for the insurance policy when you create the contract or when you transfer an offer to contract status. When you create a contract, you can branch directly to the function for creating collateral. Alternatively, you can assign an existing collateral item to the policy loan.
3. In addition to the disbursement function for policy loans, you can use the same accounting and position management functions as for [mortgage loans \[Page 221\]](#).

General Loans

Purpose

You can use the product category *General loans* to map loans given and taken that are not covered by the other product categories, such as loans to employees and inter-company loans.

Prerequisites

- For loans given, you have defined a condition table with standard conditions. This ensures that entering standard conditions is fast and error-free when you create a loan.
- You have defined payment details for the business partner in the standing instructions. If you enter a loan that is to be posted to G/L accounts (rather than to a customer account), these payment details are entered as the payment details for the loan.

Process

General loans can have the statuses *application*, *offer* and *contract*. For the most part, the procedure is the same as for [mortgage loans \[Page 221\]](#). However, the decision-making function is not supported for general loans.

- When you create a loan, you define the business partner in the corresponding role (borrower or lender). When you enter the loan conditions, you can choose the relevant conditions from the condition table. If you create a loan that is not to be posted to a customer account, the system takes the payment details you have defined previously for the business partner in the standing instructions.
- All the functions for managing collateral are also available for general loans. You can enter the contractually agreed collateral from the loan itself, or assign collateral that has already been defined in the system to a loan contract. Object management is not supported for the product category "General loans".
- The accounting and position management functions described under *Mortgage Loans* are also available for general loans. Loans taken are only posted to G/L accounts. To process the payments for loans not posted to customer accounts, you use the payment program for payment requests.

Borrower's Note Loans

Borrower's Note Loans

Purpose

Borrower's note loans are long-term, large-scale loans that are similar to bonds. For example, large companies might take out borrower's note loans with insurance companies and other institutional investors.

The system distinguishes between "traded" borrower's notes and those which are "not traded".

To represent a company's capital investment, you can map loans given in the form of so-called "traded" borrower's notes using special order management functions. In order management you can enter purchase and sale orders. Borrower's notes that are "not traded" are represented in the system using a different product type, as [refinancing loans \[Page 223\]](#).

Process Flow

1. New transactions for traded borrower's notes can be represented from the "reservation" stage using order management. This allows you to enter the key contract data for a borrower's note loan in advance without actually creating a contract.
2. By activating the reservation, you can then create a contract. The data already entered in the reservation is transferred to the contract and you can enter additional order data. In most cases, contracts are created when a borrower's note is purchased. To reflect this, the system allows you to create a purchase order and a contract in one step.
3. If the original buyer of the borrower's note wants to assign the note to another party, you enter a sale order.
4. You use the order settlement function to post the order data, thus settling the order. The purchase and sale data is then transferred to Financial Accounting.

Cash Position

Purpose

The cash position provides information on the current financial state of the bank accounts. It is the starting point for cash concentration in which the balances from various bank accounts are concentrated in one target account, taking minimum balances and payment optimization into consideration.

Process Flow

The cash position provides information, by value date, on the short term liquidity situation in bank accounts. It usually covers a period of zero to five days. This overview covers the cash management-relevant G/L accounts, particularly bank accounts and bank clearing accounts. It includes actual FI postings, along with manual planning options (payment advices) and Treasury transactions. In summary, the cash position records the most important transactions affecting the short-term liquidity of your business.

- Bank balance
- Checks posted to bank clearing accounts
- Outgoing bank transfers posted to bank clearing accounts
- Advices received re incoming payments
- Incoming payments with value dates
- Expected payments in or out arising from financial investment or borrowing activities in Treasury Management

Result

The cash position offers the current overview, by value date, of the bank accounts. The integration with payment advices means that the survey of short-term movements in liquidity is complete. It is the most important tool for cash managers. It is the starting point for cash concentration in which the balances from various bank accounts are concentrated in one target account - for example, the account with the most favorable conditions - taking minimum balances and payment optimization into consideration.

Liquidity Forecast

Liquidity Forecast

Purpose

The liquidity forecast integrates expected payments in and out made in financial accounting, procurement, purchasing, and sales and distribution, with a medium-to-long-term planning tool. It contains relevant information from subledger account on the debit- and credit-side payment flows. The cash position and liquidity forecast contain foreign currency balances and open items.

Process Flow

In addition to the short-term liquidity position in your bank accounts, illustrated in the cash position, a medium-term liquidity forecast is very important. From a commercial point of view, this means a detailed evaluation of subledger accounts. This is based on the expected payments in and out on both the debit and credit sides, along with the relevant open items.

Vendors and customers are split into planning groups that reflect particular characteristics, behaviors, or risks. Planning groups answer your questions about which customer or vendor group is responsible for a particular balance.

Information on planning groups originates from subledger accounts. Incoming and outgoing payments are classified by the probability of the funds coming in or going out, the amount in question, or the type of commercial relationship. Examples of planning groups included domestic vendors, foreign customers, or related companies.

Like the bank accounts in the cash position, the planning groups are supplied with data from FI postings and planning memo records (planned items). Purchase orders from Materials Management (MM) and orders from Sales and Distribution (SD) may also be included.

Financial Budgeting

Purpose

You use financial budgeting to scrutinize medium- to long-term term movements in liquidity. You structure the cash inflows and outflows expected per period, according to what caused them or the note to payee. This structuring takes account of the data origins on the one hand and, on the other, enables you to assess risk. Identical structuring of the actual and commitment figures supports your analysis of plan/actual variances.

Prerequisites

Financial budgeting in the SAP system has its own organizational unit, called the "financial management area" (FM area). In the FM area master data, you stipulate the currency and periods used for financial budgeting. You assign the FM area to one or more company codes, to connect it with actual data. The actual figures are then also displayed by period, in the currency stipulated.

Commitment items, which describe where payments have come from or what they are used for, are created in the FM area. We recommend that you do not create too detailed a structure. You can use hierarchies for reporting, but planning and actual data processing take place at the lowest level.

As the functions in SAP financial budgeting are still limited, actual planning is often carried out in a PC program, taking account of the commitment item structure. In such cases, the SAP system supplies actual data only. If you want to use the SAP planning functions, you must create a plan profile containing the basic settings needed for planning, then enter the profile in the FM area.

Process Flow

You enter the planned payments per commitment item and period. You classify the items as expenditure or revenue items; the system uses this classification to determine automatically whether each item is an incoming payment or an outgoing payment. You have the option of entering annual values and having the system break them down into period values; this is one of a number of tools for creating and changing the plan.

You can also have a number of different plans in parallel in the system. You use the plan version to distinguish between them.

Result

The financial budget you have produced can be displayed in the information system and compared with actual values.

Evaluating Actual Data

Evaluating Actual Data

Purpose

The actual evaluation is, on the one hand, a look back that gives you information on what caused payments in and out and what they were used for. On the other hand, payments still expected (per the documents posted in Financial Accounting and Materials management are broken down per these items. Overall, the evaluation is a tool for checking your financial budget and analyzing variances.

Prerequisites

In addition to the commitment items already in place for planning, you need to create more commitment items, which will be used to determine actual data. The reason for this is a technical one. A commitment item must be entered in every G/L account in every company code where you want to determine actual values. The commitment items thus act as a means of classifying G/L accounts.

Special balance commitment items are defined in bank accounts and other accounts handling liquid funds. The document lines posted in these accounts are the actual values for Cash Budget Management. The commitment items of types source and application, already created for planning, are used in the matching G/L accounts in the relevant company code.

Cash Budget Management is designed to monitor payment flows according to what causes them and what they are used for. To this end, a third group of commitment items is required. You enter special clearing commitment items in the clearing accounts managed on an open item basis. The posting "chains", from the accounts for liquid funds to the accounts with source/application information, run through these clearing accounts. The clearing commitment items then bridge the gap between the funds balance and the source/application when actual values are recorded. Examples of such clearing accounts would be the vendor/customer reconciliation accounts.

Some clearing accounts from Accounting may already have a commitment item contain source or application information. This can be particularly useful in the case of items containing fairly general data.

However, you must still create plannable items for the G/L accounts that do not already have them, and others items to display actual values for payments where the system could not trace the source/application.

Process Flow

If Cash Budget Management was active in the company codes, commitment and actual values are automatically recorded for the documents. As a correction measure, you can create transfer documents outside FI, which you can then use to move amounts between different commitment items.

Result

You can display the commitment and actual data in the information system, where you can also compare them with the planned values.

Market Risk Management

Purpose

The **analytical capacity** of the SAP Market Risk Management (MRM) component meets the demands placed on a modern risk management system. You can quantify and analyze your market risk by using comprehensive position and risk evaluations based on either **current market data and actual positions** or **simulated market data and fictitious financial transactions**.

Several methods and procedures are available: You can run a **mark-to-market valuation** to determine the current market value of your operative business transactions and financial transactions and to calculate **future values** and the **differences to market values**. The **effective price** and **effective interest rate** functions give you performance figures for a selected position. Key risk figures allow you to assess the extent of your risks and your ability to respond to the market parameters that affect prices. They include **value at risk (VaR)**, **risk exposures** and **interest rate and option sensitivities**. In the **cash flow view** you can see all the cash flows resulting from your operative business and financial transactions (including flows from options and instruments with variable interest rates).

The results of the various evaluations are available as standard reports that you can use as a **basis for decision making** for risk control. You can also create your own reports using the SAP **drilldown reporting** function.

Prerequisites

Controlling market risks is a complex process involving data collection, risk measurement, risk analysis and risk simulation as well as making decisions on the use of financial instruments. This process has to work in unison with other treasury and corporate functions (financial accounting, controlling, payment transactions). In view of the complexity of the control process and the high level of interaction involved, a powerful support tool is indispensable.

The key requirements for such a tool are:

- **Integration** (availability of data on underlying and hedging transactions from various sources): MRM is fully integrated in the R/3 System and therefore has direct access to the operative data of the company.
- **Analysis/methodology** (diverse evaluations, useful key figures): MRM provides extensive position and risk evaluations for current market data and actual positions as well as for simulated market data and fictitious financial transactions.
- **Flexibility:** (of data selection and display). MRM is flexible enough to select and assign positions according to different criteria and to display the results in the level of detail you require. This flexibility is achieved with features like the R/3 drilldown reporting tool, which allows you to tailor reports to fit your individual needs.

Process

To keep market risks under control, you must be able to gain an up-to-date overview of the relevant risks at all times (What types of risk is the company exposed to? What is the extent of these risks?). This demands a powerful, integrated data management system. Such a system must be capable of recording all the current, future and potential company cash flows and aggregating them to produce meaningful risk positions. In addition, it must allow you to

Market Risk Management

incorporate data from individual transactions (such as conditions or structure characteristics) in your risk assessments.

As part of an integrated data management system, MRM offers all these features.

Key components used in conjunction with MRM are Financial Accounting and Treasury, and since the Logistics and Human Resources components are also integrated, the data is consistent across the company.

For informed risk management, access to a complete set of up-to-date operative cash flows and all effected financial transactions is vital. In order to determine and manage risk, both these areas need to be brought together.

Access to current market data (stock prices, exchange rates, reference interest rates, volatilities, swap rates, and so on) ensures that you have the latest information upon which to base your decisions. The R/3 System allows you to import the following market data:

- Exchange rates
- Security prices
- Reference interest rates
- Indexes
- Forex swap rates
- Currency volatilities
- Index volatilities
- Security volatilities
- Interest rate volatilities

Because it is no longer feasible to enter current market data for valuing financial transactions manually, particularly when it comes to derivative financial transactions, MRM provides access to Treasury's digital real-time datafeed connection. The datafeed supplies up-to-the-minute market data for your evaluations.

Result

The following section illustrates how MRM can be used and gives you an overview of the main risk measurements offered by the reports.

- **Mark-to-market valuation:**
 - Position valuation

Values the position for a group of financial transactions. You can calculate the current net present (or future) value for each of the selected financial transactions, based on different market scenarios. In addition, you can calculate interest sensitivity figures and access detail information for the individual transactions.
 - Matrix evaluation

Assesses the sensitivity of a portfolio of financial transactions to changes in individual risk factors. You can calculate the NPVs for a group of financial transactions, varying two of the risk factors (interest rate, exchange rate, volatility) each time. Moreover, you can use different market scenarios and view the sensitivities in a matrix.

– P/L evaluation

Assesses the sensitivity of a portfolio of financial transactions on the basis of the gains and losses for a certain period. By looking at the gains and losses for different periods (which you define yourself), you can draw conclusions about the extent to which the different circumstances affect your portfolio. You can also run the evaluation with different scenarios.

- **Value at Risk (VaR)**

Calculates the maximum expected loss within a certain period with a certain probability. A risk hierarchy is used to calculate an aggregated risk figure on the basis of historical gains/losses and volatilities and correlations from historical time series.

- **Exposure (currency and interest rate exposure)**

Calculates the open position that is exposed to the currency or interest rate risk. The system calculates the net present value of the future cash flows for a selected position, taking into account payments that are subject to the risk factors currency (currency exposure) and interest rate (interest rate exposure). The open position is determined by setting the underlying transactions and hedge transactions off against each other within a subperiod. The interest rate risk is usually expressed as a basis point value (BPV). You can also simulate market scenarios.

- **Cash flow analysis**

Gives you an overview of future payment flows as a basis for liquidity control. The system displays the future payment flows for a certain period (with details for subperiods) in transaction currency. Payment flows based on variable interest rates or options are valued using forward data. You can also take market scenarios into account.

- **Sensitivity analysis**

Assesses the risk of financial transactions by measuring the sensitivity of these transactions to changes in market parameters. Analyzes the sensitivity of a financial transaction to changes in a market parameter. You call up option sensitivities via the option price calculator, and interest rate sensitivities via the mark-to-market position evaluation.

- **Planning / analysis**

Allows you to define fictitious transactions and analyze the effect of these transactions on a selected position, taking market scenarios into account. This helps you to select suitable hedge transactions. You can display the value for a selected position (as a net present value, effective price, effective interest rate, cash flow or exposure) for a certain date in the future and see the effect of the fictitious transactions you have defined on the real value of the position. You can incorporate both current forward data and different scenarios.

- **Tools**

A range of tools are available for entering and managing financial transactions and for making data available for risk calculations.

- **Flexible reporting**

Allows you to create your own reports (in addition to the standard reports). You can incorporate both risk data and data from the rest of the SAP system in drilldown reports.

Market Risk Management

By defining rules, you can also generate scenarios in regular reports (such as a daily risk report).

Revenue and Cost Controlling

Definition

Revenue and Cost Controlling provides data that supports decision making in the organization. This data primarily comprises costs and revenues.

After preparing the appropriate master data and basic data, you plan and record the costs and revenues. You then determine the variances between the planned and actual costs or between the target and actual costs. *Revenue and Cost Controlling* processes also include reporting to support control tasks in response to variances.

Use

You can implement *Revenue and Cost Controlling* in accordance with your particular requirements in the R/3 System using all commonly used cost accounting methods.

Revenue and Cost Controlling is comprised of the following areas:

Overhead Cost Controlling

Overhead Cost Controlling is concerned with the planning, assignment, and control of overhead costs. This area is subdivided into *Cost and Revenue Element Accounting*, *Cost Center Accounting*, and *Internal Activity Allocation*. It is supplemented by *overhead orders* and *overhead cost projects*. Optional integration of *Activity-Based Costing* enables you to manage the costs of processes and assign them to downstream work areas.

Product Cost Controlling

The *Product Cost Controlling* component assigns the costs incurred in the organization to units of output (such as products or orders).

Product Cost Controlling includes the subcomponents *Product Cost Planning*, *Cost Object Controlling*, and *Actual Costing/Material Ledger*. These components can:

- Optimize the cost of goods manufactured for your products, calculate production variances, allocate these to profitability analysis
- Determine price floors for products (such as for setting prices)
- Value the inventories of finished and unfinished goods
- Determine the cost of sales for contribution margin accounting

Profitability Analysis

Sales management using the *Profitability Analysis* application component provides all the information you need to manage your sales activities. *Profitability Analysis* is used to analyze market segments. It is structured according to products, customers, orders, and any combinations of these with regard to their profit margin or contribution margin.

The aim is to support the areas of Sales, Marketing, Product Management and Enterprise Planning with information for Controlling and decision making from a market perspective. The result is transferred to Profitability Analysis (CO-PA) using only cost-of-sales accounting.

Two types of profitability analysis are supported:

Use

- **Costing-based profitability analysis** structures the costs and revenues according to user-defined value fields and costing-based valuation approaches. Complete profitability reports are possible at any time on short notice.
- **Account-based profitability analysis** uses accounts with an accounting valuation approach. Here the main attribute is the use of cost and revenue elements. Profitability reports that are permanently reconciled with financial accounting are possible with this type of profitability analysis.

The two types of profitability analysis can also be used in parallel with each other.

For managing the profitability of internal organizational units, you should use *Profit Center Accounting*.

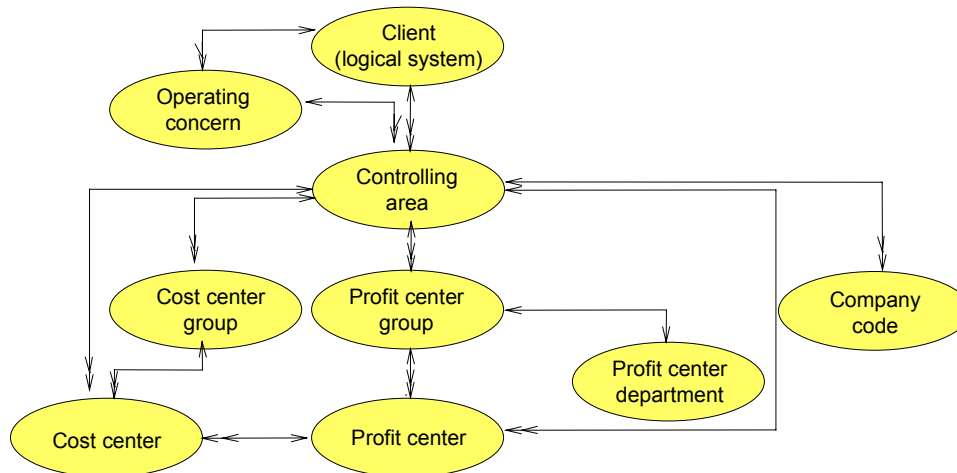
You can use any of the following R/3 components with *Revenue and Cost Controlling* in any combination:

SAP Component		Function
Overhead Cost Controlling (CO-OM)		Plan, assign, control, and monitor overhead costs
	Cost Element Accounting (CO-OM-CEL)	Manage cost elements
	Internal activity assignment (CO-OM-ACT)	Manage and assign activity types
	Cost Center Accounting (CO-OM-CCA)	Create cost centers, plan and assign costs on cost centers, reporting
	Overhead Orders and Overhead Projects (CO-OM-OPA)	Create overhead orders and accrual orders, plan and settle orders, reporting
	Activity-Based Costing (CO-OM-ABC)	Structure, plan, and assign processes
Product Cost Controlling (CO-PC)		Cost products; perform preliminary costing, simultaneous costing, and final costing
	Product Cost Planning (CO-PC-PCP)	Determine cost of goods manufactured and cost of goods sold for product units; analyze product costs
	Cost Object Controlling (CO-PC-OBJ)	Determination and monitoring of costs; assignment of costs to activity units
	Actual Costing/Material Ledger (CO-PC-ACT)	Material valuation

Use

Profitability Analysis (CO-PA)		Valuate sold products for sales controlling; transfer overhead costs and variances for profitability analysis
Profit Center Accounting (EC-PCA)		Calculate operating results for individual profit centers

Revenue and Cost Controlling



[Legend \[Ext.\]](#)

Sales and Profit Planning and Cost Planning

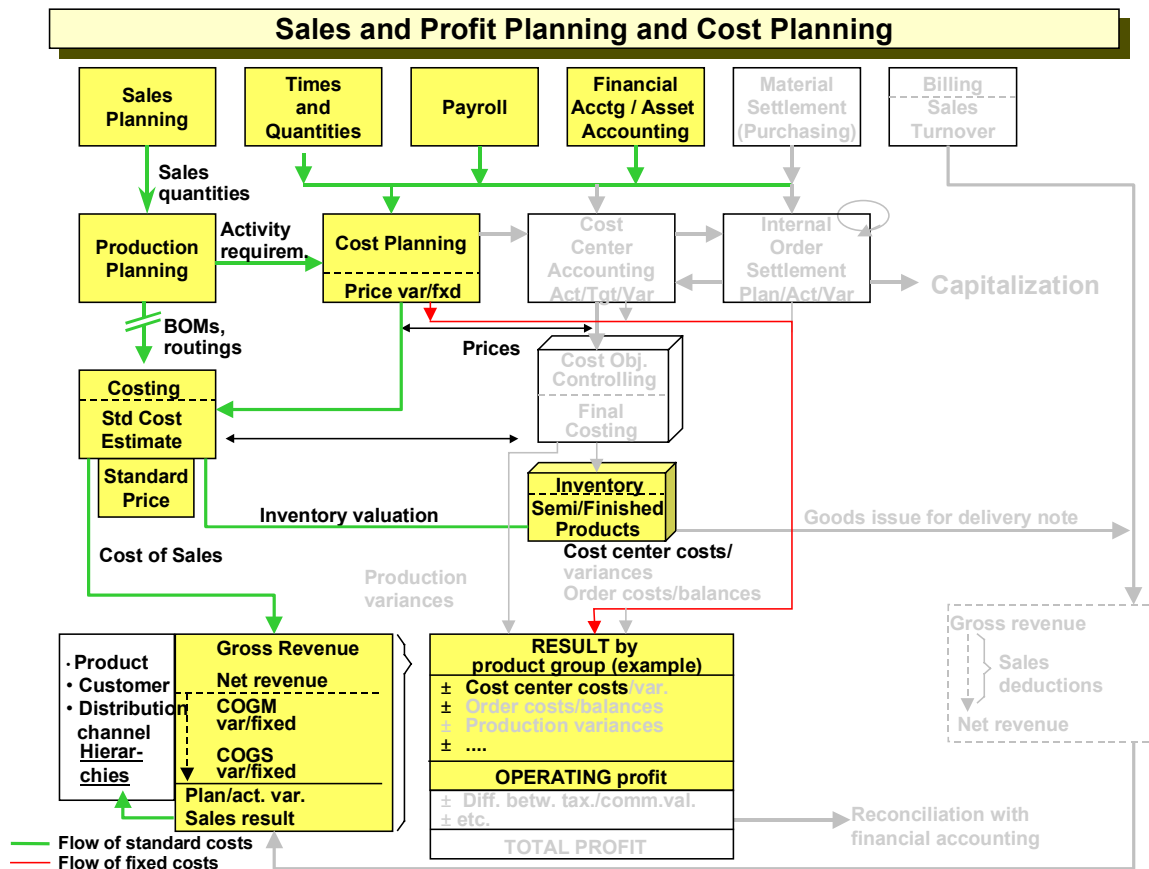
Purpose

The planning of activity quantities, costs, and revenues is the basis for efficient cost management. Planning is used:

- As the starting point for target cost determination and thus as the basis for target/actual comparisons
- To provide a measure of organizational performance
- To provide targets for cost center managers and for the product managers from Production (*Product Cost Controlling*) and Sales (*Profitability Analysis*)
- As a control method for the persons responsible for cost centers, product costs, or profitability analysis
- As a basis for the preparation of planned cost records from analytical planning
- As a basis for the valuation of activity input quantities in the production process (standard cost accounting)
- As a basis for allocating the standard cost of sales to *Profitability Analysis*
- As a basis for inventory valuation of products that are carried with standard prices

You can implement planning flexibly with the R/3 System using all current cost accounting methods, such as flexible or fixed standard costing.

Sales and Profit Planning and Cost Planning



Prerequisites

A prerequisite for planning is the processing of the necessary master data. In this phase, you define the following for your organization:

- Cost and revenue elements
- Cost centers and activity types
- Business processes
- Internal orders
- Statistical key figures
- Market segments (characteristics) and key figures (value fields)
- Profit centers

To ensure the acceptance of the planning in the organization, you should coordinate this together with the appropriate responsibility areas (cost center, product managers, etc.). If, for example, the actual values on a cost center differ from the plan or the target, the responsible cost center manager can be aware of this variance.

Sales and Profit Planning and Cost Planning**Process Flow**

1. Using the sales plan in *Profitability Analysis*, generate the warehouse and production planning of the logistics areas.
2. As the basis for quantity-based activity planning, define the plan operating level for all primary activity types (activity type planning).
3. To be able to produce the planned production quantities, the system transfers the activity and material requirements for production to the primary cost centers or business processes. It uses the BOMs and routings to do this. The planned activity requirements for production are compared on the given cost centers as scheduled activity of the plan operating rate and reconciled.
4. Plan the activity quantities for all secondary activity types (such as workmen's hours). You have now determined the net requirements for primary and secondary activity types.
5. Plan the primary and secondary overhead costs. Note the business usage of planning techniques and implement the planning aids provided by the system (planning copy, plan revaluation, plan reconciliation).
For example, the time-consuming calculation and measurement involved with ABC analysis is only justified for the few "A" cost elements on a cost center, which often make up 70% of the cost volume. The rest of the cost volume is distributed over a variety of B and C cost elements, for which you can reduce planning time by using planning aids.
6. Determine the plan activity price for each cost center / activity type. This fixes a target for the procurement side and enables the analysis of variances by quantity and price variance portions for all evaluations. These activity prices are used for activity assignment and for the valuation of the quantity structure in costing.
The R/3 System now uses the costing result for each product for the valuation of the previously planned product sales quantities at standard costs.
7. Lock the current plan version.
This locks the plan data against further changes. Planning is completed.

Result

The plan data is now available as a data basis for the periodic plan/actual or target/actual cost comparisons.

Reporting tools are available even at the planning stage. This means that the requirements for tracking the value flow parallel to the logistical quantity flow are met at all times.

Actual Cost and Revenue Allocation

Purpose

Regardless of the cost accounting method used, the allocation of actual costs and revenues forms a basic component of every cost accounting method. Using the SAP R/3 System means that the allocated costs and revenues are generally available immediately for evaluation purposes in Controlling.

The transfer of data from the upstream work areas and applications allows you to access the source document from the Controlling report at any time. Since the upstream work areas are modules of an integrated, interface-free system, the tasks of plausibility checks, formatting, and summarization are largely unnecessary.

Prerequisites

- The master data required for the entry of actual costs has been created.
- If you are using standard cost accounting, planning data must exist.
- If non-SAP systems are being used in the upstream systems (such as Materials Management, Payroll Accounting, and Financial Accounting), interfaces must have been defined from the upstream systems.
- You have defined account assignment guidelines, both for account assignment of primary costs, as well as for the allocation of secondary costs.

Process Flow

1. You enter overhead costs on the corresponding overhead cost objects (cost centers, business processes, internal orders). In the overhead cost area you enter actual costs using the primary cost transfer of:
 - Payroll costs
 - Travel costs
 - Material consumption costs
 - Costs for services
 - Cost of capital
2. You can allocate the costs from internal activities using direct activity allocation. This applies to both the allocation of secondary costs from a service cost center to a primary cost center (such as allocation of tradesperson costs) as well as to the allocation of secondary costs from a primary cost center to a cost object (such as the allocation of minutes of production to a production order).
3. In Profitability Analysis, the system determines the cost of sales through the valuation of the sold articles at standard manufacturing costs from the standard cost estimate. The system compares these costs with the revenues to be credited to the article, less any sales deductions.
 Direct account assignments of special direct cost of sales can be allocated to Profitability Analysis from Cost Center Accounting, Financial Accounting, or Materials Management. For customer-specific production you can also allocate actual costs and actual revenues to sales orders.

Actual Cost and Revenue Allocation

To be able to determine quantity variances and price variances, it is necessary to assign both the costs and the consumption quantities to the object at which the costs originated.

Result

After locking the posting period against further actual postings, these actual postings are then available as a data basis for the period closing operations. Recording actual quantities and actual costs provides the basis for determining the operating rate on the corresponding cost centers or cost objects, and thus the basis for determining the target costs. This, in turn, forms the basis for plan/actual or target/actual comparisons.

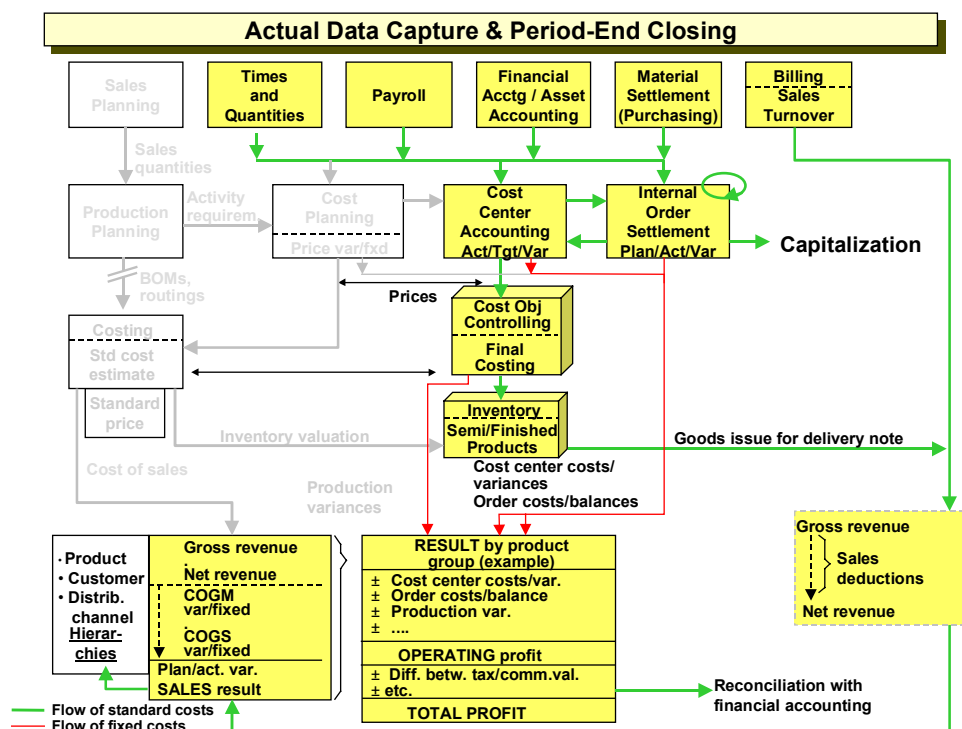
You can also access the appropriate reporting tools at any time during the course of actual data entry. This means that the SAP R/3 System fully meets the requirements of tracking, at any time, the value flow parallel to the logistical quantity flow.

Period-End Closing (CO)

Purpose

In most cases, monthly settlement is appropriate for the purposes of *Overhead Cost Controlling*, final costing, and the preparation of reconciliation data for *Profitability Analysis*.

SAP provides you with various tools for the period-end closing process so that you can assign periodically incurred costs, determine target costs, and determine variances. You can implement these instruments flexibly in the R/3 System within the framework of your overall business concept.



Prerequisites

After locking the posting period for further actual postings, these actual postings are then available as a data basis for the period closing operations. The entry of actual quantities and actual costs provides the basis for determining the operating rate on the corresponding cost centers or cost objects and thus of the target costs. The target costs form the basis of the primary cost management instrument: the target/actual comparison using targeted variance analysis.

Process Flow

In the period-end closing process, periodic allocations occur between *Cost Center Accounting*, *Activity-Based Costing* and *Internal Orders* on the one side, and *Cost Object Controlling* and *Profitability Analysis* on the other.

Period-End Closing (CO)

1. In *Overhead Cost Controlling*, you first assign the overhead costs.
2. If you don't require proportionalization of the fixed costs, you can predistribute the fixed costs in *Cost Center Accounting*.
3. After optional actual activity price calculation, you determine the operating rate of all planned activity types for the cost centers on the basis of the plan data, and the target costs on the basis of the proportional costs. The variances are determined on the basis of the target costs and the actual costs.
4. The variances are transferred to *Profitability Analysis* together with the remaining fixed costs in *Cost Center Accounting*, using the assessment method.
5. You can also settle the balances between the accrued and balance sheet value approaches to accrual objects (usually to accrual orders).
6. In *Cost Object Controlling* you first execute periodic assignment of overhead costs for the production processes. This approach largely replaces the application of overhead to direct costs, which often does not reflect the true cost source.
7. If you have already executed actual activity price calculation in *Cost Center Accounting*, you have the option of revaluating the activity relationships between cost centers and cost object with actual activity prices.
8. You then assign any overhead to your orders.
9. Any inventory value remaining in production is displayed as work in process and posted correspondingly in *Financial Accounting*.
10. After final costing or the periodic target/actual comparison of the cost of goods manufactured, you can determine production variances. These variances can be analyzed and settled to *Profitability Analysis* to determine the profit for each product.

All quantities, costs, revenues and variances determined are available as key figures for business control. In planning, you ensure acceptance of the affected responsibility areas (cost center managers, product managers, etc.). Only in this way is a cost center manager likely to accept the variance from the plan or the target produced on their cost center as belonging to their responsibility area, and be prepared to improve the situation.

Result

The plan-based value approaches created by Cost and Revenue Controlling form the basis for efficient cost management in all areas of an organization. Target/actual comparisons on cost centers, plan costing, final costing and results analysis provide you with essential information. Introducing suitable measures for variances from target or plan values enables you to effectively control business process flows.

Enterprise Controlling

Definition

The enterprise process area, *Enterprise Controlling*, aims to manage the enterprise as a unit in order to achieve the goals that have been set.

Essentially, three functions are required:

- **Data sources** from various sources are accessed (internal and external, from all departments, from various systems etc.). This results in a homogenous information basis which can be reported on. The organization must determine how the data basis is to be defined, and also how its compilation logic is to be defined (in front-end systems or in the interface).
- After the data is compiled, it can be **processed** or **reported** on. Simple cross-structure evaluations (for example, company comparisons and customer evaluations) are required just as calculations (consolidated financial statements, group costing) are needed for special functions. These special functions include elimination of interunit sales and profits, consolidation of investments, elimination of interunit payables and receivables, currency translation etc.
The users of this reporting are the Controllers and the enterprise management. The reporting should be able to handle both ad-hoc queries and enterprise-specific form-based reports.
- **Enterprise Planning** establishes the strategic and operational goals of an enterprise. Variances are identified by comparing actual and planning data. These variances serve as control signals that trigger corrective intervention in the process flow. In addition, internal profitability can be determined for profit centers. Enterprise Planning, therefore, supports internal evaluation of enterprise units or subunits.

Use

Consolidation

The subcomponent **Consolidation** consists of general consolidation functions. You can use it for both internal and external reporting. Besides the legally required consolidated financial statements at company level, other integrated application areas include a business area consolidation, a profit center consolidation or also a consolidation based on data from a group-wide product profitability analysis. The advantage is in a rule-based reconciliation between the values of an internal and an external consolidation.

Business Planning

You can use *business planning* for both strategic and operational planning:

- **Strategic Business Planning**
The goal of strategic business planning is to determine medium and long-term (1 to 5 years) preliminary planning data on the development of the enterprise. Operational business planning is carried out periodically – usually in one-year intervals – on the basis of strategic business planning.
- **Operational Business Planning**
[Operational business planning \[Page 248\]](#) provides a flexible guide to planned (output and consumption) quantities and other values derived from these quantities. Operational business plans cover defined periods (usually one year).

Enterprise Controlling

The enterprise planning values proposed and the measurement of success are negotiated with the people responsible. Their participation in enterprise planning is needed to ensure that business activities and cost efficiency in the various enterprise areas are under effective control.

- Operational enterprise planning begins with the sales plan, which defines what quantities should be sold in the planning period, or with the sales information system. The planned sales quantities are passed on to production planning. Operational business planning is affected by financial planning, which can also have a restrictive impact on production planning and cost center planning.

Executive Information System

In the Executive Information System, you can define enterprise-specific data structures based on multidimensional evaluation views. Data collection programs are available for most of the R/3 and R/2 components. You can also transfer data from non-SAP systems. You can use numerous functions to process the data and thus homogenize it (see *Definition* above). A complete graphical interface is available for presenting the data to management. Hierarchy processing and elimination functions enable easy-to-use consolidation functions.

Operational Business Planning

Purpose

The purpose of operational business planning is to set medium-term goals based on the organization's strategic targets.

Operational business planning sets flexible targets for planned activity and consumption quantities and values derived from these for clearly defined periods of time (usually one year).

The aims of operational business planning are:

- To plan the organization's future for a specified period of time. The focus is on defining precise targets and goals, taking into account both organizational and market conditions as well as the organization's strategic plan.
- To define measures for controlling business practices during the current accounting period. Planning should take place dynamically so that targets can be adapted to changing conditions.
- To check economic efficiency following the accounting period by comparing plan and target values with actual values.
- To form a basis for valuating business activities that is independent of incidental fluctuations.

Prerequisites

The targets and the planned degrees of goal accomplishment must be coordinated with the persons responsible. Business practices in the individual divisions can only be steered effectively and economic efficiency can only be checked adequately if these individuals are involved in the planning process.

The starting point for operational business planning is to create a sales plan, where you decide what quantities you expect to sell in the period being planned.

The principal functions in operational business planning are covered by the planning functions of the Controlling (CO) and Production Planning (PP) modules. The integration of the R/3 System ensures that values and quantities are calculated in a consistent manner throughout the system.

Process

You can create a sales plan either in Profitability Analysis or in the Sales Information System. Then you can transfer the planned quantities to Production Planning.

There you determine the required capacities and the required quantities of raw materials and operating supplies. The activities and activity requirements planned in the production plan are then passed on to the cost centers, which need to provide these activities in the form of activity units. In addition, the managers of the cost centers need to plan the costs they expect to incur and the services they expect to require from other (secondary) cost centers on the basis of the planned capacities and quantities.

Plan price iteration, which is the final step in cost center planning, is then carried out to determine planned activity prices. These are used to value the quantity structures in standard costing. The costing results for the products, for which sales quantities were planned in the initial step in Profitability Analysis, can now be used to value these same quantities in profit planning.

Operational Business Planning

Revenues can be calculated on the basis of the planned costs and sales quantities, and planned contribution margins can be calculated from this.

The costing results also serve to value the products sold using standard costs of goods manufactured when billing documents are transferred from Sales and Distribution to Profitability Analysis. In addition to the standard cost estimate, the planned activity prices found in plan price iteration can be used for direct activity allocation in Overhead Cost Controlling and for valuating the activity quantities used in production (preliminary costing with completion confirmation for the production orders).

Operational business planning is also dependent on financial planning, which can have a restrictive influence on the production plan and the cost center plan.

If process cost planning is implemented operationally, then business processes are part of the integrated business planning. This way, you can determine planned process quantities for overhead costs/business processes within SOP/LTP.

Result

The following quantities and values are created as a result:

- planned costs and sales quantities plus planned revenue
- data for capacity planning
- data for cost center planning and budgeting
- data for production planning
- planned activity prices
- planned contribution margins
- information for investment planning

Operational business planning makes it possible to calculate the planned quantities and provides you with data that lets you efficiently create a financial budget. Other areas of the organization, such as marketing, can then begin their planning.

Strategic Business Planning

Purpose

Strategic business planning enables you to produce a group-wide business plan at a high level. The business plan supplements the detailed plans of the operative components with a planning facility which encompasses all the components and participating companies. The aim of business planning is to produce a consistent and realistic plan from various perspectives. The plan should improve the efficiency of the enterprise and the management process.

Business Planning is a planning system, in which you can record and evaluate aggregated plan data. It is suitable for the collection and maintenance of data from the various functional plan sections in one uniform view.

The EC-BP data structures are integrated with those of the Executive Information System (EC-EIS). If you implement EC-EIS, you have the advantage of being able to use and supplement the data pool in EC-BP. The data pool is organized into individual sub-sections of summarized business information called "aspects". You can define these specifically for your enterprise, for example, cash position, human resources, logistics. In addition to the available data contained in the aspects, you can transfer plan data from the various operative systems (for example, financial information system, human resources information system, logistics information system, cost accounting).

You can produce plans for each aspect which portray different planning views (for example, by group or business area), or you can produce sub-plans which portray investments or sales, for example. You can either enter your data manually or process it automatically.

Versions allow you to maintain various plan scenarios for any particular time period. You can produce plans for a fiscal year, and also cross-yearly plans, for example, June 1999 - March 2000.

The screen used for interactive planning is structured using planning layouts. You can configure these planning layouts as you wish. Here, you can use the characteristics and key figures from the data basis, and you can also define formulas for locally-calculated key figures. The planned data is saved bottom-up, which means that data from a lower level is aggregated to the next highest level. In addition to planning values, you can also plan prices and quantities using appropriate formulas.

You may opt for the R/3 interface of the planning processor which is familiar from other applications, or you may integrate Microsoft Excel into the R/3 System. This method links the Microsoft Excel interface with the EC-BP planning functions. If you produce plan documents with Excel, you can save and further edit these on your PC. After completion of the plan section, you can import the data back into EC-BP.

In automatic planning, the system generates plan data based on user-defined premises. After you have set the parameters for automatic planning and have started the automatic planning run, the plan data is generated and updated automatically.

Apart from recording plan data, there are various functions available for editing your plan data. Using revaluations, you can increase or decrease your plan data values by a certain percentage. Seasonal distribution factors help you distribute the data from the year level to the period level. Top-down planning distributes aggregated data to lower levels on the basis of reference data from a different version or a different time period. Using statistical methods, you can have the system project plan data based on historical figures. In automatic planning, the statistical

Strategic Business Planning

methods (forecast profiles), distribution keys and revaluation factors can relate to certain combinations of characteristic values.

The fact that EC-BP and EC-EIS share a common data basis means that you can use EC-EIS functions to report on the plan data. For example, you can produce plan/actual comparisons, navigate through the data, create exceptions, and send the report to your manager using SAPoffice functions.

Process

1. Establishing the information requirement using the reports that will be shown later
2. Transferring the information requirement to the data model, identification of key figures and characteristics:
 - Important: Relationship between key figures and characteristics,
 - Which key figures are to be filled from which sources, and with reference to which characteristics?Result: data model
3. Description of master data
4. Basic settings (configuration)
5. Configuration of data basis according to data model
 - Configuration of characteristics and key figures,
 - Configuration of data structures (aspect)
6. Configuration of data transfer according to data model
 - Data sources R/2, R/3, external
 - Data collection programs, standards, ABAPs
 - Defining sender structures
 - Defining transfer rules
 - Implementing planning logic
7. Definition of the reports to be issued and the planning layouts, using the defined data structures.

Consolidation

Purpose

This scenario describes how the individual financial statements of companies in a corporate group are combined in order to create consolidated financial statements.

The consolidation process involves eliminating the effects of trading partner and financial relationships between group companies. You can perform consolidation for your group using the functions described below.

Process Flow

Master Data

10. Before you start consolidation, you set up master data in your Consolidation application. Most importantly, you set up master data for your companies, subgroups, and the financial statement chart of accounts that you use.

Data Entry

11. You collect the individual financial statement data for consolidation in the system. This data can be transferred from a remote PC or system, or entered centrally.

Currency Translation

12. Group currency is always used for the consolidated financial statements. You therefore translate individual financial statement data from the local currency of each company into group currency.

Standardizing Entries

13. Before any consolidation entries are posted, you adjust data in the individual financial statements so that it meets the valuation requirements of the parent company. You do this by posting standardizing entries.

Intercompany Eliminations

14. You post consolidating entries in order to eliminate the payables and receivables and revenue and expense that originate from goods and service transactions between group companies.

Before you post these entries, you can generate lists of balances in order to analyze any indiscrepancies in the data.

Elimination of Intercompany Profit and Loss

15. You post consolidation entries in order to eliminate profit and loss resulting from goods and service transactions between group companies. You eliminate intercompany profit and loss in both transferred assets and inventory.

Consolidation of Investments

16. You post consolidating entries in order to eliminate the investment holdings of parent companies in your group against the proportional equity of subsidiaries and associated

Consolidation

companies in the same group. The common methods of consolidating investments - that is the purchase method, pooling-of-interest method, proportional consolidation and the equity method - are all supported by the system.

Standard Reports

17. After you have completed your consolidation activities, you can run one of the standard reports provided on the consolidated data.

User-Defined Reports

18. In addition to running standard reports, you can define and run your own reports to meet your own specific requirements.

Executive Information System

Purpose

The Executive Information System (EIS) provides information about all the factors that influence the business activities of a company. It combines relevant data from external and internal sources and provides the user with important up-to-date information that can be analyzed quickly.

The information is collated from various areas in the enterprise and its environment, and is then evaluated. These sources of information include the Financial Information System (meaning external accounting and cost accounting), the Human Resources Information System, and the Logistics Information System. The information provided can be used by both management and the accounting department.

When customizing your Executive Information System, you set up a database specific to your enterprise and supply this with data from various sub-information systems (Financial Information System, Human Resources Information System, Logistics Information System, cost accounting, etc.) or with external data. Since this data is structured heterogeneously, you can structure the data basis into separate data areas for different business purposes. These data areas are called aspects. You can define various aspects for your enterprise containing, for example, information on the financial situation, logistics, human resources, the market situation, and stock prices. For each aspect you can create reports to evaluate the data. You can either carry out your own basic evaluations in the EIS presentation (reporting) system or analyze the data using certain report groups created specifically for your requirements.

Process

1. Establishing the information requirement using the reports that will be shown later
2. Transferring the information requirement to the data model, identification of key figures and characteristics:
 - Important: Relationship between key figures and characteristics,
 - Which key figures are to be filled from which sources, and with reference to which characteristics?

Result: data model
3. Description of master data
4. Basic settings (configuration)
5. Configuration of data basis according to data model
 - Configuration of characteristics and key figures,
 - Configuration of data structures (aspect)
6. Configuration of data transfer according to data model:
 - Data sources R/2, R/3, external,
 - Data collection programs, standards, ABAPs,
 - Defining sender structures,

Executive Information System

- Defining transfer rules
 - Implementing planning logic
7. Definition of the reports to be issued and the planning layouts, using the defined data structures.

Asset Management

Definition

The **Asset Management** enterprise area includes all the business processes for providing and managing operating facilities in the widest sense (for example, buildings, plant).

Use

The business transactions of Asset Management primarily cover the financial and accounting aspects within the framework of operational asset management, with respect to the complete life-cycle of the fixed asset.

When a capital investment decision is taken, the cost efficiency of proposed new or replacement capital investments is analyzed. The sum of all planned capital investments for the enterprise is managed in a central capital investment program. This provides information about the take-up of the approved capital investment budget in each phase - planning, procurement and under-construction, and start-up - by comparing planned, budget, and actual figures.

- Asset accounting processes cover the phase from original acquisition to retirement. Financial asset management includes determining depreciation, interest, and insurance values during this phase. Operational asset management also includes all the processes for operating facilities (for example, assets):
 - Creating and managing operating facility projects
 - Making operating facilities available
 - Operating plant

Handling of Fixed Assets

Purpose

The *Handling of Fixed Assets* scenario provides detailed management and monitoring of fixed assets from the perspective of the life cycle of individual assets. The scenario covers the entire life of the asset from the purchase order or initial acquisition (which can be managed as an asset under construction) all the way to the asset retirement. Between these two events, the system handles all asset-related business transactions and ensures integration with the general ledger. The system calculates, to a large extent automatically, values for depreciation, interest, insurance and other purposes, and makes them available in the Information System.

Prerequisites

You manage fixed assets in a subsidiary ledger.

Process Flow

1. Typically, you post the acquisition of purchased assets during the ordering process in Purchasing. Before you create a purchase order, you create a master record for the asset. You can then post the purchase order to the asset. When you post the goods receipt or the invoice receipt, the system automatically capitalizes the asset.
2. Asset acquisitions can also be posted directly to Asset Accounting (posting: debit asset, credit vendor or clearing account)
3. You capitalize assets produced in-house by settling an order or work breakdown structure (WBS) element to the asset in question, or by posting an offsetting entry against the asset.
4. During the useful life of an asset, you post all business transactions that change its value. You account for any organizational changes relating to the asset by changing the asset master record or by posting transfers.
5. Periodic entries handled by collective processing (for example, depreciation posted to the general ledger, or entries for year-end closing) are also posted during the useful life of an asset.
6. You post the removal of an asset from your fixed assets (either due to sale or scrapping) using the appropriate Asset Accounting transaction.

Handling of Leased Assets

Purpose

The *Leased Assets* scenario describes the management of leased assets from the standpoint of the lessee.

Leased assets create special accounting requirements for the lessee, as compared to assets that an enterprise purchases or produces itself. During the term of the lease, under certain conditions, leased assets remain the property of the lessor or manufacturer. They represent, therefore, a special form of rented asset. Such assets are legally and from a tax perspective the responsibility of the lessor, and are not relevant for assessing the value of the fixed assets of the lessee. However, in certain countries, you are required to capitalize leased assets, depending on the type of financing involved.

This scenario makes it possible to handle different types of leased assets differently. Depending on legal restrictions, you can capitalize and depreciate leased assets (capital lease) or post their rent expense periodically to the profit and loss statement (operating lease).

Prerequisites

You manage fixed assets in a subsidiary ledger.

Process Flow

If you want to manage capitalized leased assets in the system (**capital lease**), you need to do the following:

1. Define leasing types with the specifications needed for posting asset acquisitions.
2. Create special asset classes and account allocations for your leased assets.
3. Activate the depreciation areas in which the leasing types will be depreciated.
4. Assign the appropriate leasing type in the master records of leased assets and maintain the terms and conditions of the leasing agreement.
5. Post the acquisition of a leased asset with the display transaction for the asset master record. This function capitalizes the leased asset at the present value of lease payments and creates an FI document for the lease payments.

If you want to capitalize an asset as a statistical leased asset (without a depreciation area) or manage it in the cost-accounting depreciation area only (**operating lease**), proceed as follows:

1. Choose an asset class, which has no active depreciation areas, or in which only the cost-accounting area is active.
2. Specify the conditions of the lease in the asset master record.
3. Enter a leasing type.
4. Post the asset acquisition using a transaction type that only posts to cost-accounting depreciation areas.
5. In FI, create a recurring document for lease payments.

After invoices are posted in the system, payment can be processed using the FI payment program.

Handling of Leased Assets

How you process the **cancellation of a lease** depends on the lease method:

- In the case of a capital lease you determine if the asset is being purchased or returned. If the asset is being purchased, you post an asset transfer, if it is being returned, you post a retirement.
- In the case of an operating lease, you simply delete the master record for the statistical asset. The rental agreement must also be closed in FI (flag the recurring entry document for deletion).
- If the lease is canceled ahead of time, you have to reverse the future liabilities that are due.

Handling of Investment Programs

Purpose

You use the *Investment Programs* scenario for the management of investment budgets for multiple measures, throughout your whole enterprise. The budget for the investment programs includes many individual measures. The individual measures can be internal orders, projects or maintenance orders. Therefore, you may need to use the *Plant Maintenance* area in addition to the *Investments* area.

Planning, managing and monitoring an enterprise-wide budget using an investment program can augment planning and budgeting on the level of individual measures. The functions of investment programs, therefore, are particularly suited to the needs of enterprises that create an investment plan and a budget annually, and wish to monitor the budget as a whole, rather than just at the level of individual measures.

The investment program consists of individual program positions, which are connected by a hierarchical structure. You can define this hierarchy in any way based on management accounting criterion. For example, the hierarchy can correspond to the organizational structure of your enterprise.

The scenario involves the initial structuring of an investment program, the creation of plan values, and the conversion of the plan values into an approved budget. You always have to define the investment program with an approval year. Therefore, the scenario also includes the fiscal year change to the investment program in the next fiscal year.

In this context, *approval year* means that the program has values that were approved **in** this year (but not necessarily **for this year only**).

Prerequisites

You must be using the basic functions of the CO and PS components.

Process Flow

1. You create your investment program for the first time, and structure it according to your management accounting requirements. You assign measures and appropriation requests to the end nodes (lowest hierarchy nodes) of this hierarchical structure.
2. You plan from the bottom up, as exactly as possible, for the individual measures and appropriation requests. Later, you roll up the plan values of the individual measures and appropriation requests on the investment program. If needed, you can then increase or decrease these values across the board.
3. In the approval phase, the funds are supplied from the top down, in the form of the budget, to the individual end nodes of the investment program. The approved measures receive their budget from the investment program positions directly above them in the hierarchy. However, if you want to budget manually at the measure level, you can compare the budget values entered with the budget values on the program position level. You make this comparison in reporting.
4. You can report on the investment program and its measures and appropriation requests in the IM Information System. You can generate reports regarding plan values, budgets, actual values and commitments.

Handling of Investment Programs

5. You carry out the fiscal year change. As part of the fiscal year change, you forward the budget values distributed to measures of the investment program to the following fiscal year. At the same time, you can copy the structure of the investment program to the new approval year.
You also forward plan values from planned investments that take the form of appropriation requests.

Result

Planning and approval of the investment budget was carried out for one approval year.

Handling of Simple Investment Measures

Purpose

The *Handling of Simple Investment Measures* scenario enables you to manage the planning, investment, and financing processes for investment measures within your enterprise. The term investment, in this context, is **not** limited only to investments you capitalize for bookkeeping or tax purposes. An investment in this context can be any measure that initially causes costs, and that may only generate revenue or provide other benefits after a certain time period has elapsed (for example, plant maintenance projects or research and development).

In this scenario, orders are used in the system to represent investment measures. Therefore, in contrast to the [Handling Complex Investment Measures \[Page 263\]](#) scenario, you do **not** use planning functions from the *Project System* in this scenario.

The scenario covers the entire capital investment process, from the planning and decision-making phase, to an approved measure, to implementation, and finally to settlement on completion or closing of the order.

Prerequisites

You use the basic functions of the CO component.

Process Flow

1. You create appropriation requests for the investment measures you wish to implement, and enter planned values for these appropriation requests. Appropriation requests can have several variants with different plan values.
2. Once an appropriation request is approved, you create an order for its implementation.
3. You enter plan and budget values for the order. In doing so, you adopt the overall plan values from the appropriation request.
4. You release the order.
5. During the implementation, all related costs are collected on the order. An order can be an investment measure with an asset under construction assigned to it.
6. You analyze the plan, budget, and actual values for the order. Actual values are subject to availability control.
7. You allocate overhead costs periodically to the order and settle it periodically to receivers (for example, cost centers, assets under construction, and so on).
8. If an order is an investment measures with an asset under construction assigned to it, you post a full settlement when the asset is completed.

Result

You manage an investment measure in the form of an order.

Handling of Complex Investment Measures

Handling of Complex Investment Measures

Purpose

The *Handling of Complex Investment Measures* scenario enables you to manage the planning, investment, and financing processes for investment measures within your enterprise. The term investment, in this context, is **not** limited only to investments you capitalize for bookkeeping or tax purposes. An investment in this context can be any measure that initially causes costs, and that may only generate revenue or provide other benefits after a certain time period has elapsed (for example, plant maintenance projects or research and development).

In this scenario, work breakdown structure (WBS) elements and projects are used in the system to represent investment measures. Therefore, in contrast to the [Handling Simple Investment Measures \[Page 262\]](#) scenario, you use planning functions from the *Project System* (PS) component in this scenario.

The scenario covers the entire investment process, from the planning and decision-making phase, to an approved measure, to implementation, and finally to settlement on completion or at the end of the project.

Prerequisites

You use the basic functions of the PS component.

Process Flow

1. You create appropriation requests for the investment measures you wish to implement, and enter planned values for these appropriation requests. Appropriation requests can have several variants with different plan values.
2. Once an appropriation request is approved, you create a project for its implementation.
3. You structure the project to reflect organizational aspects, and enter plan and budget values for the accompanying WBS elements. In doing so, you adopt the overall plan values from the appropriation request.
4. You release the project.
5. During the implementation of a project, all related costs are collected on the WBS elements for the project. WBS elements can be investment measures with assets under construction assigned to them.
6. You analyze the plan, budget, and actual values for the projects. Actual values are subject to availability control.
7. You allocate overhead costs periodically to WBS elements, and settle elements periodically to receivers (for example, cost centers, assets under construction, and so on).
8. If a project includes investment measures with assets under construction assigned to them, you post a full settlement for the relevant WBS elements when the asset is completed.

Result

You manage an investment measure in the form of a project.

Direct Capitalization

Direct Capitalization

Purpose

You use this scenario, in addition to the scenarios for complex and simple capital investment measures, to budget for fixed assets that have been directly capitalized (without an under construction phase).

You manage the budget using statistical orders or work breakdown structure (WBS) elements, which are assigned to the capitalized assets. When you post values for a purchase order or asset acquisition, they are automatically posted to the assigned statistical order or WBS element in parallel. This enables you to compare the budget for the order or WBS element with actual values and commitments for its assigned assets, and to carry out availability control.

This scenario includes the allocation of blanket investment budgets to statistical orders or WBS elements, the acquisition of assets, and the monitoring of budgets.

Prerequisites

You use the basic functions of the CO component.

Process Flow

1. You create a statistical order and allocate it a blanket budget for fixed asset investments.
2. You acquire assets, thereby reducing the remaining budget amount.
3. You analyze the actual values and commitments in relationship to the budget.
4. You check the availability of budget resources and update the budget if necessary.

Result

You are able to manage blanket asset investment budgets.

Real Estate Management (RE)

Definition

SAP Real Estate Management is an instrument with which you can map all the rental processes involved in managing your real estate portfolio.

The Real Estate Management enterprise process area includes the following activities:

- Rental (lease-ins and lease-outs)
Regardless of whether the rental objects that you manage are leased-in or part of your own portfolio, for internal or external usage, for residential or commercial users:
Managing real estate requires a system that supports the processes of rental (lease-in/lease-out), rental accounting, service charge settlement and rent adjustment.
- Real estate controlling
This is the basis for controlling and monitoring your real estate assets, and for the information system. These functions are essential for both accounting clerks (tracking rent collection) and managers (cost analysis and cost planning).

Use

SAP Real Estate Management helps you to manage your real estate portfolio effectively. The system maps the business transactions related to accounting, cost accounting and logistics.

Integration

The integration of SAP Real Estate Management with the Plant Maintenance, Project System, Asset Accounting, Materials Management, Financial Accounting and Controlling components lets you manage a wide range of functions related to your real estate portfolio according to the specific needs of your organization.

Real Estate Management (RE)

Real Estate Management (RE)

Purpose

The *Real Estate Management* scenario describes the processes involved in managing and renting real estate. The main activities are:

- Rental (application, offer, lease-out)
- Lease-in
- Rental accounting
- Service charge settlement
- Rent changes
- Balance sheet preparation
- Input tax processing
- Third-party management

The Real Estate Management component is integrated with the following components: Financial Accounting, Cash Management, Controlling, Asset Accounting, Plant Maintenance and Project System.

Prerequisites

To use the SAP RE (SAP Real Estate) component, you need to install the following R/3 components:

- Financial Accounting (FI)
- Controlling (CO)

Depending on the functions you require, you may install the following additional components:

Required function	Required component/subcomponent
Planning and execution of planned or unplanned maintenance, modernization measures or new development in the real estate area	Plant Maintenance (PM)
Ordering materials required for plant maintenance tasks on real estate objects	Materials Management (MM)
Planning complex maintenance and investment measures with high risk factors	Project System (PS)
Value-based management and treatment of fixed assets	Asset Accounting (FI-AA)
Internal control function via profit center	Profit Center Accounting (EC-PCA)

Process Flow

1. Create the **master data** required, such as business entity, building, property and rental unit. Determine the master data required for service charge settlements.
2. The rental process covers all activities involved, from receipt of the rental request through automatic assignment to vacant rental units and creating an offer up to the lease-out itself. Here you have to differentiate between internal and external usage. If you opt for sales tax for your commercial real estate, the system automatically determines the input tax and divides it into deductible and non-deductible portions during input tax processing.
3. You use the *lease-in* processes if the objects you are renting are not entirely in your own real estate portfolio. Using the lease-in, you map the agreed recurring or one-time payments. You can assign other vendor contracts defining, for instance, suppliers and services to lease-ins. Resubmission rules help you check the contract structure once or periodically (for example, three months before contract end or once a year).
4. Rental accounting incorporates processes related to posting activities. The main functions here are the debit position (for lease-outs) and periodic posting (for lease-ins), incoming payments, dunning and account maintenance.
5. You carry out the service charge settlement. Apportionable operating and heating expenses are settled against the advance payments made and then adjusted accordingly. If heating expenses are settled using an external company, data is exchanged by means of DME tapes.
6. You then plan the implementation of rent adjustments. The system supports your rent adjustments with the generally used adjustment methods as well as your own user-defined adjustments:
 - Representative list of rents
 - Comparative group of apartments
 - Index-linked
 - Modernizations
 - Expert opinion
7. The system supports your balance sheet preparations by offering accrual/deferral functions for selected periods.
8. If you manage the rented object on behalf of a third party, a management contract regulates the relationship between you, as manager, and the owner. The related processes are mapped in the third-party management function.

Result

SAP RE is a tool that helps you manage your real estate activities successfully.

Organizational Management

Definition

The **Organizational Management** enterprise area is responsible for planning, implementing, and monitoring official and lasting provisions for the performance of work-related tasks at the enterprise.

Organizational Planning determines areas of responsibility (enterprise areas, sections, central departments, departments, lower-level departments, groups, positions, etc.) and regulates their communication and coordination.

Personnel Staff Planning determines the holders of positions in an area of responsibility.

Planning the Organizational Plan

Purpose

Organizational design incorporates the planning, realization, and monitoring of general (long-term) provisions for the distributed execution of tasks at an enterprise. When the **organizational plan is planned**, areas of responsibility are created and communication and coordination between them are determined.

The prerequisite is therefore a detailed analysis of the tasks required for attaining the enterprise goals.

The organizational plan structure is created in two steps: department formation and position formation.

The term “department” is used here in its wider sense. It incorporates the common terms used in practice, such as division, subarea, principal department, department, subdivision, group, and project.

Department formation is used to create organizational subareas or units, which are responsible for a limited task area within the enterprise. To ensure agreement on cross-department processes, communication and coordination between individual departments is also determined.

Position formation is used to create areas of responsibility within a department whose tasks, responsibilities, and duties can be assumed by the appropriate party. Once again, communication and coordination provisions must be used to integrate individual positions into the structure of the organizational plan.

As well as administrative actions, the realization of an adopted organizational plan requires various supplementary actions to ensure maximum acceptance by the people affected.

Enterprise-wide provisions for organizational planning ensure that an organizational activity is balanced, continuous, and efficient.

Process Flow

Design of Enterprise Provisions for Organizational Planning

Provisions for organizational planning are determined for the whole enterprise:

- Provisions for planning, realization, and monitoring of the organizational plan (for example, responsibilities, participation of those affected, conditions, and type of project organization)
- Provisions for the design of the organizational plan (type of hierarchy, degree of specialization)
- Provisions for the methods to be used (for example, use of an organizational glossary, suggestion scheme)

Task Analysis

Starting from the enterprise goals, global tasks are identified whose fulfillment can lead to achievement of the enterprise goals. These global tasks are then defined in concrete terms and refined until a sufficient degree of detail is reached.

There are usually various ways of refining tasks, which means that several drafts may be prepared. When the drafts are available, they are evaluated.

Planning the Organizational Plan

Based on this evaluation, the instance responsible decides which draft to determine as the final version of the task catalog.

Department and Position Formation

The organizational plan is planned for an organizationally limited task area.

The available elements are departments (in their wider sense, see above) and positions.

Responsibilities for the fulfillment of tasks and organizational integration (assignment, reporting hierarchy) are determined.

Based on the results of the actual status analysis and on the current task catalog, one or more drafts are created and evaluated for the structure of the organizational plan (department and position structure). Based on the evaluation, a decision is made on which draft to adopt as the organizational plan structure.

Realization of Planning for the Organizational Plan

The adopted organizational plan structure (department and position structure) is implemented.

As well as administrative actions, various supplementary actions (such as information events and pilot projects) may be necessary to ensure maximum acceptance by the people affected and to facilitate working with the new provisions.

Organizational Monitoring

The task catalog, current organizational planning results, validity of planning requirements, progress made in realizing the organizational plan, or effects of the organizational plan are checked at regular intervals or for a specific reason. Based on the results of the analysis, a decision is made as to whether

- The organizational design provisions must be revised
- Additional implementation actions must be performed
- The task catalog must be revised
- The department or position structure for certain task areas must be adjusted or created anew, or whether
- Additional realization actions are necessary

As a result of changed enterprise goals, for example, it may be necessary to restructure an enterprise area. If the realized organizational plan structure does not have the desired effects, an analysis of the causes can demonstrate that problems can be recognized and avoided during the planning process if changes are made to enterprise provisions or to the training offered to persons responsible for planning.

Personnel Staff and Change Planning

Purpose

Once the appropriate provisions have been determined and implemented for the whole enterprise, personnel staff and change planning can be performed.

Personnel staff planning determines an adequate assignment of employees to positions for the positions and employees of a department. The staffing plan - that is, a list of position holders - is the main result.

Sometimes, no task areas are found for employees or suitable employees for positions. Position holders may still require individual personnel development planning to eliminate skill deficits.

Personnel change planning then determines the further procedure for employees without a task area and positions without a holder. Employees without a task area can be assigned to other departments or dismissed. Positions without a holder usually result in new hirings. However, if changes are extensive they can also result in a reorganization and in tasks and their positions being relinquished to other departments.

Process Flow

Design of Provisions for Personnel Staff and Change Planning

Enterprise-wide provisions are determined for personnel staff and change planning:

- Provisions on the performance of personnel staff and change planning (for example, responsibilities and times)
- Provisions on how to proceed with unoccupied positions (for example, locks for specific periods)
- Provisions on employee dismissals (for example, priorities for specific employee groups)

One or more alternatives for personnel staff and change planning provisions are created and evaluated on the basis of information on the requirements of Human Resource subareas, and information on the relevant statutory provisions. Finally, a decision is made whether to adopt one of the alternatives and if so, which.

Implementation of Provisions for Personnel Staff and Change Planning

To ensure that personnel staff and change planning provisions are accepted and effectively implemented at the enterprise, various implementation measures are planned and performed:

- Publicizing of personnel staff and change planning provisions
- Implementation measures for potential planners (such as heads of department)

Preparation of Personnel Staff Planning

Preparation of personnel staff planning mainly consists of procuring information on the employees and positions under consideration. This includes information on:

- The employees' profiles (preferences, dislikes, qualifications, potentials, and so on)
- The employees' planned careers
- The employees' career paths

Personnel Staff and Change Planning

- Position requirements

If an employee's profile does not provide the information required, a personnel appraisal must be held.

Personnel Staff Planning

One or more alternative plans are drawn up for staffing positions. An alternative is then selected or additional alternatives drafted on the basis of an evaluation.

A list of position holders is the main result. Sometimes, no task areas are found for employees or suitable employees for positions. Position holders may still require individual personnel development planning to eliminate skill deficits.

These results are then submitted for approval.

Approval of Results of Personnel Staff Planning

A decision is made whether to approve the position holders, unoccupied positions, employees without a task area (position), and requirements for individual personnel development planning in their present form.

If approval is given, the list of position holders can be implemented. Personnel change planning must then be performed for the unoccupied positions and employees without a task area (position). If necessary, individual personnel development planning is performed for the appropriate employees. If a position assignment is effected that is incompatible with the position holder's career plan, career planning must be checked.

If the personnel staff plan is rejected, it must be corrected.

Employee Notification of Task Area

The employee is informed of the task area (position) assigned to him or her.

Preparation of Personnel Change Planning

Preparation of personnel change planning mainly consists of procuring information on:

- The results of headcount planning. This is the number of employees to be hired, dismissed, changed, and retained. The figures are differentiated by categories of persons (such as jobs), and sometimes by department.
- The employees' planned careers.
- Currently applicable statutory and company provisions. They are particularly relevant to employee hirings and dismissals.

Personnel Change Planning

One or more alternative plans are drawn up for positions to be occupied using recruitment, employees to be dismissed, positions to be relinquished, and employees to be transferred to other departments. One of these alternatives is selected, or additional alternatives are drafted, on the basis of an evaluation.

The personnel change plan is then submitted for approval.

Approval of the Personnel Change Plan

A decision is made whether to approve the positions to be occupied using recruitment, employees to be dismissed, positions to be relinquished, and employees to be transferred to other departments in their present form.

Personnel Staff and Change Planning

If approval is given, recruitment, downsizing planning, position formation, or personnel assignment can be performed.

If the personnel change plan is rejected, it must be corrected.

Monitoring of Personnel Staff Planning

The effects of personnel staffing, and the procedure and results of personnel staff planning, are checked at regular intervals or for specific reasons. Such checks focus in particular on whether and to what extent the objectives of personnel staffing are met, and whether the return on investment is adequate. Based on the results of the analysis, it is decided whether

- The provisions of personnel staff planning need to be re-designed
- Further implementation measures are necessary, or
- Personnel staff planning must be repeated in full or in part

Monitoring of Personnel Change Planning

The effects of personnel changes, and the procedure and results of personnel change planning, are checked at regular intervals or for specific reasons. Such checks focus in particular on whether and to what extent the objectives of personnel changes are met, and whether the return on investment is adequate. Based on the results of the analysis, it is decided whether

- The provisions of personnel change planning need to be re-designed
- Further implementation measures are necessary, or
- Personnel change planning must be repeated in full or in part

Personnel Administration

Personnel Administration

Definition

The most important tasks in Personnel Administration include administrative activities when employees are hired, transferred, or leave the enterprise, and information management for employees and their work relationships.

Personnel Actions

Process Flow

Employee Hiring

When a new employee is hired, an applicant becomes an active employee and a previously vacant position is occupied. Relevant data is entered for the new employee: personal data, organizational specifications, contract elements, and payroll specifications.

The employee's personal data can be taken from applicant data. Payroll specifications such as tax class, health insurance data, and pension insurance number are taken from the documents provided by the employee when he or she is hired.

Sometimes, former employees can start working for an enterprise again, or inactive work relationships can be resumed. Such scenarios are regarded as special types of employee hiring.

Employee Transfer

If a transfer (that is, an employee's change of position) is approved by the instance responsible, relevant employee data is adjusted accordingly.

A transfer entails a change of organizational assignment, and can also trigger other adjustments to, for example, time recording specifications (such as leave entitlement), payroll specifications (such as salary increases), or other internal HR data (such as objects on loan, company cars, and powers of attorney).

As a result of the transfer, a vacant position is filled and the employee's previous position becomes vacant.

Employee Leaving

If an employee leaves the enterprise, his or her work relationship terminates or becomes inactive.

The work relationship terminates if the employee leaves the enterprise or goes into retirement or early retirement.

If a work relationship must be interrupted for a specific period of time rather than terminated completely, its status can be changed to inactive. Reasons for interrupting a work relationship include military or non-military service, maternity leave, and parental leave.

The position that the employee previously occupied now becomes vacant.

Recruitment

Recruitment

Definition

Recruitment is concerned with recruiting new employees for vacant positions at the enterprise.

Recruitment

Purpose

A department requests the HR Department to find suitable candidates for vacancies. The HR Department advertises these vacancies, and receives applications from external or internal applicants. The applicants are now assigned to vacancies, and the most suitable candidate is selected. He or she is then offered a work contract.

Process Flow

Issuing a Recruitment Request

A department creates a recruitment request. This requests the HR Department to find suitable employees for the given vacancies. The vacancies are items in the recruitment request so issued. The request determines who is responsible for the request, and who meets the costs. In the system, the recruitment request only exists implicitly using the set of vacancies.

Monitoring a Recruitment Request

A recruitment request's progress is assessed, and decisions are made on the steps required. The following information is determined:

- The number of items on the request that remain to be filled, and the number already filled
- The number of items on the request that remain to be filled for which suitable candidates have been found
- The amount of the budget that has already been used, and the remaining amount
- Information on activities performed, such as job advertisements

On the basis of the information available, the recruitment request retains its "in processing" status, or personnel advertising is effected, or the recruitment request is set to "complete". A recruitment request can be set to "complete", for example, if all of the items have been filled, or if there are no more financial resources available.

Personnel Advertising

The HR Department decides which vacancies to advertise, and how and where to advertise them. Content, form, and medium are, therefore, determined for the advertisement. A purchase requisition is created using the "publication of advertisement" service.

Processing a Receipt of Application

Data on the applicant and application is entered or updated. If data already exists (in the case of internal or multiple applications, for example), the information is simply updated. The amount of data entered depends on the enterprise and/or applicant.

Confirming a Receipt of Application

The enterprise informs the applicant that his or her application has been received.

Applicant Pool Administration

The personnel administrator checks the applicants who are still being processed, or who have been put on hold, either at regular intervals or for a specific reason. The personnel administrator decides how to proceed with the applicants:

Recruitment

- The applicant is put on hold if suitable vacancies are likely in the near future.
- The applicant is rejected if suitable vacancies are unlikely in the future.
- The applicant is assigned to a vacancy if he or she meets its basic prerequisites.

Notification of Rejection of Application

The enterprise has rejected the application. The applicant is informed, and receives his or her application documents again.

Notification That Application Is On Hold

The enterprise has put the applicant on hold. The applicant is informed that the enterprise might like to employ him or her in the future.

Personnel Selection

A check is performed to determine which of the applicants best meets the prerequisites for a vacancy. Various selection methods can be used for the check. The most important methods are the analysis of application documents, the job interview, aptitude tests, and the assessment center. The type of methods used, and the order in which they are used, depend primarily on the vacancy and the enterprise.

Processing an Offer of Work Contract

The enterprise has decided to employ an applicant. An offer of work contract is created and transmitted to the applicant. This offer is approved within the enterprise, and can be revised more than once.

Preparation for Hiring

The applicant has accepted the offer of work contract. This information is entered, and the line manager is told when work will commence.

Entering a Rejection of Work Contract

The applicant has rejected the offer of a contract. This information is entered, and the line manager is informed.

Processing a Rejection of Work Contract

The enterprise decides whether to make the applicant a different (better) offer of a work contract.

Processing a Retraction of Application

The application's retraction is entered. If the applicant has already been included in selection procedures, he or she is retracted from them.

Confirming a Retraction of Application

The applicant is informed that the enterprise has received the retraction, and receives his or her application documents again.

Personnel Development

Definition

The **Personnel Development** enterprise area consists of training and job related actions to qualify employees for the tasks they are required to perform. The main focus is on planning future tasks to be performed by employees at the enterprise (*career planning*), and on planning training and job related actions (training events, periods spent living and working abroad, etc.) to ensure that employees obtain or improve the qualifications they require to perform tasks in the present and in the future (*individual personnel development planning*).

Personnel Appraisal provides personnel development planning with information on the current profile of individual employees. It is an instrument used to prepare planning, and evaluate the success of developments.

Personnel Development Planning

Personnel Development Planning

Purpose

Personnel Development Planning includes planning future tasks to be performed by employees at the enterprise (career planning), and planning training and job-related actions (training events, periods spent living and working abroad, etc.) to ensure that employees obtain or improve the qualifications they require to perform tasks in the present and in the future (individual personnel development planning).

The enterprise's need for suitable employees, and the performance and potential of individual employees, constitute the starting point. Employee preferences and dislikes can also be taken into consideration during planning.

Using a personnel development system at an enterprise to determine standardized planning methods, templates for career plans and individual development plans, and a range of development actions ensures that staffing requirements are met by qualified and motivated employees.

Process Flow

Design of Personnel Development System

The personnel development system determines an enterprise's career planning strategy and the provisions for realizing this strategy. These include:

- Career plan templates (typical sequences of jobs/positions)
- Development plan templates (typical sequences of development actions)
- Provisions for personnel development planning: procedural provisions (frequency, what triggers planning, who is involved, who is responsible for what, and so on), decision-making guidelines and provisions, the information required of personnel development planning (for example, requirements for appraisals of potential)
- An offer of specific development actions can also be defined

Implementation of Personnel Development System

To ensure that the personnel development system can be implemented effectively, it is publicized at the enterprise. Offers of specific development actions are also publicized. Implementation actions are performed for potential planners (training events, for example) and

for the employees (information events, for example).

Preparation of Career Planning

Preparation of career planning consists primarily of obtaining information on the employees and jobs/positions under consideration. This includes information on

- Employees' profiles (preferences, dislikes, qualifications, potentials, and so on), and their career paths to date
- Jobs and positions to be staffed, resulting requirements, and the current status of staff planning for the relevant positions

If the employee's profile does not provide the information required, a personnel appraisal must be performed. (This is usually an appraisal of potential.)

Personnel Development Planning

Career Planning

An employee's career path at an enterprise is planned. This is usually done in cooperation with the employee in question. In addition to individual career items (that is, the jobs and positions included in the career plan), it is also possible to determine prerequisites that must be satisfied before items can be achieved, as well as time frames and suitable control mechanisms (personnel appraisals, for example). Alternative career plans are created. The career templates included in the personnel development system can be used to do this. These alternatives are evaluated. Important criteria include the suitability of the employee and the requirements of the enterprise. Finally, a decision is made to adopt one of the alternatives as the career plan. This might necessitate adjusting the staffing plan for the positions affected.

Employee Notification of Career Plan

The employee is notified of the career plan adopted for him or her.

Preparation of Individual Personnel Development Planning

Preparation of individual personnel development planning consists primarily of obtaining information on

- Employees' profiles (qualifications, potential, preferences, dislikes, appraisals received), their career paths to date, and their future tasks
- Development goals and the development volume involved in personnel staff and change planning
- Development actions on offer, and
- The available budget

If employees' profiles do not provide the information required, a personnel appraisal must be performed. If the information on development actions is insufficient, a request may need to be sent to external or internal service providers.

Individual Personnel Development Planning

An employee's individual development plan is created. This is usually done in cooperation with the employee in question. In addition to the development actions (training events, periods spent living and working abroad, etc.), it is also possible to determine prerequisites that must be satisfied before a development action can be performed, as well as time frames and suitable control mechanisms (personnel appraisals, for example). One or more alternative individual development plans are created. The development plan templates included in the personnel development system can be used to do this. These alternatives are evaluated. Important criteria include the employee's potential and the requirements of the enterprise. Finally, a decision is made to adopt one of the alternatives as the individual development plan.

Employee Notification of Individual Development Plan

The employee is notified of the individual development plan adopted for him or her.

Monitoring of Career Planning

The effects of the personnel development system, career planning, and the implementation of career plans are checked at regular intervals or for specific reasons.

On the basis of the analysis, it is decided whether

- The career planning system must be redesigned

Personnel Development Planning

- Further implementation actions must be performed
- Career plans must be modified or kept as they are
- Career plans must be terminated and a new plan drawn up, or whether
- The task profile of positions must be adjusted to the skills of the employee

For example, a career plan can be regarded as complete once the employee has successfully held all of his or her intended jobs/positions. If it is possible to foresee that an employee is not suitable for specific jobs/positions, the career plan can be modified or the tasks profile of the jobs/positions in question can be adjusted to the skills of the employee.

Monitoring of Individual Personnel Development Planning

The effects of the personnel development system, individual personnel development planning, and the implementation of individual development plans are checked at regular intervals or for specific reasons. On the basis of the analysis, it is decided whether

- The personnel planning system must be redesigned
- Further implementation actions must be performed
- Individual development plans must be modified or kept as they are, or whether
- Individual development plans must be terminated and a new plan drawn up

For example, a development plan can be regarded as complete once the employee has successfully achieved his or her intended development targets, or if it becomes apparent that the employee is not capable of achieving them. A modification might be necessary if the development targets change.

Personnel Appraisal

Purpose

The **Personnel Appraisal** scenario describes how personnel appraisals are planned and performed.

A personnel appraisal is a planned, structured, official, and standardized evaluation of employees or future employees that is performed by persons commissioned to do so.

The aim of personnel appraisals is to supply various Human Resource subareas, such as career planning, personnel staff planning, compensation planning and recruitment, with the information they require on the profile of employees. In other words, employee suitability for current or future tasks is appraised. Depending on the purpose of the appraisal, it can include criteria such as personality, qualifications, (past) performance, and potential.

By using a personnel appraisal system that determines uniform methods and criteria for the whole enterprise, you ensure that appraisals supply reliable and meaningful information to the Human Resource subareas that need it.

Process Flow

Overview

Once the personnel appraisal system has been designed and implemented for the whole enterprise, personnel appraisals can be performed.

Personnel appraisals can be held at regular intervals (as annual performance reviews, for example). Alternatively, they can be held at the explicit request of Human Resource subareas or of the employee to be appraised.

First, the persons responsible are required to plan, organize, and/or perform the appraisals. The organizer then invites appraisers and appraisees so that the appraisal can be performed. After the appraisal, the appraiser informs the appraisee of the provisional results, asks the appraisee whether he or she accepts the provisional results in their present form, and asks whether he or she would like to make any additional comments. Finally, the appraisee and other involved parties are informed of the official appraisal results.

Design of Personnel Appraisal System

Provisions are determined for planning, organizing, and performing personnel appraisals:

- The appraisal criteria and permissible scales
- The personnel appraisal methods (interview, test, assessment center, subappraisal - overall appraisal, etc.)
- Provisions for the personnel appraisal process, including the attendant responsibilities and distribution of tasks

Implementation of Personnel Appraisal System

To ensure that the personnel appraisal system is accepted at the enterprise and can be implemented effectively, it is publicized at the enterprise. Implementation actions are performed

Personnel Appraisal

for potential appraisers (training events, for example) and for the employees to be appraised (information events, for example).

Planning and Organization of Personnel Appraisal

The persons to be appraised, the appraisers, and the personnel appraisal methods to be used are determined. Depending on when the persons involved are available, the schedule and, if necessary, the rooms for the personnel appraisal are determined. The involved parties are invited to the personnel appraisal.

Performance of Personnel Appraisal

The appraisal is performed for a group of persons in accordance with the plan specifications. The individual personnel appraisal methods are used once the relevant information has been obtained, and the results are evaluated by the involved parties. The appraisee's opinion can, if required, constitute part of the evaluation. Finally, the personnel appraisal is released for approval.

The information required for the various methods depends on the method itself and the purpose of the appraisal.

For example, the qualifications profile and requirements profile are required for an appraisal of performance. An appraisal of potential may require information on the appraisee's preferences, qualifications, and previous profile of potential, as well as the profile of (planned) requirements.

Approval of Personnel Appraisal

The personnel appraisal is checked to ensure it is correct and fair. The appraisee's opinion can or must be taken into consideration. Finally, a decision is made as to whether the personnel appraisal is valid, or whether it must be performed again either in full or in part.

The appraised employee's profile is updated on the basis of a valid personnel appraisal. This means the results are then available for the processes performed in other Human Resource subareas such as staff planning, career planning, compensation planning, or recruitment.

Notification of Personnel Appraisal Results to Involved Parties

The parties involved in the personnel appraisal are notified of its results.

Monitoring of Personnel Appraisal

The effects of the personnel appraisal system, and the procedure and results of personnel appraisals, are checked at regular intervals or for specific reasons. Such checks focus in particular on whether and to what extent the aims of personnel appraisals are met,

and whether the return on investment is adequate. If necessary, the analysis is used as a basis for determining whether the personnel appraisal system must be redesigned, whether additional implementation actions must be performed, or whether personnel appraisals must be repeated in full or in part.

Compensation Management

Definition

The aim of the **Compensation Management** function within Human Resources Management is to ensure that labor at the enterprise is remunerated according to employee performance, the requirements of the enterprise, and current market values.

Compensation Management is particularly important for the enterprise because the decisions that are made have a direct influence on the costs incurred at the enterprise, and on employee motivation. Both of these aspects directly affect the enterprise's competitiveness.

Compensation Planning

Process Flow

Creation of Specifications for Compensation Planning

The specifications relevant to the compensation planning procedure are determined.

These include:

- The organizational areas for which compensation planning must be performed
- Provisions that determine the compensation types for which adjustments are allowed
- Conditions regarding the extent of compensation adjustments (such as maximum and minimum compensation adjustments)
- Determination of the financial resources available for compensation to be planned
- Organizational provisions for performing planning (What is the time frame? How are decisions delegated? On which hierarchical levels are compensation plans consolidated and approved?)

When compensation planning is prepared, several alternative specifications can be drafted. On the basis of an evaluation, a decision is made as to whether to adopt a particular draft as a binding specifications package, or to correct existing alternatives, or to create new ones.

Delegation of the Need for Compensation Planning

A manager checks whether compensation planning is performed by him or herself in his or her area of responsibility, or whether it is delegated in full or in part to lower-level managers. If delegation takes place, specifications are defined in more concrete terms.

Creation/Correction of Compensation Plan

A manager creates a compensation plan for those employees who are directly subordinate to him or her.

Several alternatives can be created and evaluated for the compensation plan. Finally, a decision must be reached as to whether to accept one of the alternatives, or to create more alternatives, or to correct existing alternatives.

The accepted compensation plan is released for consolidation.

Consolidation of Compensation Plan

When consolidation takes place, various compensation subplans are brought together in a comprehensive plan.

Prior to consolidation, a check is performed to ensure that all necessary subplans exist and that they meet the given specifications. If this is not the case, missing subplans can be re-requested and unacceptable plans can be referred back for correction.

Under certain circumstances, individual subplans may meet the specifications while the consolidated compensation plan fails to do so. In this case, individual subplans can be referred back to the persons responsible to be corrected.

The completed, consolidated compensation plan is released and then goes to the next decision level up for further consolidation or approval.

Approval of Compensation Plan

The compensation plan is checked to ensure that plan values are appropriate, and that formal specifications have been observed. A decision is made as to whether the plan is approved or whether corrections are still required.

Delegation of Need to Correct Compensation Plan

A manager checks whether a required correction is performed by him or herself in his or her area of responsibility, or whether it is delegated in full or in part to lower-level managers. If delegation takes place, correction specifications are defined in more concrete terms.

Adjustment of Payroll Specifications

The compensation plan is implemented when specifications are adjusted for payroll.

Employee Notification of Compensation Adjustment

The employee is informed of his or her compensation adjustment.

Monitoring of Compensation Planning

A check is performed as required or at regular intervals to determine whether the conditions are still valid under which the specifications for compensation planning were defined.

A decision is made as to whether there is a definite need to act, and whether the specifications or the as yet unapproved compensation plans must be corrected.

Long-Term Incentives

Long-Term Incentives

Process Flow

Design of Long-Term Incentives Program

A program is developed to give employees a stake in enterprise capital.

Planning is based on the financial resources available for the program and on statutory, pay scale, and company provisions. Therefore, information is obtained on these areas at the start of the planning process.

When the program is actually designed, the following characteristics are determined:

- The type of long-term incentives
- The number of incentive shares
- The provisions for granting incentive shares to employees
- The provisions for business transactions that can be performed after incentive shares have been granted

The type of long-term incentives consists of a specific kind of real or virtual security that represents a stake in enterprise capital. Examples include stocks, stock options, convertible bonds, and “simulated” options.

At this point, the provisions for granting incentive shares to employees are roughly determined. They can be determined more precisely later when a specific granting round is planned.

The business transactions that can be performed after incentive shares have been granted consist of exercising long-term incentive rights (such as option rights) and the expiration, forfeiture, retraction, or sale of long-term incentives.

The types of business transaction that can be performed, and the conditions under which they can be performed, must be determined for the various long-term incentives.

During the planning phase, one or more alternatives for long-term incentive programs are drawn up. On the basis of an evaluation, a decision is made whether to adopt a long-term incentives program (that is, whether to release it for implementation) or whether to continue planning by correcting existing alternatives or creating new ones. In practice, the decision process can be relatively complicated. At joint-stock companies, for example, stockholders can be required to approve some types of incentive.

Implementation of Long-Term Incentives Program

The long-term incentives program is publicized at the enterprise. If necessary, implementation actions are performed to prepare managers for the program’s practical implementation. Courses and information events are examples of such implementation actions.

Determination of Specifications for Granting Long-Term Incentives

The following specifications are determined for a long-term incentives program:

- The number or value of incentive shares to be distributed
- The criteria used to distribute incentive shares to employees (performance, position at the enterprise, length of service at the enterprise, etc.)

Long-Term Incentives

- The organizational provisions for granting incentive shares (Who decides how many incentive shares are granted to individual employees? How are decisions delegated? What is the schedule?)
- Precise provisions for business transactions that can be performed after incentive shares have been granted

Delegation of Need for Grant

Incentive shares are granted to employees. Each manager checks whether he or she grants incentive shares in his or her own area of responsibility, or whether this task is delegated to lower-level managers. If delegation takes place, specifications are defined in more concrete terms.

Creation/Correction of Grant Plan

A grant plan is created for employees within an area of responsibility. It determines the number of incentive shares that each employee is to receive.

More than one alternative can be created and evaluated for the grant plan. A decision must then be reached as to whether to accept one of the alternatives, or whether to create new alternatives or correct existing ones.

The grant plan that is created is released for consolidation or approval.

Consolidation of Grant Plan

When consolidation takes place, different granting subplans are brought together in a comprehensive plan. Prior to consolidation, a check is performed to ensure that all necessary subplans exist and that they meet the given specifications.

Approval of Grant Plan

The grant plan is checked to ensure that formal specifications have been observed and that an adequate number of incentive shares have been granted. A decision is made as to whether the plan is approved or whether corrections are still required.

Delegation of Need to Correct Grant Plan

A manager checks whether he or she should make a correction in his or her own area of responsibility, or whether this task is delegated to a lower-level manager. If delegation takes place, correction specifications are defined in more concrete terms.

Granting of Long-Term Incentives

The approved grant plan is implemented. The incentive shares included in the plan are granted to employees.

Employee Notification of Granting of Long-Term Incentives

The employee is informed of the fact that long-term incentives have been granted.

Entry of Request to Exercise Rights

An employee enters a request to exercise his or her long-term incentive rights.

Check for Request to Exercise Rights

The request is checked to ensure that formal specifications for exercising rights have been observed.

Long-Term Incentives

For example, exercising such rights might only be permitted on specific dates or to a certain extent.

A decision is made as to whether the request is approved or rejected.

Notification of Approval of Exercise of Rights

The employee is informed of the approval of his or her request to exercise rights.

Exercise of Long-Term Incentive Rights

An employee exercises his or her long-term incentive rights.

For example, he or she could have the right to acquire enterprise stock at a fixed price (stock options).

Notification of Rejection of Exercise of Rights

The employee is notified that his or her request to exercise long-term incentive rights has been rejected and is notified of the reasons for the rejection.

Employee Notification of Imminent Expiration

The employee is informed of the imminent expiration of long-term incentives.

Expiration of Long-Term Incentives

Long-term incentives can be created in such a way that they or some of their resulting rights expire on particular dates that were determined earlier.

If long-term incentives expire, their expiration is documented in the system.

Employee Notification of Expiration

The employee is informed of the expiration of long-term incentives.

Forfeiture of Long-Term Incentives

Employees' possession of long-term incentives can be linked to certain conditions. If the conditions are not observed, employees can lose the share of the long-term incentives that they have been granted.

Long-term incentives may be forfeited if the work relationship is terminated or if goals are not met.

Employee Notification of Forfeiture

The employee is informed of his or her forfeiture of long-term incentives and of the reasons why.

Retraction of Long-Term Incentives

Under certain circumstances, the shares of long-term incentives granted to employees may need to be retracted from all employees.

Personnel Budget Planning

Personnel Budget Planning

Purpose

Personnel budget planning determines the financial resources available for Human Resource functions in a certain period.

Process Flow

Creation of Specifications for Budget Planning

The specifications relevant to the budget planning procedure are determined.

These include:

- The planning period for which budget planning is to be performed
- The organizational areas for which budget planning is to be performed
- The functional areas for which budget planning is to be performed
- The organizational provisions for performing planning (What is the time frame? How are decisions delegated? On which hierarchical levels are budget plans consolidated and approved?)
- Specifications for definite upper and lower limits for budgets in individual organizational or functional planning areas

When budget planning is prepared, several alternatives can be drawn up for the specifications. On the basis of an evaluation, a decision is made as to whether to adopt a particular draft as a binding specifications package, or to correct existing alternatives, or to create new ones.

Delegation of Need for Budget Planning

A manager checks whether budget planning is performed by him or herself in his or her area of responsibility, or whether it is delegated in full or in part to lower-level managers. If delegation takes place, specifications are defined in more concrete terms.

Creation/Correction of Budget Plan

A manager creates a budget plan for his or her area of responsibility.

Several alternatives can be created and evaluated for the budget plan. Finally, a decision must be reached as to whether to accept one of the alternatives, or to create more alternatives, or to correct existing alternatives.

The accepted budget plan is released for consolidation.

Budget Plan Consolidation

When consolidation takes place, various budget subplans are brought together in a comprehensive plan.

Prior to consolidation, a check is performed to ensure that all necessary subplans exist and that they meet the given specifications. If this is not the case, missing subplans can be re-requested and unacceptable plans can be referred back for correction.

Personnel Budget Planning

Under certain circumstances, individual subplans may meet the specifications while the consolidated budget plan fails to do so. In this case, individual subplans can be referred back to the persons responsible to be corrected.

The completed, consolidated budget plan is released and then goes to the next decision level up for further consolidation or approval.

Approval of Budget Plan

The budget plan is checked to ensure that plan values are appropriate, and that formal specifications have been observed. A decision is made as to whether the plan is approved or whether corrections are still required.

Delegation of Need to Correct Budget Plan

A manager checks whether a required correction is performed by him or herself in his or her area of responsibility, or whether it is delegated in full or in part to lower-level managers. If delegation takes place, correction specifications are defined in more concrete terms.

Monitoring of Budget Planning

A check is performed as required or at regular intervals to determine whether the conditions are still valid under which the specifications for budget planning were defined.

A decision is made as to whether there is a definite need to act, and whether the specifications or the as yet unapproved budget plans must be corrected.

Benefits Administration

Benefits Administration

Definition

Benefits Administration has the task of providing employees at an enterprise with benefits. These benefits supplement or partly replace ordinary remuneration. They are normally used to ensure employees' general well-being within society (health plans, for example) or to provide employees with long-term financial security.

Benefits Administration

Purpose

Many enterprises offer their employees additional compensation elements in the form of benefits plans. Examples of benefits plans include profit sharing schemes, savings plans, health plans, and pension plans.

A set of rules stored in the R/3 System determines which employees are eligible to participate in which benefits plans, and their conditions of participation.

This enables an enterprise to offer a specific package of benefits plans to different groups of employees, or even to individual employees.

An individual employee can examine the benefits plans for which he or she is eligible, and then choose the ones that meet his or her requirements.

The *Benefits Administration* scenario provides an overview of the business processes that are relevant to benefits administration.

Process Flow

Design of Benefits Plans

When a benefits plan is designed, the benefits available to an employee should he or she decide to participate are determined, as well as the provisions that apply to participation in the plan and to how benefits are provided.

Design of Benefits Programs

Specific benefits programs are created for individual target groups at the enterprise. In this way, the benefits plans in which employees can choose to participate or the plans for which enrollment is automatic are determined.

Implementation of Benefits Program

The benefits program is publicized at the enterprise. If necessary, implementation actions are performed to prepare employees for the program's practical implementation. Examples of implementation actions include courses and information events.

Determination of Benefits Offer for Employees

An employee's benefits offer is determined when

- The employee is hired for the first time.
Once the benefits plans allowed for the new employee have been determined, a decision is made for each individual plan as to whether the employee's enrollment is obligatory, or whether the employee can choose to participate in the plan instead.
- The employee already participates in benefits plans, and employee data relevant to his or her participation has changed (for example, if the employee receives a pay increase, is transferred, marries, or has a child).
- The enterprise offers benefits plans for selection or adjustment. This usually occurs on a periodic basis, and the employee must make his or her selection within a specific period, such as once a year between November 1 and November 30.

Benefits Administration

In the last two instances, the benefits plans are determined to which the employee is entitled at a fixed point in time, as well as the benefits plans in which the employee currently participates. For each individual plan to which the employee is entitled or in which the employee participates, a decision is made as to whether

- Participation in the plan can continue unchanged
- The conditions of participation must be adjusted
- The employee must be enrolled in the plan
- The employee's participation in the plan must be terminated
- The plan must be offered to the employee for selection

If plans must be offered to the employee for selection or adjustment, the appropriate administrator transmits the offer together with additional information to the employee.

Benefits Selection

The employee receives information on

- The benefits offer that is valid for him or her
- The benefits plans in which he or she currently participates
- The provisions that apply to the selection of benefits plans

The employee can

- Select new benefits plans
- Change the conditions of participation in plans in which he or she already participates
- Terminate his or her participation in benefits plans

The employee transmits his or her request to the employer, together with any documents that are required.

Consistency Checks

The appropriate administrator checks the consistency of the selection made by the employee, including the specified parameters and submitted documents.

The checks determine

- Whether the required benefits plans are included in the individual offer made to the employee
- Whether no more than one plan is selected for each plan type
- Whether some of the plans are interdependent, and whether the selection takes account of this fact
- Whether the scope of the selected benefits is within the specified limits
- Whether the required documents have been submitted

If the employee's selection is consistent, the plans are released for enrollment.

If inconsistencies are discovered, the following options are available:

- The entire selection is referred back to the employee for correction.

Benefits Administration

- If documents required for an employee's enrollment in a benefits plan have not been submitted, the employee can be enrolled in the plan and simultaneously requested to obtain and submit the documents.

A check is also performed to determine whether the selection of new plans necessitates changing or terminating current plans.

Termination of Benefits Plans

Termination of an employee's participation in a benefits plan is recorded.

Changes to Benefits Plans

Changes to parameters that affect an employee's participation in a benefits plan are recorded.

Enrollment in Benefits Plans

An employee's participation in a benefits plan is recorded.

Confirmation of Adjustment to Benefits Participation

The employee is informed of changes made to his or her participation in benefits plans.

Transmission of Benefits Information to Service Partners

Information relevant to service partners that offer specific benefits included in benefits plans is transmitted.

Periodic Accounting for Benefits Plans

Accounting for benefits plans is usually performed as part of payroll. The contributions to be paid by the employer and the employee are calculated for the plans in which the employee participates, as well as the amounts to be paid to service partners.

Updating Employee Benefits Accounts

The amounts that are determined when accounting is performed for benefits plans are posted to employee benefits accounts.

Transmission of Benefits Amounts to Service Partners

The amounts payable as a result of participation in benefits plans are transmitted to the service partners.

Monitoring of the Enterprise Benefits System

The enterprise benefits system is checked at regular intervals or for specific reasons. Costs, return on investment, employee acceptance, and other criteria are analyzed. On the basis of these results, a decision is made as to whether there is a need for action. If so, the required action is defined in more detail.

Personnel Time Management

Personnel Time Management

Definition

Personnel Time Management encompasses the planning, recording, time-based evaluation, and monitoring of personnel times according to company-specific criteria.

Personnel Time Management

Process Flow

Personnel time planning determines long-term and operative work schedules for employees.

After the infrastructure for personnel time recording has been set up, employees' time data is entered. In addition to personnel times, additional specifications can be entered, which are then made available for the external case procedures *Allocation of external services*, *Internal activity allocation*, and *Payroll*.

The core case procedure of Personnel Time Management is day evaluation, whereby the recorded personnel time specifications and the specifications from personnel time planning are evaluated. Further case procedures are the determination of absence entitlements, compensation of absence entitlements, and the transfer of personnel times. The results of the case procedures are managed and updated in personnel time accounts.

Personnel time evaluation messages are generated in exceptional circumstances. Processing the messages can lead to corrections to personnel time specifications, personnel time quota statements, personnel time transfers, or personnel time planning specifications for the employee concerned.

The employee receives a time statement with a clear layout of all the recorded personnel times and the results of the case procedures.

Personnel Shift Planning - Operative

Process Flow

Creating an operative personnel shift plan

A personnel shift plan is to be created for a shift planning group at a specified time and for a specified planning period. Alternative schedules are created and valued on the basis of the information concerning the personnel requirements and the human resources. An alternative schedule is created when any changes are made to the previous personnel shift plan.

As a result of the valued alternative schedule, the shift planning process is either continued, or as soon as a satisfactory status is attained in the shift plan, it is recorded as the result of the shift planning process. The criteria used to value the status of the shift plan are dependent on the current application area. For example, you can value any non-optimal assignments of employees to requirements, or the number of overtime hours that individual employees must work. During the planning process, you may also notice that an operative personnel requirement cannot be covered with available human resources, or that the available human resources are not available to cover the requirement, in which case, the relevant process would be started, as determined by the possible courses of action.

Determine courses of action for covering operative personnel requirements

If, when creating an operative personnel shift plan, you realize that a personnel requirement cannot be entirely covered by the human resources available in the personnel shift planning group, you must retrieve information on the possible courses of action you can take. The courses of action are identified, and the most suitable is selected. The following situations may arise:

If you realize that the fact that the requirement could not be satisfactorily covered is not an individual, one-off occurrence, you may have to increase the number of employees for the long-term.

Depending on the circumstances, you may also be able to leave a personnel requirement temporarily uncovered.

In certain instances, you may be able to hire personnel on a short-term basis, allowing you to cover the requirement.

In addition, you may be able to transfer the task, and the related requirement, to another organizational plan unit.

The most common course of action taken to cover a requirement is to define employee working times in accordance with requirements. This includes defining working times, changing working times, and assigning them to employees.

Sometimes, you often have more room for maneuver in the personnel requirements than you initially thought. In such a case, you can reformulate the operative personnel requirement. For example, you may be able to change deadlines.

If there are not enough qualified employees to cover the personnel requirement, you may be able to perform operative personnel development actions, in order to provide these employees with the required qualifications.

Determine courses of action for using human resources

If, when creating an operative personnel shift plan, you realize that the human resources available in the current personnel requirement cannot be used to their full capacity, you must

Personnel Shift Planning - Operative

retrieve information on the possible courses of action you can take. The courses of action are identified, and the most suitable is selected. The following situations may arise:

- The most common course of action taken to use the full capacity of human resources is to define employee working times in accordance with requirements. This includes changing working times, or assigning short time.
- Sometimes, you often have more room for maneuver in the personnel requirements than you initially thought. In such a case, you can reformulate the operative personnel requirement. For example, you may be able to change deadlines.
- If the available employees are not qualified to cover the personnel requirement, you may be able to perform operative personnel development actions, in order to provide these employees with the required qualifications.
- In certain instances, you may be able to transfer the employees to another organizational plan unit that may have greater need for the employees.
- Depending on the circumstances, you may be able to transfer a task, and the related personnel requirement, from another organizational plan unit, ensuring that the available human resources are used to their full capacity.
- Depending on the circumstances, you may also be able to accept that an employee is not required in the current scenario.
- On the other hand, if you realize that the human resource cannot be used in the current personnel requirement on a longer basis, it may be a sign that you need to reduce the number of available employees.

Operative adjustment of personnel assignments for organizational plan units

If an organizational plan unit decides to hire new human resources, an enquiry is submitted to all other units for suitable employees. If another organizational plan unit offers to temporarily assign an employee who is not required for that period, you can perform a temporary assignment of employees. Sometimes, a group of relief employees exists. You can use this group to “borrow” or “lend” employees who are not required in the short term.

Operative adjustment of personnel requirement assignments for organizational plan units

If an organizational plan unit decides to transfer a task, along with the related personnel requirement, a release offer is created. If an organizational plan unit wants to accept additional tasks, a transfer offer is created. If a release offer and a transfer offer match, an operative transfer of employees from one organizational plan unit to another can be performed.

Payroll**Payroll****Definition**

The most important task in Payroll is the execution of regular payroll runs for the entitlements and benefits defined in the employment contract between the employee and employer.

Business Event Management

Definition

The **Business Event Management** enterprise area is concerned with planning, performing, and selling business events. Business event performance is accompanied by attendance administration.

Use

Business Event Management can be used by professional business event service providers, or by an enterprise's internal training department.

Business Event Planning and Performance

Business Event Planning and Performance

Purpose

The **Business Event Planning and Performance** scenario defines the following for business events: planning, offers, performance, and follow-up processing.

Process Flow

Overview

On the basis of the business event requirement, the organizer plans and creates his or her offer, which he or she then publicizes for (potential) attendees using advertising actions.

If there are sufficient attendees for business events, and if the required resources (instructors, rooms, equipment, materials, etc.) are available, the business event can be prepared and performed. Otherwise, it must be cancelled by the organizer. An appraisal of the business event attendees or of the business event can constitute part of business event performance. The results of the business event are then processed for the attendees and instructors, and transmitted to them.

Finally, the business event costs are identified with the cost object, and the business event fees are charged to the attendees.

Determining the Business Event Requirement

The qualitative and quantitative business event requirement and business event categories (subject areas, business event types, etc.) are determined.

First, the method of determining requirement is specified. The necessary information is then obtained from the market for sales, and requirement is determined according to the selected method.

The following can constitute information from the market for sales:

- Results of observing and analyzing the market,
- Requirements from the enterprise itself (personnel development's need for internal training events, sales and distribution's need for product-based training events, etc.), and
- Information on inquiries, prebookings, and orders (such as previous year's bookings, waiting list bookings) in business event attendance administration.

Creating the Business Event Catalog

The business event catalog - a program of services offered by the organizer - is created.

One or more alternatives are created and evaluated for the business event catalog, based on the business event requirement, the situation on the market for procurement of business event resources, and the strategy of the enterprise. Finally, a decision is made to adopt one of the alternatives as the business event catalog. If the business event catalog exists, the services of the organizer that it describes can be offered, and actual business events can be planned.

Business Event Planning

Business event dates are planned.

Business Event Planning and Performance

First, information is obtained on the business event requirement and on the availability of resources, particularly key resources.

One or more alternative overall schedules are created. The alternatives are evaluated, and a decision is made as to which business event dates are offered, and which areas of the business event requirement are not covered in this period. Finally, business event resource administration is requested to reserve the obligatory business event resources, and to take account of further resource requirements in its planning. The business event dates can be offered.

Business Event Resource Planning

The method of obtaining resources required for business events, and the method of using the obtained resources, are planned.

Business Event Resource Reservation

The resources are obtained in accordance with resource planning: business event resources are reserved or cancelled, or reservations are changed. For example, instructors who are employees at the enterprise itself are obligated by operative shift planning. Materials are reserved by warehouse management or procured by purchasing.

Business Event Advertising

The organizer's business event offer is publicized.

The organizer makes decisions on the target group and subject matter of the advertisement, the advertising instruments and media to be used, and the finances available. A purchase requisition is created using the *business event advertising* service.

Preparing Business Event Performance

At a fixed time prior to the scheduled start of the business event, the number of attendees booked for the business event and the availability of business event resources are used to decide whether the business event can be performed, whether it must be cancelled, or whether business event planning needs to be corrected.

If the business event can be performed, the final list of attendees is determined. On this basis, the final resource requirement is determined. The attendees receive further documents, if necessary, and attendees on the waiting list must be cancelled and, if possible, provided with an alternative offer.

Business event resource administration is requested to obtain outstanding resources.

If the business event must be cancelled, attendees must be cancelled and, if possible, provided with an alternative offer. Reserved resources must be released, and incurred business event costs must be allocated or reposted.

Business Event Performance

The business event is performed according to the specifications.

Appraising the Business Event

The business event and associated factors are evaluated by the persons involved.

As a rule, the appraisers are the business event attendees. Appraisers can also be instructors, or the departments or enterprises to which the attendees belong.

The appraisal specifications - that is, the appraisers, the appraisal criteria and methods to be used, and other general organizational criteria - were determined when the business event catalog was created.

Business Event Planning and Performance

First, the appraisers, criteria, and methods are determined, and the appraisal procedure is specified. The appraisal is then performed.

Appraising Business Event Attendees

The degree to which a business event attendee acquired the qualifications imparted by the business event is appraised. As a rule, the appraisal is performed by the instructor. However, other persons can also be requested to perform the appraisal.

The appraisal specifications - that is, the appraisers, the provisions, the question of which attendees must be appraised according to which appraisal criteria and methods, and other general organizational criteria - were determined when the business event catalog was created.

First, the appraisers, appraisees, criteria, and methods are determined, and the appraisal procedure is specified. The appraisal is then performed.

Processing Business Event Results

The business event results are processed and transmitted to the attendees and instructors (statements, resulting reports, materials for follow-up processing, etc.)

Settling and Allocating Business Event Fees

The attendees are billed for attendance fees, and possibly for replacement, rebooking, and cancellation fees. The amount of the fees and the methods of payment have already been determined in business event attendance administration.

First, a list is created of fees incurred. Fees that have already been billed are taken into account. The items to be settled or allocated are then selected. Finally, these items are forwarded to sales and distribution or controlling for billing or internal activity allocation. On the basis of existing billing documents, billing documents may need to be cancelled and/or credit memos created.

Allocating and Reposting Business Event Costs

After a business event has been performed or cancelled, incurred business event costs must be identified with the cost object for the business event.

First, a list is created of business event costs incurred. The items to be allocated or reposted are then selected. Finally, these items are forwarded to controlling for cost transfer or internal activity allocation.

Business Event Monitoring

The organizer's activities are monitored for specific reasons, or at regular intervals.

Particular emphasis is placed on monitoring the attractiveness of the business event catalog and offer, the quality, performability, and profitability of business events, the ratio of demand and/or requirement to the business event dates offered, and the degree to which business event resources are employed.

On the basis of the analysis performed, decisions may be made as to whether the business event requirement must be determined, and whether the business event catalog and/or business event planning must be corrected.

On the basis of a market analysis or explicit business event attendee requirements, for example, a new business event type can be included in the catalog. If demand for a business event is low, an advertising campaign may be necessary. If demand for business events of a business event type is high, additional business events can be scheduled.

Business Event Attendance Administration

Purpose

The **Business Event Attendance Administration** scenario defines processing for inquiries and orders from (potential) business event attendees.

Process Flow

Overview

Interested parties ask about the conditions of business event attendance, receive offers, or are notified that their interest in attendance has been prebooked.

Business event attendees register for business events, cancel business event attendance, require a replacement candidate to attend in their place, or intend to change business events.

The organizer endeavors to meet their orders. If this is not possible, he or she suggests alternatives.

He or she can also cancel business event attendance.

Entering a Business Event Attendee Inquiry

The organizer receives an inquiry regarding business events and conditions of attendance. It can also refer to a subject area that is not yet covered by the business event offer.

First, the potential business event attendee's personal data is entered or updated. Finally, the inquiry is entered and forwarded to the department responsible for making offers so that it can be answered. A confirmation of receipt can be generated if required.

Creating a Business Event Attendance Offer

For a specific reason, the organizer creates an offer for a (potential) business event attendee. For example, an offer can be made as a reply to an inquiry, or as an alternative to an order that cannot be met by the organizer.

On the basis of information on possible business events, the places available, and the attendee himself/herself, the required places are reserved (if possible), and the conditions of attendance and the offer's validity period are determined. The offer must be transmitted to the attendee.

If an offer cannot be created, the attendee's requirement is prebooked. It can be taken into account by business event planning.

Registration Order Processing

The organizer has received a registration order. Part of a replacement or rebooking order can constitute this order.

First, the business event attendee's personal data is entered or updated.

The order is then entered.

If the attendee meets the prerequisites (qualifications, creditworthiness, etc.), and if sufficient places are available (that is, places that have not been reserved or have been reserved for the attendee), the attendee is registered. If attendance is not free, the attendance fee is calculated and the methods of payment are determined. The attendee can receive a (provisional or final)

Business Event Attendance Administration

confirmation of registration. Furthermore, business event attendance can be taken into account by shift planning for an employee who works at the enterprise itself.

If the attendee does not meet the prerequisites, or if insufficient places are available, attendance is rejected and the attendee is informed of this decision. He or she can be made an alternative offer.

Enterprise-specific policies can determine that the organizer finds places for the business event attendee by displacing other attendees. In this way, an employee at the enterprise itself can be put on the waiting list or have his or her attendance cancelled so that an important customer can attend the business event concerned.

Replacement Order Processing

The organizer receives an order to replace a business event attendee with another. The organizer enters the replacement order. He or she reserves the place of the attendee to be replaced for the replacement attendee, and registers him or her for the business event concerned.

If the registration is successful, the replacement order can also be completed successfully: attendance is cancelled for the attendee to be replaced, and the replacement fee is calculated. The parties involved must be notified. If the employees work at the same enterprise, the changed times can be taken into account by shift planning.

If the replacement attendee's attendance is rejected, the replacement order must be rejected too. The attendee is notified of the decision. He or she must be made an alternative offer, if possible.

Rebooking Order Processing

The organizer receives an order to rebook a business event attendee from one business event to another.

The organizer enters the rebooking order, and registers the attendee for a different business event.

If the registration is successful, the rebooking order can also be completed successfully: the old attendance is cancelled, and the rebooking fee is calculated. The attendee must be notified. If the employee works at the same enterprise, the changed times can be taken into account by shift planning.

If attendance is rejected, the rebooking order must be rejected too. The attendee is notified of the decision. He or she must be made an alternative offer, if possible.

Cancellation Order Processing

The organizer receives an order from a business event attendee to cancel a business event attendance. This order can constitute part of a replacement or rebooking order.

The business event attendance is cancelled, and the cancellation fee is calculated. The place in the business event is available again. If an employee works at the enterprise itself, the times reserved for the business event attendance can be released again. The attendee must be notified of the order's performance.

Cancelling a Business Event Attendance

The organizer cancels a business event attendance. This may be necessary if, for example, the business event concerned had to be cancelled, or if it is clear that an attendee on the waiting list is not going to be able to attend the business event.

Business Event Attendance Administration

The attendance is cancelled. If the business event is still offered, the place is available again. If an employee works at the enterprise itself, the times reserved for the business event attendance can be released again.

The attendee must be notified of the organizer's decision. He or she must be made an alternative offer, if possible.

Notification of Business Event Management

The parties involved in Business Event Management must be informed of the status of business event planning, the processing status of inquiries and orders, and possible alternatives.

Depending on the type of triggering activity, the recipients and transmission route are determined. The notification is created and transmitted to the recipient or recipients together with an offer of business event attendance, if necessary.

Travel Management

Travel Management

Definition

Travel Management represents an area of functions that support all of the business processes involved in business trips. This includes both planning and preparation of trips and settlement and posting of incurred costs.

Use

The following processes are supported, for example:

- Planning of trips
- Booking of travel services (such as flights, hotels, car rentals)
- Travel requests and approval of trips
- Entry of trip data
- Determination and evaluation of reimbursement amounts according to statutory and enterprise-specific regulations
- Settlement of travel expenses according to specified statutory regulations

Travel Management

Purpose

The Travel Management scenario provides an overview of the business processes involved when business trips are planned and approved, and travel expenses are settled. Interfaces to Payroll and Financial Accounting ensure that the travel expenses to be reimbursed are properly posted, taxed, and paid.

Process Flow

Entering a planned trip

If an employee plans to go on a business trip, he or she enters the anticipated trip facts in the system. These include the dates on which the trip starts and ends, the destinations, the reason for the trip, the chosen means of transportation, the expected accommodation costs, possibly an advance, and the CO objects (costs centers, orders, and so on) to which the travel expenses are to be debited.

After the employee has entered all of the required data, he or she releases the planned trip for approval.

Approving a planned trip

The employee's superior is responsible for approving the trip. He or she checks the planned trip and decides whether it can be approved as it is, or if it should be corrected, or rejected. The employee is informed about the superior's decision.

Paying an advance

After the trip has been approved, a trip advance is paid to the employee by check or bank transfer. The trip advance can consist of several amounts in different currencies. Paid amounts are transferred to Financial Accounting for posting.

Entering trip data

After the employee has taken the planned business trip, the anticipated trip facts are replaced and supplemented with the actual trip facts. They are then released with the original documents for checking.

Approving the reimbursement of travel expenses

The expenses department is responsible for verifying the trip facts. It determines whether the trip facts entered are plausible and comply with the statutory or enterprise-specific travel regulations. Furthermore, consistency with the original (or facsimile) documents is checked. The original (or facsimile) documents are transferred to the optical archive. If the trip facts are consistent, the trip is transferred to the employee's superior for approval.

The superior checks the trip facts. The superior checks the trip facts and decides whether the trip can be approved as it is, and released for settlement, or that the reimbursement of the travel expenses has to be rejected.

Travel Management

The reimbursement of travel expenses can be rejected, for example, if the reason for the trip is not in the interests of the enterprise.

Settlement of Travel Expenses

After the superior has approved the trip facts, the expense department settles the travel expenses. The travel expenses settlement results are determined on the basis of the employee's Travel Privileges, the trip provisions, and the trip facts. They include, above all, the reimbursement amounts.

After the travel expense results have been determined, they are transferred to Financial Accounting for posting. The reimbursement amounts can be paid to the employee by check, by bank transfer, or via Payroll. Depending on the chosen payment method, the amounts are written with the required additional information to the appropriate application components (Payroll /Financial Accounting). If the calculation of reimbursement amounts results in amounts that are liable for employment tax, they are transferred to Payroll.

The employee can request a travel expenses statement, which contains the trip facts and all of the relevant settlement results.

Retailing

Definition

The **Retailing** enterprise area includes the procurement, storage, distribution and sale of goods. Scenarios are supported in both the retail and wholesale sectors.

Goods movements are planned and tracked at every stage in the supply chain using a Retail Information System.

Key retailing processes are:

- Assortment management
- Sales pricing
- Promotion management
- Stock assignment
- Materials planning and ordering
- Goods Receipt
- Invoice verification and rebate management
- Warehouse Management
- Picking and delivery
- Billing
- Store supply

Use

The retailing business processes play a crucial role in controlling and the complete monitoring of the whole value chain, thus enabling retailers to react swiftly to changes in consumer behavior (efficient consumer response - ECR).

Article-Oriented Master Data

Article-Oriented Master Data

Purpose

The scenario describes the creation and maintenance of articles and merchandise categories. Information on the article master is required for:

- Accurate requirements planning
- Sales reporting
- Handling goods in distribution centers and stores

In SAP Retail, merchandise that is managed in stock is referred to as articles.

The following R/3 components are used:

R/3 component	Functions
Logistics Basic Data	Creating merchandise categories and merchandise category hierarchies Reclassifying merchandise categories Creating and deleting articles Reclassifying articles

Process Flow

Merchandise category

1. You create the merchandise category hierarchy levels by maintaining basic data for the merchandise category hierarchy level in question.
2. You assign merchandise category hierarchy levels (top-down assignment).
3. You create merchandise categories by maintaining the basic data for the merchandise category and a merchandise category article for the merchandise category.
4. You assign a direct merchandise category hierarchy level to the merchandise category and select merchandise category articles as required.

Article

1. You define the article type and category and assign the article to one merchandise category.
2. You define the organizational levels and the views you wish to maintain.
3. You maintain the master data for the views selected.

Reclassification

You reassign articles, merchandise categories and merchandise category hierarchy levels to new positions within a merchandise category hierarchy.

Article discontinuation

You discontinue an article for a particular:

- site

- vendor
- client

and delete the article.

Partner-Oriented Master Data

Partner-Oriented Master Data

Purpose

The scenario describes the creation and maintenance of:

- Sites (stores or distribution centers)
- Vendors
- Customers

Partner-oriented master data is required for controlling:

- Merchandise flow
- Information flow
- Cash flow

The following R/3 components are used:

R/3 component	Functions
Logistics Basic Data	Creating and deleting sites Maintaining vendors and vendor hierarchies Maintaining customers and customer hierarchies Classification

Process Flow

Site

1. You assign the site a number and a site profile. You can also enter a reference site.
2. Depending on your requirements, you maintain additional data, such as the supplying sites, the departments and the merchandise categories.
3. You maintain the customer data for the site.
4. You maintain the vendor data for the site if the site profile requires it.

Vendor

1. You first assign the vendor an account group. This allows you to define the vendor function (such as goods vendor, carrier, or invoicing party).
2. You maintain general data, purchasing data and company code data for your vendor.
3. You maintain vendor hierarchies and are therefore able to create flexible vendor structures that model the organizational structure of these groups.

Customer

1. You first assign the customer an account group. This allows you to define the customer function (such as the sold-to party, invoice recipient, payer or goods recipient).
2. You maintain general data, distribution chain-specific data, and the customer company code data.

Partner-Oriented Master Data

3. You maintain customer hierarchies and are therefore able to create flexible customer structures that model the organizational structure of these groups.

Classification

In Classification, you can describe sites, vendors, and customers using vendors, and group these into classes using freely definable criteria.

Article/Partner-Oriented Master Data

Purpose

The scenario describes the link between the article-oriented and the partner-oriented master data.

The following R/3 components are used:

R/3 component	Functions
Master data	Creating assortment modules and assigning sites/customers Calculating sales prices Planning and carrying out promotions Creating product catalogs
Purchasing	Maintaining source lists and quota arrangements Conditions, subsequent settlement
Shipping	Creating route schedules
Sales	Sales Support Concluding outline agreements with customers Conditions, subsequent settlement

Process Flow

Assortments

In addition to the recommended method of maintaining the assortment as part of article maintenance, you can create assortment modules and assign sites/customers to these. In this process, you define the articles that a particular site can sell, for example.

Outline Agreements

You can conclude **outline agreements** with both vendors and customers. In doing so, you agree with your partner fixed quantities or values that you will procure or issue over a certain period.

Subsequent Settlement

You can agree with your vendor or customer conditions that require subsequent settlement. Unlike conditions that are due immediately, conditions that require subsequent settlement are due at the end of a settlement period.

Route Schedules

If you want to deliver to your stores or customers at regular intervals (time-phased delivery), you can define the required delivery dates in a **route schedule**.

Sources of Supply

1. In the **source list** you enter the permitted sources of supply, such as vendor or outline agreement, for each site and article for a specific time.

Article/Partner-Oriented Master Data

2. You maintain a **quota arrangement** if you want to allocate certain percentages of your article requirement to various sources of supply.

Conditions

When you maintain conditions, you define the value that is valid for a condition type (such as a price or discount) for a specific period with reference to a condition level (such as article, merchandise category or vendor sub-range).

Pricing

You can use sales price calculations to calculate the sales price of an article for a store and the warehouse transfer price of an article for a distribution center. If purchase prices change, you can have the system automatically recalculate the sales prices of the articles concerned.

Product Catalogs

In product catalogs, you define the articles that are to be presented to the customer in the form of printed catalogs, Internet pages and so on, together with the related multimedia objects (such as photos and videos).

Promotions

To boost store sales, you define promotions for articles that have special purchase or sales price conditions, for example, for the promotion period. You can include new articles in your assortment especially for the promotion.

Season

Markdown planning allows you to establish dates for scheduled markdowns before the start of a season and monitor planned vs. actual sales on a regular basis to see how well the markdown strategy is working.

Additional

You can assign additional to an article to ensure the effective presentation of that article to customers. Examples of additional are: care labels, security tags, swing tickets, clothes hangers, and services such as arranging clothing on hangers for display. "Additional" in SAP Retail can mean tickets (price labels).

Sales Support

You use sales support to record and manage information about customers, competitors, and their products for the purposes of customer service and business development.

Promoting of Sales

You use sales deals in SAP Retail if you want to carry out strategic or operational marketing activities for your customers. You define customer or product-specific discounts in the form of conditions at sales deal level. Several sales deals can be combined as an SD promotion (for example for a particular product group). SD promotions and sales deals can be evaluated in Profitability Analysis.

Space Management

You use this process to provide an external space management program with data, and receive the results of space management, if required.

Procurement from a Vendor

Purpose

This scenario describes the procurement and management of articles from an external vendor for a store or distribution center. It describes the whole process from buyers negotiating with vendors to verifying invoices after the goods have been received in the store or distribution center.

The following R/3 components are used:

R/3 component	Functions
Forecasts	Carrying out forecasts
Consumption-Based Planning	Carrying out requirements planning and replenishment
Purchasing	Creating purchase requisitions Creating RFQ, comparing and selecting quotations Creating and sending purchase orders, contract release orders, and delivery schedules Optimizing purchase orders Allocating articles
Warehouse Management/Inventory Management	Receiving articles, placing them in stock, managing and valuating them
Quality Management	Carrying out quality inspections at goods receipt
Invoice verification	Verifying and posting invoices, authorizing payment

Process Flow

Requirements Planning

The first step in the process of article procurement is the creation of a purchase requisition.

- In requirements planning, the purchase requisition can be created automatically by the system. If the source of supply for an article is unique, the system assigns it to the article.



In replenishment, the system can create purchase orders at this stage if the source of supply is unique and the appropriate settings have been made in Customizing.

- If the article is required in other areas of the company, you must create the purchase requisition manually.

Procurement from a Vendor

Allocation

During allocation you can centrally distribute merchandise among a large number of recipients (for example, stores). Using allocation tables, you can plan the distribution of this merchandise and then trigger the purchase orders.

Ordering

- **Purchase requisitions**

Purchase requisitions with specific source of supply can be converted into purchase orders, contract release orders or scheduling agreement schedule lines automatically or manually.



In the case of a purchase requisition that does not contain a source of supply, you must assign a source of supply manually before you convert it to a purchase order.

- You monitor the purchase order. The system can print reminders automatically if required, and you can then send these reminders to the vendors.

Order Optimizing

The system can optimize purchase orders by taking account of vendor constraints (such as the minimum purchase quantity).

Transportation

You plan the physical transport to your company of the goods on-order, manage the shipment and handle billing with the freight carrier.

Goods Receipts

As soon as the ordered goods arrive in the company, you post the goods receipt.

Quality Inspections at Goods Receipt

Following goods receipt, you can carry out a quality inspection with the support of R/3.

- If you release the article, the system posts the goods to unrestricted-use stock.
- If you reject the article, you can have the system automatically issue a complaint against the vendor. You can then return the article to the vendor.

Warehouses

You put the goods received into storage bins. The system can use stock placement strategies to automatically determine these storage bins.

Invoice Verification

When you receive an invoice from the vendor you carry out invoice verification either

- automatically in the background or
- online

with reference to the purchase order or goods receipt and release the invoice once any discrepancies have been clarified.

Procurement from a Distribution Center

Purpose

This scenario describes the procurement and management of articles from a distribution center for a store or another distribution center. It describes the whole process from planning the requirements to receiving the goods in the store or distribution center.

The following R/3 components are used:

R/3 component	Functions
Forecasts	Carrying out forecasts
Consumption-Based Planning	Carrying out requirements planning and replenishment
Purchasing	Creating purchase requisitions Creating warehouse orders Allocating articles
Warehouse Management/Inventory Management	Receiving articles, placing them in and removing them from storage, managing and valuating them
Shipping	Creating deliveries Picking articles Posting goods issue
Transportation	Planning and processing shipments
Billing	Carrying out intercompany billing for goods movements

Process Flow

Requirements Planning

The first step in the process of article procurement is the creation of a purchase requisition.

- In requirements planning, the purchase requisition can be created automatically by the system. If the source of supply for an article is unique, it is assigned to the article.



In replenishment and with store orders, the system can create warehouse orders and deliveries at this stage if the source of supply is unique and the appropriate settings have been made in Customizing.

- If the article is required in other areas of the company, you must create the purchase requisition manually.

Procurement from a Distribution Center

Allocation

During allocation you can centrally distribute merchandise among a large number of recipients (for example, stores). Using allocation tables, you can plan the distribution of this merchandise and then trigger the warehouse orders or deliveries.

Ordering

Purchase requisitions

Purchase requisitions with specific source of supply can be converted into warehouse orders automatically or manually.



In the case of a purchase requisition that does not contain a source of supply, you must assign a supplying site manually before you convert it to a warehouse order.

Shipping

1. You create deliveries from warehouse orders that are due for shipping.
2. You then remove the goods from storage using the Picking function. Pick waves can be used to create work packages for picking activities.
3. When picking is complete you post the goods issue.

Warehouses

The system can automatically determine the storage locations from which the goods are to be picked using stock removal strategies.

Transportation

You can group deliveries that are due for transportation into shipments. You can plan shipments and track them closely using Transportation Processing.

Billing

Invoices are created for deliveries of goods to sites in a different company code.

Goods Receipts

As soon as the goods arrive in the ordering site you post a goods receipt.

Warehouses

If required, you put the goods received into storage bins. The system can use stock placement strategies to automatically determine these storage bins.

Merchandise Distribution with Cross-Docking

Purpose

This scenario describes how the flow of goods from the vendor to the recipient (store or customer) can be controlled if the recipient of the article is known at the time of procurement. You use an allocation table ("push" process) or a collective purchase order ("pull" process) to control distribution planning. You can place the goods in storage in the distribution center, or move them through the distribution center using cross-docking or flow-through.

The following R/3 components are used:

R/3 component	Functions
Merchandise Distribution	Generating collective purchase orders Creating allocation tables and generating follow-on documents Adjusting merchandise distribution
Shipping	Creating deliveries Creating picking orders Posting goods issues
Warehouse Management (Lean WM)	Creating distribution orders

Process Flow

Collective Purchase Orders/Allocation Tables

Merchandise Distribution begins with the planning phase:

- Collective purchase orders: In the case of pull scenarios, you combine the warehouse orders or sales orders for the recipients and generate a collective purchase order for the vendors.
- Allocation tables: In the case of push scenarios, you plan the distribution using an allocation table and then generate issue documents for the recipients and purchase orders for the vendors.

The distribution data that is used to create the link between the procurement and issue documents is updated in the planning phase.

Goods Receipts

The goods are delivered to your distribution center and the goods receipt is posted.

Adjustment

If the procurement document is over or underdelivered, in the course of the adjustment the goods are distributed among the individual recipients based on the distribution algorithm you use. You can have the system make this adjustment automatically when you post the goods issue.

Merchandise Distribution with Cross-Docking**Warehouses**

Depending on how the goods are to be processed in the distribution center, the following scenarios exist:

- Cross-docking: The goods are posted to a cross-docking storage location. Deliveries are then generated. Picking is not required.
- Merchandise-driven flow-through: The goods are posted to a storage location for merchandise-driven flow-through. Distribution orders are then generated and are used to distribute the goods to the recipients. A delivery is generated for each complete shipping unit (for example, pallet) for a recipient.
- Recipient-driven flow-through: The goods are posted to a storage location for recipient-driven flow-through. Deliveries are then generated, and the merchandise is picked.

Shipping

1. You move the merchandise to the goods issue zone.
2. The goods issue is posted.

Procurement via Instore Systems

Purpose

This scenario describes a streamlined (“lean”) version of merchandise procurement that can be used by a store without connection to an R/3 system to procure merchandise offline.

The following R/3 components are used:

R/3 component	Functions
POS interface, Inventory Management	Processing store orders, sales/returns, goods receipts and special goods movements received by the central system from the store

Prerequisites

Use of an instore distributed retailing system (DRS).

Process Flow

Merchandise Procurement

The instore system transfers requirements to the central R/3 system on the basis of requests for merchandise or the replenishment requirements that have been calculated for the store. When the central R/3 system processes the store orders, the store orders are converted into vendor orders, warehouse orders or deliveries.

Goods Receipts

Once the store has received the merchandise, the instore system sends the goods receipt data to the central R/3 system using IDocs, so that Invoice Verification can be carried out centrally, for example.

Other Goods Movements

Data about sales, returns and special goods movements is sent by the instore system to the central R/3 system in IDocs. This data is used in a variety of functions, including Inventory Management, Replenishment and the Information System.

SAP Retail Store

SAP Retail Store

Purpose

This scenario describes a distributed retailing system for a store that links retail functions via the Web browser of the Internet Transaction Server (ITS) with the transactions of the central SAP Retail system.

R/3 component	Functions
Logistics Basic Data	Transferring information on promotions to stores and, if necessary, reporting changed quantities to head office.
Merchandise Distribution	Transferring information on allocations to stores and, if necessary, reporting changed quantities to head office.
POS Interface	Entering store orders and transferring them to the head office
Sales	Entering sales orders and transferring them to the head office
Inventory Management	Transferring goods receipt, stock transfer and physical inventory data to stores and receiving data entered instore

Prerequisites

A link must exist with the central R/3 system while data is being accessed.

Process Flow

Information

The R/3 system transfers all the information relevant for a particular store to the store. This includes, for example, information about listing, promotions, vendors, forthcoming goods receipts, and stocks.

Purchasing

The R/3 system transfers the store order requests to the distribution center or the vendor.

Sales

Sales order articles available in the store or that have to be procured especially for the customer are ordered for and sold to the customer.

Goods Movement

Expected changes in stock levels are reported to the store and changes to the stock level of the store are reported to the head office.

Results

Merchandise and information flows are communicated.

Sales at the POS

Purpose

This scenario describes the communication between the POS system in a store and a central R/3 system and explains which data is processed in which system.

The following R/3 components are used:

R/3 component	Functions
Logistics - General	Transmitting data for additions to stores
Inventory Management	Revaluating Inventory at Retail
Sales	Processing goods offered to customers on approval
POS Interface	Preparing master data in the central R/3 system for transmission to stores. Processing master data in the store Processing financial transactions data received from the store

Process Flow

1. POS outbound processing
Changes to master data, such as the sales price, listing data or labeling data, for example, are prepared in the central R/3 system for transmission to the store.
2. POS inbound processing
Data entered at POS is sent to the central R/3 system in IDocs. The stock accounts are then updated in the central system in the background.

Sales Order Processing

Sales Order Processing

Purpose

This scenario describes the process of managing sales orders, from entering the order to billing. The articles in question are removed from your warehouse stock and delivered to the customer.

The following R/3 components are used:

R/3 component	Functions
Consumption-Based Planning	Managing replenishments for customers
Sales	Processing sales orders
Risk/Credit Management	Checking credit limits Securing guarantee of payment for open items
Shipping and Warehousing	Processing deliveries Removing articles from stock Posting goods issues
Transportation	Planning and processing shipments
Foreign trade	Carrying out export controls Creating reports to send to the authorities
Billing	Processing invoices, credit/debit memos and volume-based rebates

Process Flow

Requirements Planning

Based on sales data, you can plan replenishments for external customers and automatically generate sales orders.

Sales Orders

On the basis of an agreement which you have made at short notice to deliver articles to a customer, you enter a sales order in the system. You can make use of the following central functions here:

- Price calculation and price determination
- Availability checks
- Delivery scheduling
- Credit limit check
- Export control

Risk/Credit Management

You can use the Credit Management function to check credit limits in different ways (statically or dynamically, for example). You can perform the check at various different stages in sales order processing: when you create the order, in the delivery or at goods issue, for example.

Shipping

1. You create deliveries from sales orders that are due for shipping.
2. You then remove the goods from storage using the Picking function. Pick waves can be used to create work packages for picking activities.
3. You pack delivery items by assigning the articles to shipping materials.
4. When picking is complete you post the goods issue.

Warehouses

You can link up to Warehouse Management (WM) functionality during picking. If you choose to pick using Warehouse Management (that is, with transfer orders), you can split the transfer orders, for example, and ensure accurate performance-related payment for the picker.

Transportation

You can group deliveries that are due for transportation into shipments. You can plan shipments and track them closely using Transportation Processing.

Foreign Trade

In foreign trade processing you can carry out export controls on the basis of export licenses and generate reports (Intrastat, for example) required by the authorities.

Billing

1. Invoices are issued on the basis of deliveries.
2. You can use the invoice list function to send a payer a list of billing documents together on one date.

Direct Customer Delivery

Direct Customer Delivery

Purpose

This scenario describes the sale of articles that are not managed in your company as part of the inventory of the distribution center. On the basis of the SD document involved, the system generates a purchase requisition and then a purchase order for an external vendor. The vendor delivers the goods direct to the customer.

The following R/3 components are used:

R/3 component	Functions
Consumption-Based Planning	Managing replenishments for customers
Sales	Processing sales orders
Credit Management	Checking credit limits Securing guarantee of payment for open items
Foreign trade	Carrying out export controls Creating reports to send to the authorities
Purchasing	Creating purchase requisitions, creating and sending purchase orders/release orders
Invoice verification	Verifying and posting invoices, authorizing payment
Billing	Processing invoices, credit/debit memos and volume-based rebates

Process Flow

Requirements Planning

Based on sales data, you can plan replenishments for external customers and automatically generate sales orders.

Sales Orders

On the basis of an agreement which you have made at short notice to deliver articles to a customer, you enter a sales order in the system. In sales order processing, the purchase requisition can be created automatically by the system.

Risk/Credit Management

You can use the Credit Management function to check credit limits in different ways (statically or dynamically, for example). You can perform the check at various different stages in sales order processing: when you create the order, in the delivery or at goods issue, for example.

Foreign Trade

In foreign trade processing you can carry out export controls on the basis of export licenses and generate reports (Intrastat, for example) required by the authorities.

Ordering

- **Purchase requisitions**

Purchase requisitions with specific source of supply can be converted into purchase orders, contract release orders or scheduling agreement schedule lines automatically or manually.

- **Purchase orders**

You monitor the purchase order. The system can print reminders automatically if required, and you can then send these reminders to the vendors.

Invoice Verification

When you receive an invoice from the vendor you carry out invoice verification either

- automatically in the background or
- online
- with reference to the purchase order and release the invoice once any discrepancies have been clarified.

Billing

1. The bill is drawn up on the basis of the vendor invoice or the shipping notification sent by the vendor.
2. You can use the invoice list function to send a payer a list of billing documents together on one date.

Procurement for Individual Customers

Procurement for Individual Customers

Purpose

This scenario describes the sale of articles that are not managed in your company as part of the inventory of the distribution center. On the basis of the SD document involved, the system generates a purchase requisition and then a purchase order for an external vendor. The vendor delivers to the distribution center. The goods are then received and later delivered to the customer.

The following R/3 components are used:

R/3 component	Functions
Consumption-Based Planning	Managing replenishments for customers
Sales	Processing sales orders
Credit Management	Checking credit limits Securing guarantee of payment for open items
Purchasing	Creating purchase requisitions, creating and sending purchase orders/release orders
Warehouse Management/Inventory Management	Receiving articles, placing them in stock, managing and valuating them
Quality Management	Carrying out quality inspections at goods receipt
Invoice verification	Verifying and posting invoices, authorizing payment
Shipping and Warehousing	Creating deliveries Picking articles Posting goods issues
Transportation	Planning and processing shipments
Foreign trade	Carrying out export controls Creating reports to send to the authorities
Billing	Processing invoices, credit/debit memos and volume-based rebates

Process Flow

Requirements Planning

Based on sales data, you can plan replenishments for external customers and automatically generate sales orders.

Sales orders

On the basis of an agreement which you have made at short notice to deliver articles to a customer, you enter a sales order in the system. In sales order processing, the purchase requisition can be created automatically by the system.

Risk/Credit Management

You can use the Credit Management function to check credit limits in different ways (statically or dynamically, for example). You can perform the check at various different stages in sales order processing: when you create the order, in the delivery or at goods issue, for example.

Ordering

- **Purchase requisitions**
Purchase requisitions with specific source of supply can be converted into purchase orders, contract release orders or scheduling agreement schedule lines automatically or manually.
- You monitor the purchase order. The system can print reminders automatically if required, and you can then send these reminders to the vendors.

Goods Receipts

As soon as the ordered goods arrive in the company, you post the goods receipt.

Quality Inspections at Goods Receipt

Following goods receipt, you can carry out a quality inspection with the support of R/3.

- If you release the article, the system posts the goods to unrestricted-use stock.
- If you reject the article, you can have the system automatically issue a complaint against the vendor. You can then return the article to the vendor.

Warehouses

You put the goods received into storage bins. The system can use stock placement strategies to automatically determine these storage bins.

Invoice Verification

When you receive an invoice from the vendor you carry out invoice verification either

- automatically in the background or
- online

with reference to the purchase order or goods receipt and release the invoice once any discrepancies have been clarified.

Shipping/Warehousing

1. You create deliveries from sales orders that are due for shipping.
2. You then remove the goods from storage using the Picking function.
3. You pack delivery items by assigning the articles to shipping materials.
4. When picking is complete you post the goods issue.

Procurement for Individual Customers**Transportation**

You can group deliveries that are due for transportation into shipments. You can plan shipments and track them closely using Transportation Processing.

Foreign Trade

In foreign trade processing you can carry out export controls on the basis of export licenses and generate reports (Intrastat, for example) required by the authorities.

Billing

1. Invoices are issued on the basis of deliveries.
2. You can use the invoice list function to send a payer a list of billing documents together on one date.

Closing/Periodic Processing

Purpose

This scenario describes processes that are executed periodically:

- Physical inventory work at the end of a period, year or at pre-defined times.
- Other activities to be carried out at pre-defined times, such as subsequent settlement of end-of-period arrangements.

The following R/3 components are used:

R/3 component	Functions
Consumption-Based Planning	Transfer of stock and movement data to vendor
Purchasing	Update of business volume in purchase orders, goods receipts and invoice verification Carrying Out Business Volume Comparison and Agreement Calculating remuneration
Sales	Updating business volume in billing documents Calculating remuneration
Warehouse Management/Inventory Management	Printing and distributing physical inventory documents Entering stocks Analyzing physical inventories and posting differences
Agency Business	Settling payments and commissions

Process Flow

Transfer of Stock and Movement Data to Vendor

You use this process to transfer information on sales data, stock levels and open purchase order quantities (quantities on-order) by electronic data interchange (EDI) to your vendors. This enables the vendor, for example, to plan replenishments of his products in your sites (vendor-managed inventory, VMI).

Subsequent Settlement

- **Conditions for subsequent settlement**
You can agree conditions with your vendor that require subsequent settlement. Unlike conditions that are due immediately for the vendor invoice, conditions that require subsequent settlement are due at the end of a settlement period.

Closing/Periodic Processing

- **Rebate settlement**

A credit memo is created for your customers for the purposes of rebate settlement on the basis of all the relevant invoices and credit/debit memos. The stipulations you defined in the volume rebate arrangement are taken into account. Partial payments of the rebate are possible and are taken into account in the final settlement.

Physical inventory

- **Physical inventory preparation**

You create physical inventory documents manually (if you have few articles) or using batch input sessions. If decentralized systems are used, you can also transfer the physical inventory documents via EDI.

The physical inventory documents are printed and distributed.

- **Physical inventory analysis**

You enter the results of the stock count in the system. Once the difference list has been analyzed, you can authorize a recount if you think that errors have been made in the stock count. In this case, new physical inventory documents are created. Once the results of the recount are entered, you close physical inventory and post any physical inventory differences that still exist.

Agency Business

In Agency Business, you act as an agent for business conducted between third parties. In doing so you offer the parties involved (vendors and customers) various advantages or services, such as *del credere guarantees* or more convenient ways of paying. Your own agency receives a commission from either the customer or the vendor for services rendered.