TAMM40

Materials Management

Part I

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- R/3 System TAMM40 Materials Management
- Release 4.6B
- April 2000
- Material number: 50032313

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Target Group

- **Audience:**
  - **Consultants from SAP Partners**
  - **Project team members from SAP Customers**

- **Duration: 25 days**

Course Prerequisites

- **Participants**
    - **Member of the R/3 implementation team**
    - **Junior consultants (less than one year's SAP experience)**
- **Knowledge**
    - **Detailed knowledge of business processes in selected application areas**
    - **Basic knowledge of graphical user interfaces (GUI) such as Microsoft Windows**

Course Overview

Contents:

- **Course Goals**
- **Section Overview**
- **Course Content**

Course Goals

This course will prepare you to:

- **Gain the basic knowledge and understanding of the R/3 system in order to effectively implement one of the following application areas:**
  - **Accounting**
  - **Controlling**
  - **Sales and Distribution**
  - **Materials Management**
  - **Production and Production Planning**
  - **Human Resources**
- **Experience some typical project issues**
- **Work as a project member under the guidance of a senior consultant**

Section Overview (1)

SAP
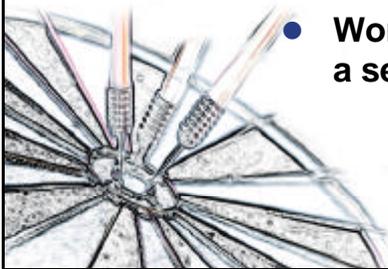
Preface

Section	**Course Overview**	Section	**Materials Planning**
Section	**TeamSAP Academy**	Section	**Purchasing Details & Optimization**
Section	**SAP Overview**	Section	**Inventory Management / Physical Inventory**
Section	**Processes in Procurement**		
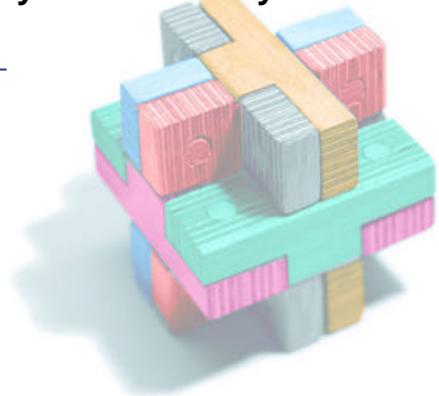
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Section Overview (2)

SAP

Section **Valuation & Account Determination**

Section **Invoice Verification**

Section **Classification & Related Areas in MM**

Section **ASAP**

Section **Cross-Functional Customizing**

Appendices

Content: SAP Overview

SAP

Unit	**Introduction to SAP**	Unit	**mySAP.com**
Unit	**Basis**	Unit	**Navigation**
Unit	**SAP Services**	Unit	**System-wide Concepts**
Unit	**Co-operative Business Scenarios**		

Content: Processes in Procurement

Preface

Unit	**Basics of Procurement Process**	Unit	**Procurement of External Services**
Unit	**Master Data**	Unit	**Reporting in MM**
Unit	**Procurement of Stock Material**		
Unit	**Procurement of Consumable Material**		

Preface

Unit   **Basics**

Unit   **Planning Run**

Unit   **Lot-Size Calculation**

Unit   **Reorder Point Planning
and Planning Evaluation**

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Content: Purchasing Details & Optimization

SAP

Preface

Unit	**Introduction to Purchasing Details**
Unit	**Outline Agreements**
Unit	**Source Determination**
Unit	**Optimized Purchasing**

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Content: Inventory Management/Physical Inventory

SAP

Preface

Unit	**Inventory Management: Overview**	Unit	**Subcontracting**
Unit	**Goods Receipts**	Unit	**Physical Inventory Management**
Unit	**Reservations and Goods Issues**	Unit	**Cycle Counting**
Unit	**Stock Transfers and Transfer Postings**	Unit	**Inventory Sampling**
Unit	**Consignment**		

Content: Valuation & Account Determination

SAP

Preface

Unit	**Introduction to Material Valuation**	Unit	**Material Price Changes**
Unit	**Valuation and Account Assignment**	Unit	**Special Inventory Management Features**

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Content: Invoice Verification (1)

SAP

Preface

Unit **Introduction to Invoice Verification**

Unit **Basic Invoice Verification Procedure**

Unit **Taxes, Cash Discounts, and Foreign Currency**

Unit **Variances and Blocking Reasons**

Unit **Invoice Reduction**

Unit **Variances Without Reference to an Item**

Unit **Invoices for POs with Account Assignment**

Unit **Delivery Costs**

Unit **Subsequent Debits/Credits**

Content: Invoice Verification (2)

SAP

Unit	**Credit Memos and Reversals**	Unit	**GR/IR Account Maintenance**
Unit	**Invoice Verification in the Background**	Unit	**Conventional Invoice Verification**
Unit	**ERS and Invoicing Plans**	Unit	**Customizing for Invoice Verification**
Unit	**Releasing Blocked Invoices**	Unit	**Conclusion**

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Content: Classification & Related Areas in MM

SAP

Preface

Unit   **Classification**

Unit   **Document Release (Approval) Procedure**

Unit   **Batch Management**

SAP

Unit **ASAP Overview**

Unit **Implementation Roadmap**

Content: Cross-Functional Customizing in MM

Preface

Unit	**Global Settings**	Unit	**Purchasing**
Unit	**MM Organizational Levels: Business Scenario**	Unit	**Pricing**
		Unit	**Inventory Management**
Unit	**Master Data in Materials Management**		

Content: Appendices

SAP

Preface

Unit **Overview Standard Courses**

Unit **Technical Details: Material Master**

Unit **Additional Exercises**

Unit **Others**

Unit **Menu Paths**

Partner Academy

- **Mission**
- **Advantages of Partner Academy**
- **Certified Consultants**
- **Certification Areas**
- **Becoming a Certified Consultant**
- **Partner Academy Knowledge Path**
- **Goals of different trainings offerings**
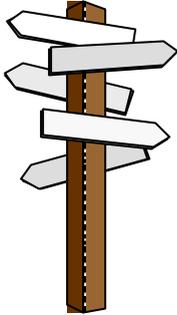
- Train customers and new consultants in the features, functions and best use of SAP products to meet the customer's business goals based on a curriculum that is consistent world-wide

- Provide advanced training and continuing education for experienced consultants

- Provide and ensure a consistent skilled consulting base by certification and testing

- Support partners who train their own employees with the same curriculum

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■ The TeamSAP Academy is an international institute of higher education in SAP applications and a unique organization. It is the most comprehensive training academy in the business software industry.

■ Open to all SAP customers and partners, the Academy's mission is:

1. Train new consultants in the features, functions and best use of SAP products to meet the customer's business goals.

2. Provide continuing advanced training and continuing education for experienced consultants.

3. Provide and ensure a consistent world-wide skilled consulting base through certification and testing.

SAP

- ● **Courses designed for customers and consultants**

- ● **Experienced trainers**

- ● **Exchange of experiences**

- ● **Integrated case study**

- ● **Certification opportunity directly after course**

- ● **Course topics correspond to certification topics**

- ● **Support for certified students**

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- ■ Topics for the evening sessions, especially, are selected with a consultant's interests and needs in mind.

- ■ Consultants can build their network for further learning in the future.

- ■ The case study is the major benefit of this Academy.

  - • You must use all of the knowledge you gained and apply it to a realistic problem.

  - • This reinforces the concepts better than just doing exercises on topics that were covered that same day.

  - • No other course gives the opportunity to work closely with people from other applications.

The Certified Consultant

SAP

- ● **Proven product knowledge**
- ● **Access to information**
  - ■ SAPNet, mailings
- ● **Access to experience**
  - ■ Workshops, exchange of experience
- ● **Contacts with developers**
  - ■ Discussion forums

Quality control of consulting services

Assurance for customers

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- ■ Guarantees the quality of consulting services through tests and subsequent close contacts with certified consultants.

- ■ Every certified consultant has an SAPNet ID and access to specific information via Internet.

- ■ The Academy also offers special workshops for experienced consultants.

- ■ Certified consultants can participate in special discussion forums via Internet, so that they can ask questions and make suggestions to the R/3 developers directly.

- ■ SAP publishes the number of certified consultants of a partner in its partner database.
  - • Customers are increasingly considering this information when selecting the partner.
    - SAP has begun a worldwide market initiative which clarifie s the certification process for customers.

- **mySAP.com Application Components**
  - Accounting
  - Controlling
  - Materials Management
  - Production Planning
  - Sales & Distribution
  - Human Resources
  - Project System
  - Quality Management
  - ABAP Programming
  - PM/CS
  - ASAP
  - Business Warehouse
  - mySAP.com Internet Sales with the Online Store
  - mySAP.com Business-to-Business Procurement
 - Advanced Planner and Optimizer

- **mySAP.com Industry Solutions**
  - IS-Real Estate
 - IS-Public Sector
  - IS-Retail

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- Certification is person-specific and release-related.
- Certification is specific to a given application.
  - It can be acquired in different application fields.
- The certificate for technical consultants is operating system and database-specific.

Becoming a Certified Consultant

Beginner	**Partner Academy basic training**	**Certification Test**	
Junior consultant	**Standard Training**	**Certification Test**	**Certificate**
Experienced Consultant			
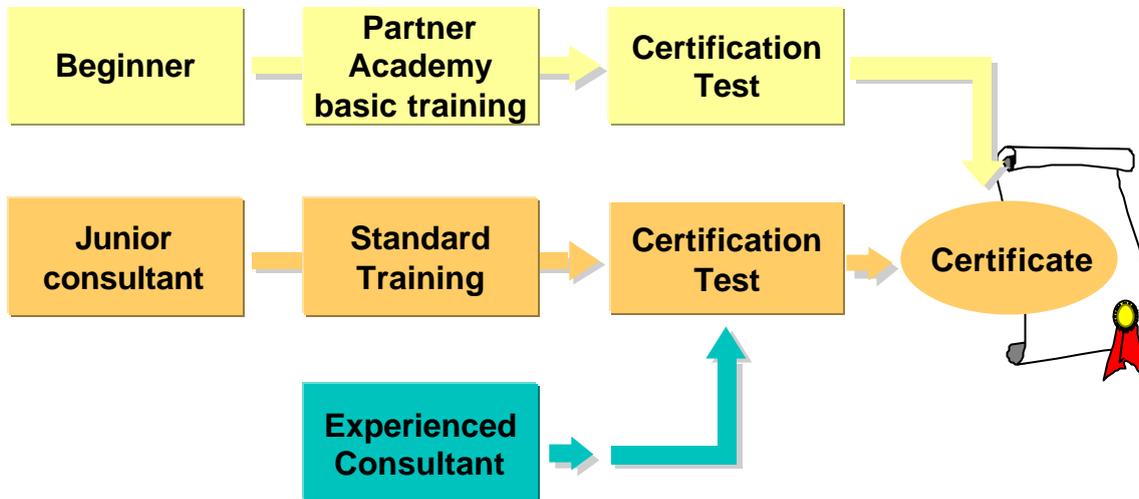
- There are different ways you can acquire the essential knowledge of a certified consultant. In general, the same test will be used to test your knowledge.

- TeamSAP Academy offers a 5- or 6-week basic training worldwide to help you acquire the essential knowledge needed for the certificate.

Partner Academy Knowledge Path

Skill Level

Advanced

Advanced Application Consultant

Advanced Academy Knowledge
Certification

Application Consultant

Application Consultant

mySAP.com
Application
Components
Certification

or

mySAP.com
Industry Solution
Knowledge
Certification

or

mySAP.com
Workplaces
Certification

New

Project experience

Initial   5 or 6 Wks
Partner Academy
Certification

Delta Knowledge
(e.g. SAP Skills2000, Study Guides)

Upgrade
Certification

Time

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- In addition to the certificate for SAP Consultants, we also offer an extended training program.
- After you have collected experience as a junior certified SAP consultant and visited further Level 3 courses and workshops, you can apply to do an in-depth course.
- This further certificate will enable you to take over project management and allow you to take part in the 'Expert Forums' that we offer.

Goals of the Different Training Offerings

Initial Training

- To gain a **basic knowledge** and understanding of the system for a particular application area in order to efficiently **carry out** implementations

- To learn about some typical **project issues**

- To understand the tools available for use in project implementations

- To be able to **work as a project team member** under the guidance of a senior consultant in the first phase of a project (first year)

Advanced Training

- To gain a **sound knowledge** and understanding of the system for a particular application area in order to efficiently direct/supervise implementations

- To understand some typical **integration issues** in implementations

- To apply knowledge of this particular application area in different customer scenarios

- To be able to **work as a senior consultant** in a project with limited complexity

- The Advanced Level demands expert knowledge in a special area.
  - It also requires practical experience of at least one year.
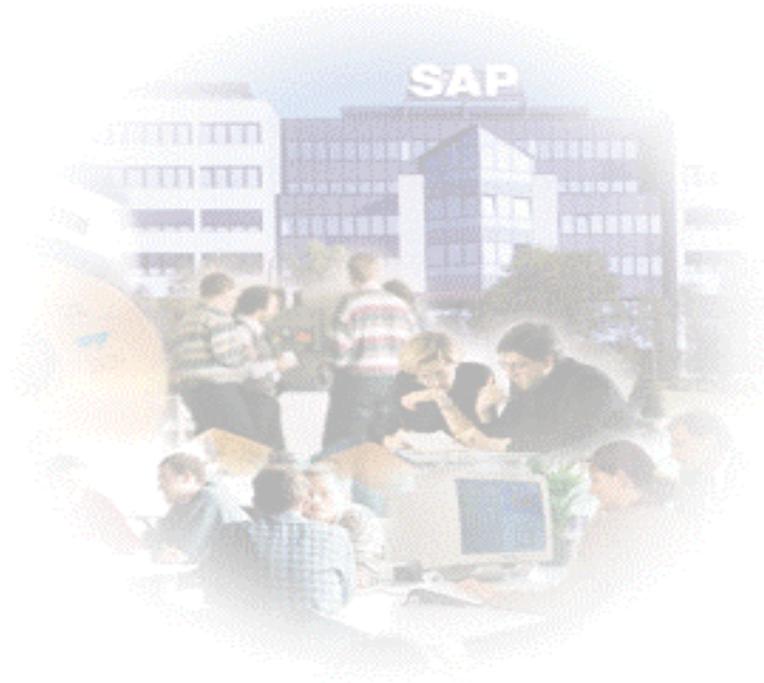
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Content: SAP Overview

SAP

Unit	**Introduction to SAP**	Unit	**mySAP.com**
Unit	**Basis**	Unit	**Navigation**
Unit	**SAP Services**	Unit	**System-wide Concepts**
Unit	**Co-operative Business Scenarios**		

Introduction to SAP

Contents:

- **SAP Organization**
- **Enjoy SAP**

Introduction to SAP: Unit Objectives

SAP

At the conclusion of this unit, you will be able to:

- **Briefly describe the SAP organization**
- **Discuss the Enjoy SAP initiative**

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Our Commitment

SAP

"SAP enables you to positively transform your company so that the maximum potential for your business and your people can be reached. We always strive for excellence to become your long-term partner and to provide the tools you need to improve your company's value".

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- **Global Research Network**

- **SAP Labs centers**

- **Service & Support centers**

Cambridge

Moscow

Mannheim Walldorf

Karlsruhe

Palo Alto

Sophia Antipolis

Tokyo

Bangalore

sap.com

http://www.sap.com

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SAP Cooperation with Partners - A Selection

PricewaterhouseCoopers
DA Consulting Group
Deloitte&Touche
EDS
Andersen Consulting
ORIGIN
CSC
CAP GEMINI
Adobe
debis
Development partners
KPMG
IBM
Partners offering complementary software
Consulting partners
Ernst&Young
HP
PLAUT
NEC
BULL
DA Consulting Group
Hardware partners
Technology partners
AT&T
INFORMIX
EMC
SUN
Dell
System resellers Service partners
Comparex
Intel
Siemens
COMPAQ
Acer
MICROSOFT
SEQUENT
DIGITAL
APPLE
Fujitsu
Amdahl
iXOS
Mitsubishi
DATA GENERAL
SOFTWARE AG

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SAP Delivers on Promises and Customer Needs

SAP

Solutions for

- All geographic regions
- 19 Comprehensive Industry Solutions
- All organizations regardless of size

- Solutions designed with enterprises and users in mind
- Scalable for your business
- Continuous technology evolution
- Constant value innovation
- The user is at the center
- Instantly usable applications

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- **The goal**
  - **Make SAP software easier to learn, tailor, and use**
- **The way**
  - **Listen to people (contest, user visits)**
  - **All SAP applications went back to the lab**
    - **New visual aesthetics "Obvious at first glance"**
    - **New interaction "High-speed user interaction"**
    - **New personal, role-based interface "Streamlined to my needs"**
  - **Work with world-renowned design experts**

Extend the Reach - Old R/3 Purchasing

SAP

- Initial Screen
- Header Data
- Item Overview
- Item Details

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Extend the Reach - New R/3 Purchasing

Header Data

Item Overview

Item Details

Extend the Reach - Role-Specific Scenarios

SAP

Occasional Purchaser

Professional Purchaser
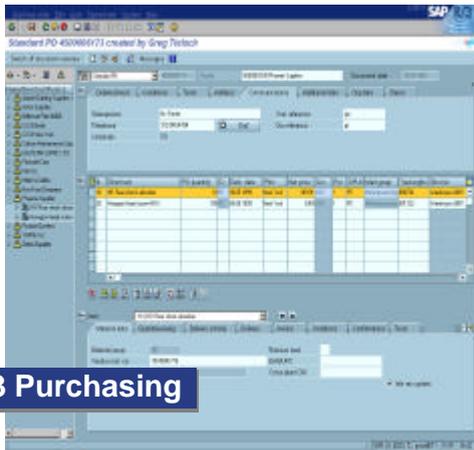
Business to Business Procurement

R/3 Purchasing

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Extend the Reach - More Role-Specific Scenarios

SAP
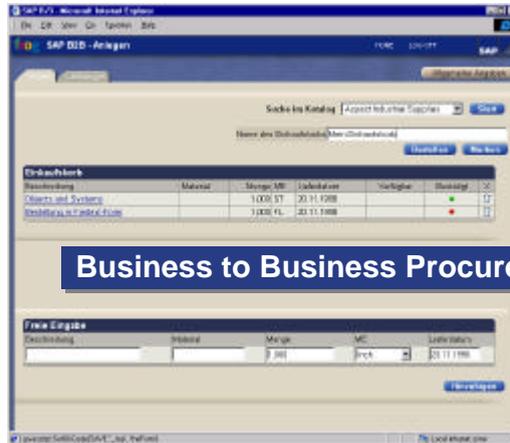
Professional User

R/3 Purchasing
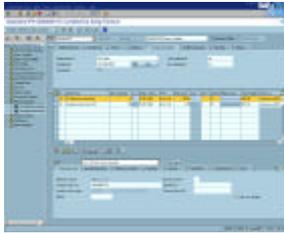
Advanced Planner and Optimizer
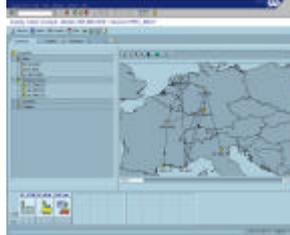
Strategic Enterprise Mgmt

Occasional User

Business to Business Procurement

SAPNet

Information Warehouse
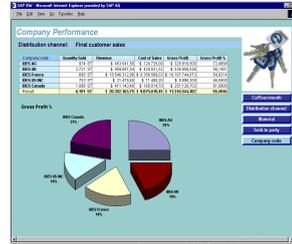
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- Role-specific scenarios extend beyond R/3 and into SAP's New Dimensions.
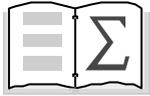
You are now able to:

- **Briefly describe the SAP organization**

- **Discuss the Enjoy SAP initiative**

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Contents:

- **SAP R/3 Basis Technology**
- **Business Framework Architecture**

Basis: Unit Objectives

SAP

At the conclusion of this unit, you will be able to:

- **Describe the SAP R/3 Basis Technology**

- **Describe the Business Framework Architecture**

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Client/Server Benefit

Software-Oriented View   *Hardware-Oriented View*

Presentation	SAPGUI
Application	Dispatcher — Work process / Work process
Database	DB

Scalability
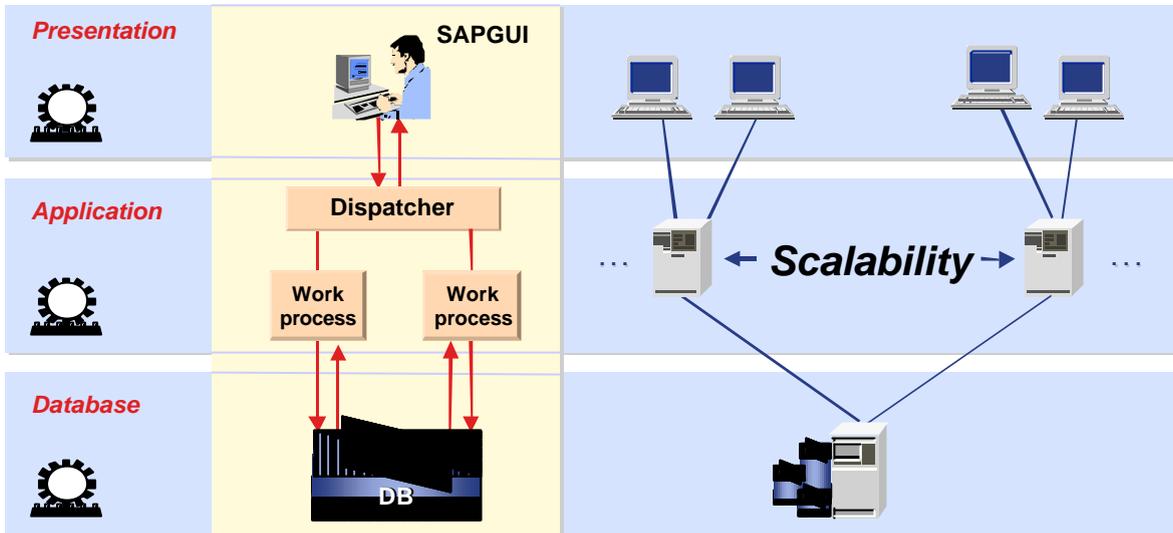
- The R/3 System architecture allows you to separate application from the presentation and the database. This is the prerequisite for distributing load onto several application servers in client/server configurations. Therefore, the system can be distributed, in hardware terms, at three different levels.

- This architecture means that the installed host service can be adjusted without any problems (**scalability**), especially where load profiles have changed as a result of increasing user numbers, or because additional components have been used. R/3 System scalability provides you with flexibility when choosing hardware and software.

- Examples of R/3 System scalability:
  - Brewery - 20 users
  - Small Telecom company - 415 users
  - Large Software Company - 2000 users
  - Oil & Gas Company - 2500 users
  - Large Engineering Company- 3200 users
  - Large Telecom Company- 5800 users

Business Transactions

SAP

1. *Transaction accessed by user online with system*

Application Component

ABAP Dictionary

4. *Result of transaction screen*

2. *SQL query*

3. *Transfer and formatting of resulting quantity*

Relational Database
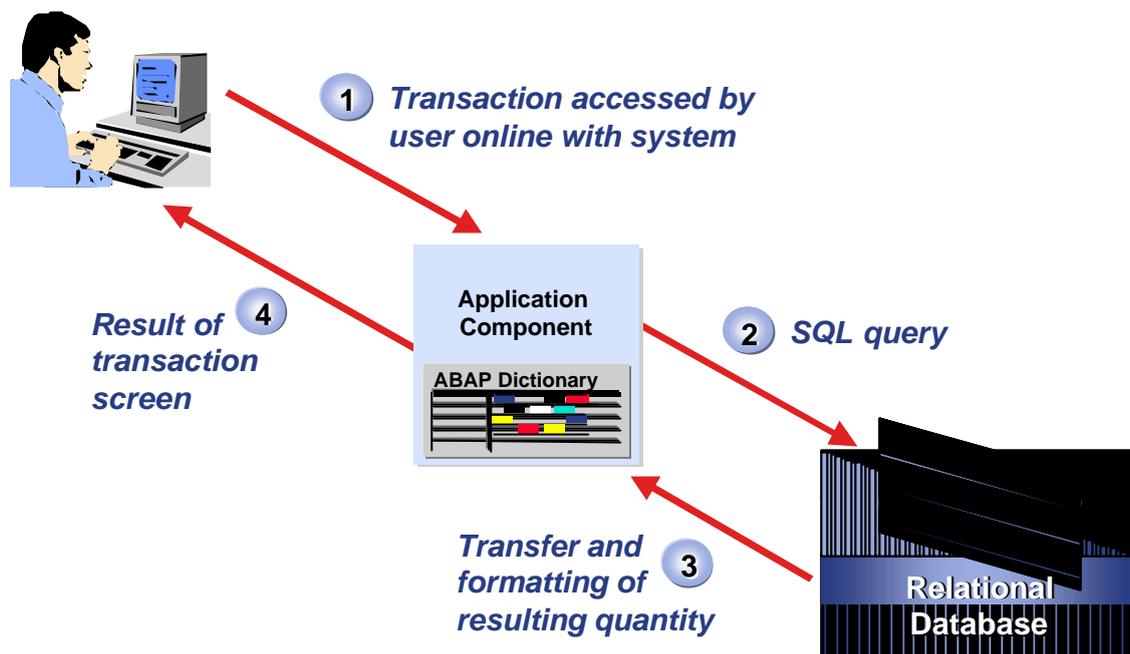
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- An R/3 transaction is a sequence of dialog steps that are consistent in a business context and that belong together logically. When an R/3 transaction is executed, all individual dialog steps are performed and the data entered in the transaction is updated in the database. From the viewpoint of the database, this is a conversion from one consistent state to the next.

- After a user accesses a transaction, the R/3 System starts a query from the application level to the database level. The query is performed in SQL (Structured Query Language), the language compatible with most database systems. The scope of SQL enables the full functionality of the database system, including all vendor-specific enhancements, to be used.

- The ABAP (Advance Business Application Programming language) Dictionary contains the field definitions that are defined in the standard SAP System. While online, the system uses the definition of the table fields in the ABAP Dictionary to check the format of the user's field entries. The check on R/3 application level guarantees data consistency before the data is transferred to the database.

- All data and programs in the SAP R/3 System are stored in the database.

SAP Business Objects
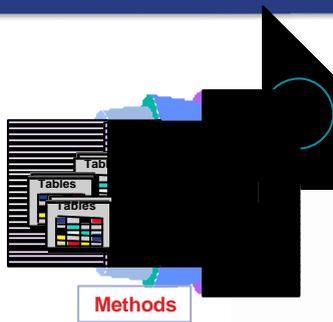
Business Object:	**Employee**	**Sales Order**
Attributes: (Characteristics)	• **Name** • **Address** • **Salary** • **Job**	• **Customer** • **Date** • **Item list** • **Price**
Methods: (Application Programs)	• **Change address** • **Promote**	• **Deliver** • **Check availability** • **Trace shipping**

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- An SAP Business Object is the representation of a central business object in the real world, such as an employee, sales order, purchase requisition, purchase order, applicant, invoice, and so on.

- A business object is composed of tables that are related in a business context, including the related application programs. The application programs are called "methods" of the business object. Attributes and methods are assigned to a business object.

- Attributes are characteristics that specify the business object. The attributes can be modified by the methods that belong to the business object.

- Business objects are maintained by SAP in the Business Object Repository (BOR).

Business Application Programming Interface
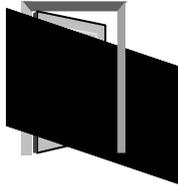
- **A BAPI is a well-defined interface providing access to processes and data of business application systems.**

Methods
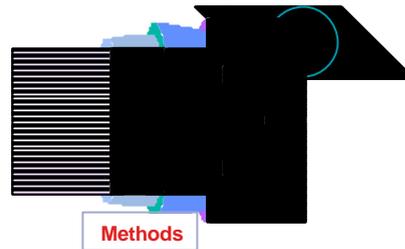
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- BAPIs offer a stable, standardized interface for integrating third-party applications and components in the Business Framework. The interfaces are defined within the SAP initiative with customers, partners, and leading standardization organizations.

- A BAPI is basically an entry gate to the R/3 System, while R/3 offers access to business data and processes.

- A business object in the Business Object Repository (BOR) can have many methods from which one or several are implemented as BAPIs. (Recall that a "method" is an operation that can be performed on a Business Object that provides access to the object data..)

- Some BAPI functions:

  - Create objects

  - Display attributes of objects

  - Change attributes of object

- A BAPI is assigned to one and only one business object.

- **SAP Business Components**
  (such as SAP FI/LO or SAP HR)

- **Business Objects**
  (such as a Sales Order)

- **BAPIs**
  (such as Create Sales Order)

- **Client Components**
  (such as a sales component running on a laptop external to an R/3 System)

SAP Business Component

BAPI   BAPI

Client Component
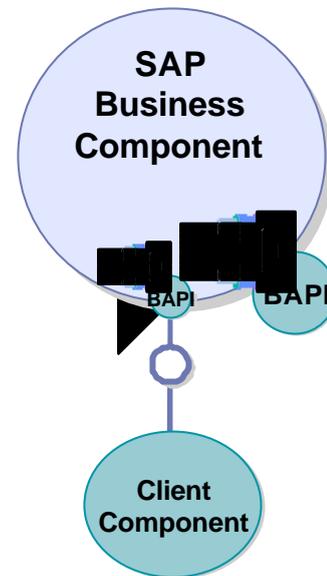
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- The Business Framework portrays the R/3 System as a family of products made up of separate, integrated components.

- The Business Framework Architecture works using business components, that is, configurable software modules, and it offers enterprises a flexible business infrastructure. This means that enterprise software can react quickly to new business demands, and can be changed or enhanced simply without disturbing the flow of business. Business components interact in the Business Framework Architecture via open BAPIs.

- The Business Framework Architecture is the strategic product architecture of the R/3 System.

The SAP Business Framework

- Human Ressources Rel. 4.6
- Financials Logistics Rel. 4.0
- Add-on development
- SAP Industry Solutions
- Business Information Warehouse
- Non-SAP Industry Solutions
- Employee Self-Service
- Business-to-Business Procurement
- Online Store
- Complementary software
- Internet/Intranet
- Internet/Intranet
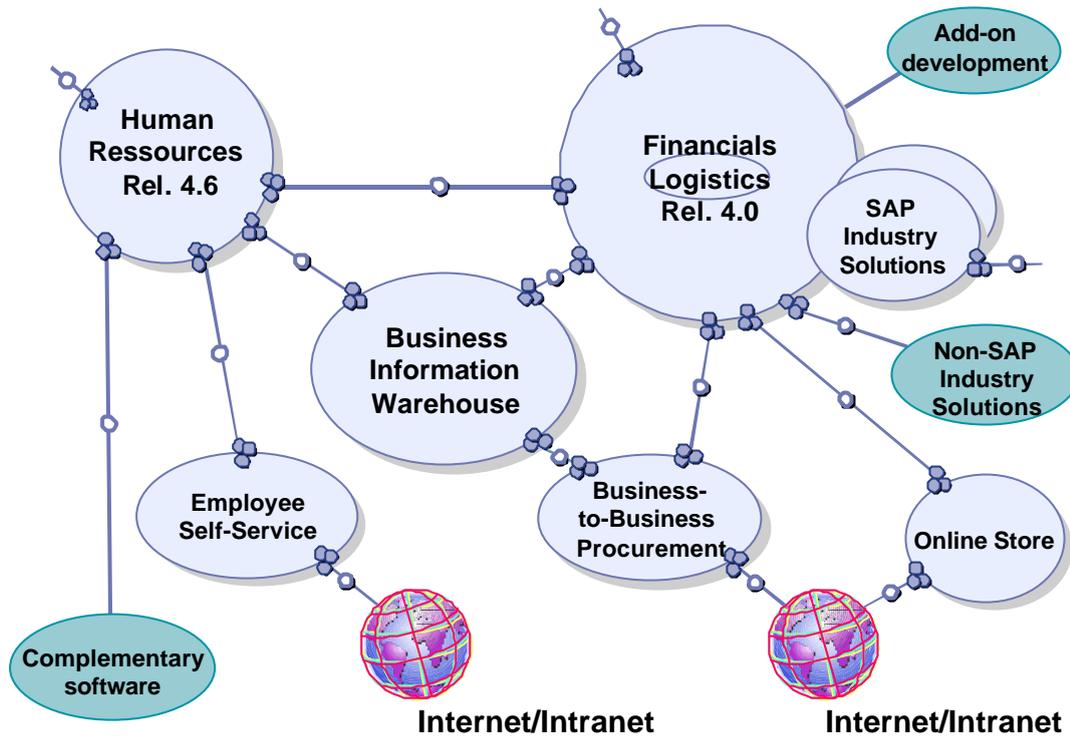
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- Using the Business Framework technology, SAP provides its customers with a platform to configure and connect business processes and information flows across all components of the Business Framework, and also across physically-separated application components.

- The benefits of the Business Framework Architecture include the ability to easily change and configure dynamically business processes independently of usual releases, easy integration of Internet and Intranet components in their business processes, simple connection between R/3 and third-party software, customers' own developments and evolutionary implementation of the latest technology,and separate upgrade of components without interrupting the business operation.

Distributed Applications

Payment

ALE

Procurement
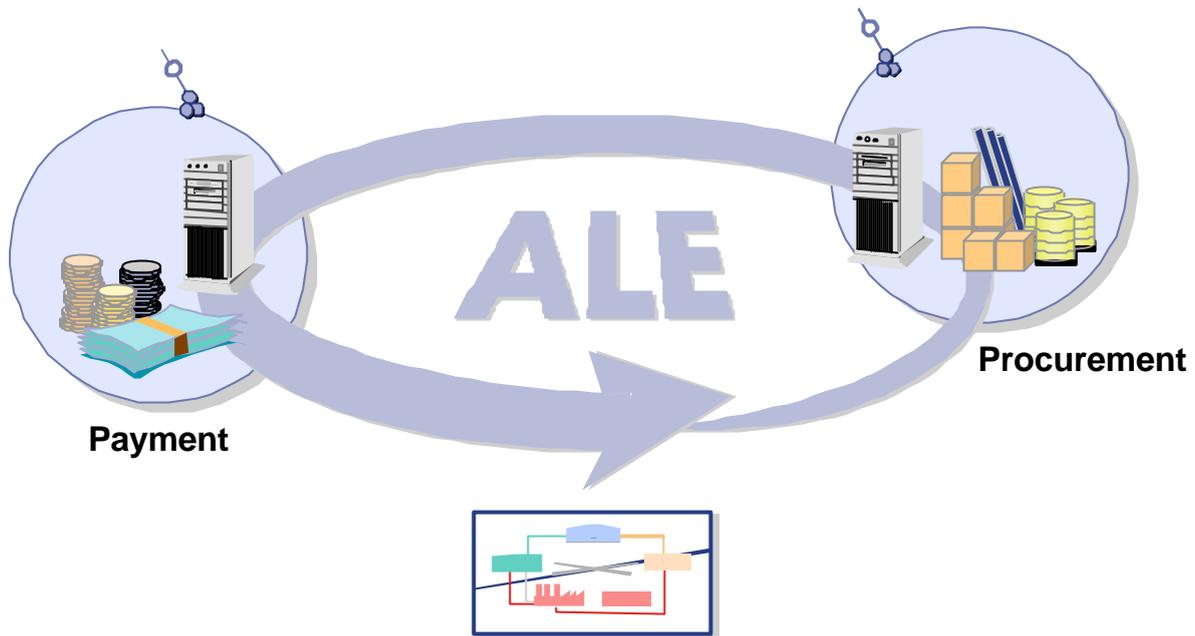
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- Business processes can be distributed using ALE.
- ALE is used to distribute data, master data and transaction data across different systems.
- The ALE concept always relates to an enterprise structure with areas that have central tasks and areas with tasks that are decentralized.

Application Link Enabling (ALE)

SAP

Headquarters

Shipping

IDOCs

Area

Plant

Warehouse
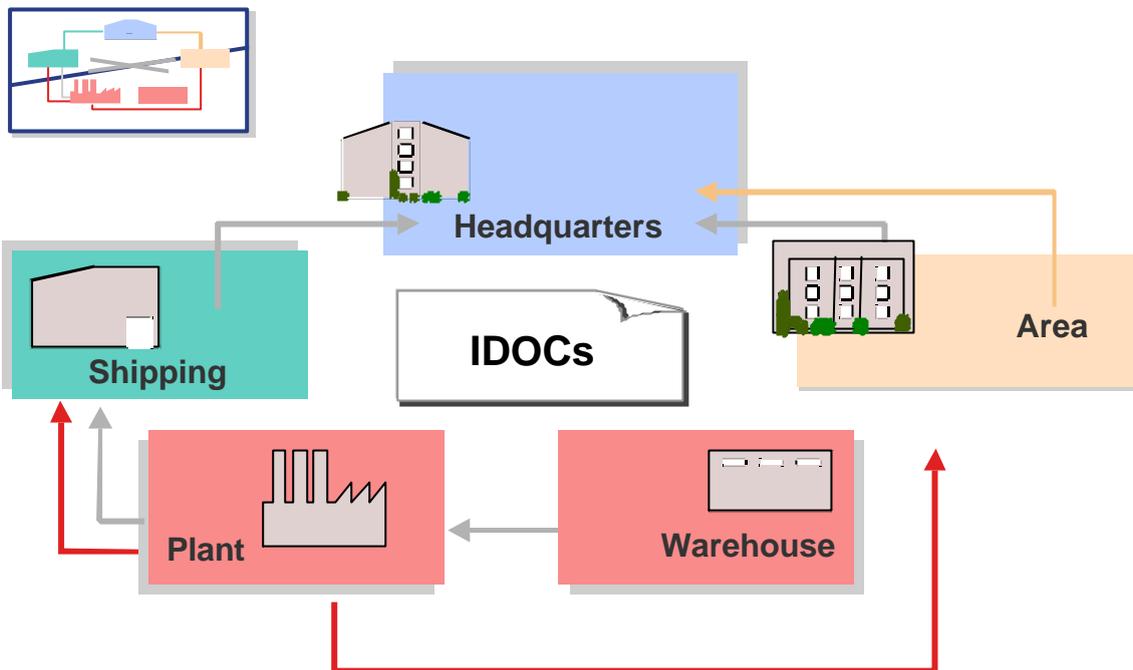
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- It may be practical for organizations to use separate application systems so that application components can be installed and operated on decentralized systems that are technically independent of each other.

- The ALE concept supports the implementation and operation of distributed SAP applications. It is based on business-controlled messaging with consistent data storage on loosely coupled systems. The applications are integrated through the message exchange, not via a central database.

- To implement a distributed, yet integrated system, the customer must specify in a logical model, which applications are to run on which systems and how the applications are to exchange data with each other.

- On the technical side, the data exchange is carried out via IDocs (intermediate documents) as used in the EDI (Electronic Data Interchange) interface. On the application side, EDI supports information exchange between R/3 systems in different enterprises, whereas ALE supports information exchange within one enterprise. The ALE distribution mechanism is similar to the EDI mechanism. In ALE, business processes are distributed at the transaction level.
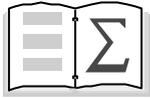
Basis: Unit Summary

You are now able to:

- **Describe the SAP R/3 Basis Technology**

- **Describe the Business Framework Architecture**

Content:

- **SAP`s Service & Support Organization**

At the conclusion of this unit, you will be able to:

- **Briefly describe SAP's Service & Support Infrastructure**
- **Briefly discuss the methodologies and tools available to support business process evaluation and implementation activities**
- **Explain the various dimensions and system landscape options for implementation**
- **Describe the various SAP services for lifecycle support**

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SAP Service & Support Infrastructure
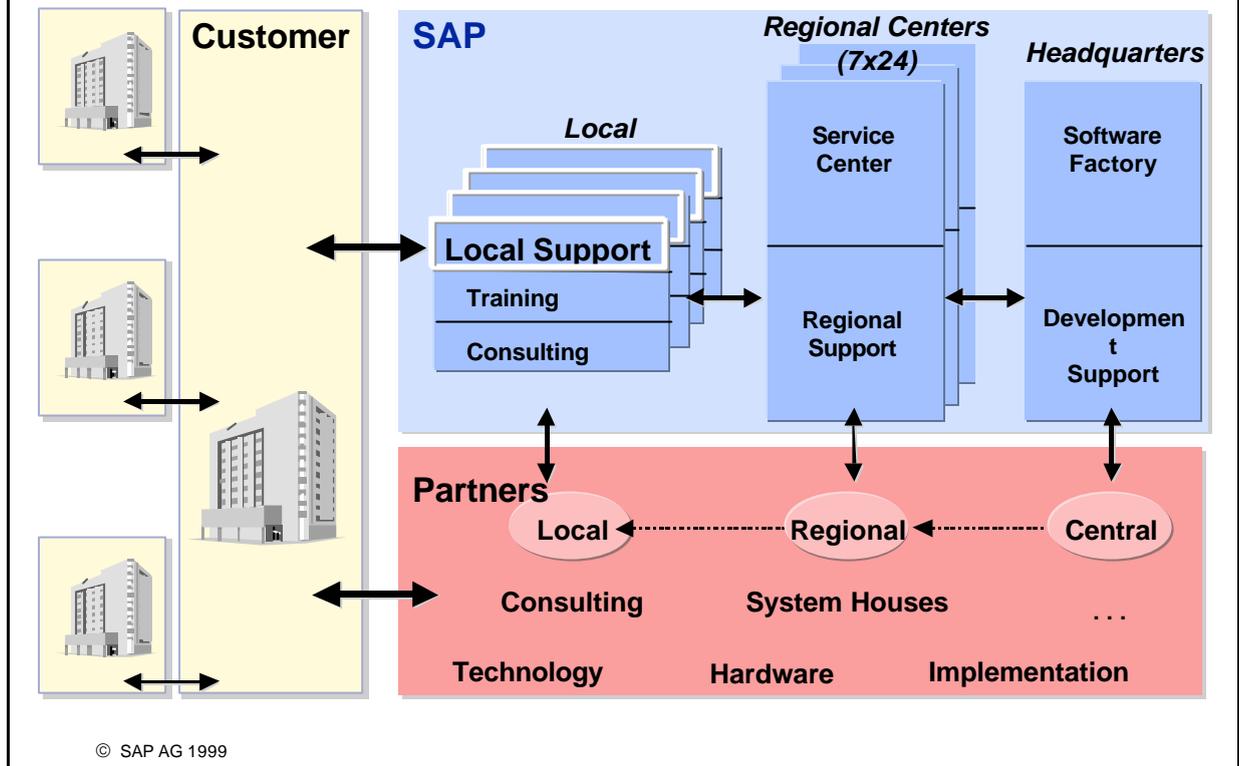
- SAP international subsidiaries (local)
  - Training
  - Consulting
  - Local support
- Regional Service & Support Center (regional)
  - Regional service and support for Europe, Americas, Asia and Australia
  - In-depth processing of support requests (7 x 24 hours)
- Headquarters (central)
  - Development
  - Strategic service and support planning
  - Coordination of service and support activities

Business Processes: Overview

Business Processes

Scoping | Blue Printing | Configuration

Accelerated Solutions

AcceleratedSAP

Global ASAP

- **ASAP Project Management**
- **ASAP Change Management**
- **Risk analysis**
- **Review**

Project-related knowledge

Methodology

ASAP

Tools

Services

- **Implementation Assistant**
- **Q&A db**
- **Implementation Guide**
- **Profile Generator**
- **Transport System**

Consulting, ASAP Training, Project Reviews

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- The ASAP Roadmap is recommended by SAP for implementation planning and for use in an R/3 System implementation. The ASAP Roadmap is based on a "step for step" method for R/3 System implementation.

- **AcceleratedSAP (ASAP)** is SAP's comprehensive implementation solution to streamline R/3 projects. AcceleratedSAP optimizes time, quality and efficient use of resources. ASAP integrates three components, the ASAP Roadmap, Tools, and R/3 Service and Training, which work in conjunction to support the rapid and efficient implementation of the R/3 System.

- **AcceleratedSAP Roadmap** delivers a process - oriented, clear and concise project plan to provide step-by-step direction throughout your implementation of R/3. The ASAP Roadmap consists of five phases: Project Preparation, Business Blueprint, Realization, Final Preparation, Go Live & Support and continuous improvement.

- **Tools** include ASAP specific tools to support project management, questionnaires for the business process consultants and numerous technical guidebooks and checklists.

- **R/3 Services and Training** includes all consulting, training, and support services, for example, Hotline, EarlyWatch, Remote Upgrade or Archiving Service, etc. These products help to standardize certain tasks to perform them as quickly as possible.

ASAP Roadmap

1 Project Preparation

2 Business Blueprint

3 Realization

4 Final Preparation

5 Go Live & Support

Continuous Improvement

Methodology

ASAP
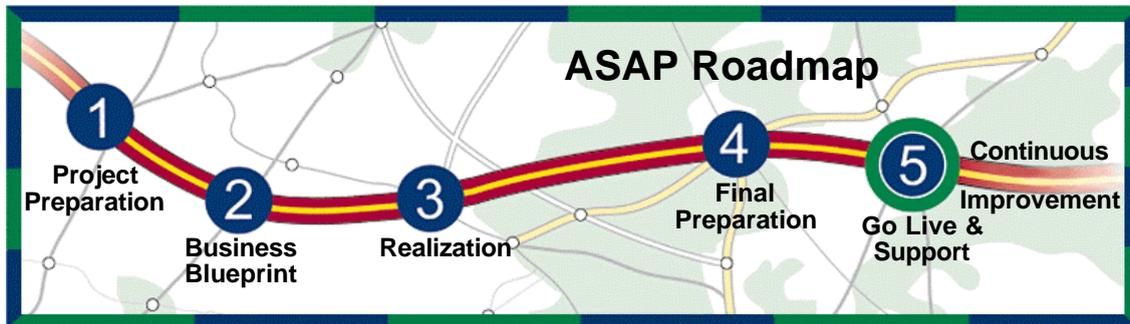
© SAP AG 1999

- **Phase 1 Project Preparation** - The primary focus of Phase 1 is getting the project started, identifying team members and developing a high-level plan.

- **Phase 2 Business Blueprint** - The primary focus of Phase 2 is to understand the business goals of the company and to determine the business requirements needed to support those goals.

- **Phase 3 Realization** - The purpose of this phase is to implement all the business and process requirements based on the Business Blueprint. You customize the system step by step in two work packages, Baseline and Final configuration.

- **Phase 4 Final Preparation** - The purpose of this phase is to complete testing, end-user training, system management and cut over activities. Critical open issues are resolved. Upon the successful completion of this phase, you will be ready to run your business in your productive R/3 system.

- **Phase 5 Go Live and Support** - Transition from a project oriented, pre-productive environment to a successful and live productive operation.

Business Processes: Implementation Guide (IMG)

SAP

Customizing

Example: Company Code Table

Company Code	Company Name	Location	Country
0001	SAP AG	Walldorf	DE
1000	Enterprise X	New York	USA

Customizing with no technical background

Customizing IMG

Global settings

☐ ☑ ⟋ ✔ **Countries**

☐ ☑ ⟋ ✔ **Currencies**

☐ ☑ ⟋ ✔ **Calendars**

Customizing using business views

Customizing transactions & recommendations

Implementation project administration

Documentation of system settings
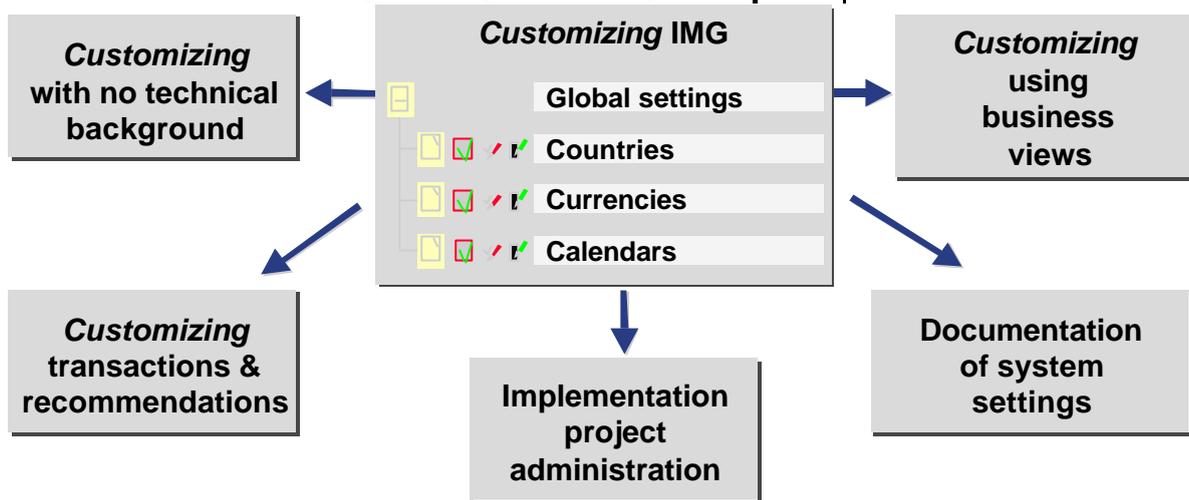
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- The IMG acts as a checklist of the Customizing activities that your enterprise should complete for an SAP System implementation project. The IMG is hierarchically structured.

- The structure of the IMG and the IMG management tools (such as resource management and the MS Project interface) help your project team to work through the Customizing activities in a rational sequence.

Business Processes: IMG Tasks

SAP

- The IMG contains documentation for each activity
- The activities can be carried out directly
- Functions for project management and project documentation are available

IMG

Global settings

☑ ✓ Countries

☑ ✓ Currencies

☑ ✓ Calendars

SAP Documentation	Activities	Project Management	Project Documentation
• Concept • Recommendations • Requirements • Activity • WinHelp	• Open Customizing transactions	• Status/activity data • Scheduling • Resources • Microsoft Project interface	• Efficiently organized using notes • Use Microsoft Word

© SAP AG 1999

- The Enterprise IMG contains all Customizing activities you need to implement application components in an enterprise.

- You can create SAP System Customizing projects to help structure and manage the implementation work. You can create and store cross-project documentation.

- You can create an IMG for each project.

- From a Project IMG you can work on Customizing transactions, project documentation, cross-project documentation, and project management information.

Business Processes: Accelerated Solutions

A c c e l e r a t e d   S o l u t i o n   s t e p - b y - s t e p

Industry-specific details in ASAP and documentation

Model-based presentation of the industry solution

Industry-specific Business Blueprint

Industry-specific *Customizing* in IMG
Pre-configured Industry System

Industry-specific R/3 Business Components
Business Framework Component

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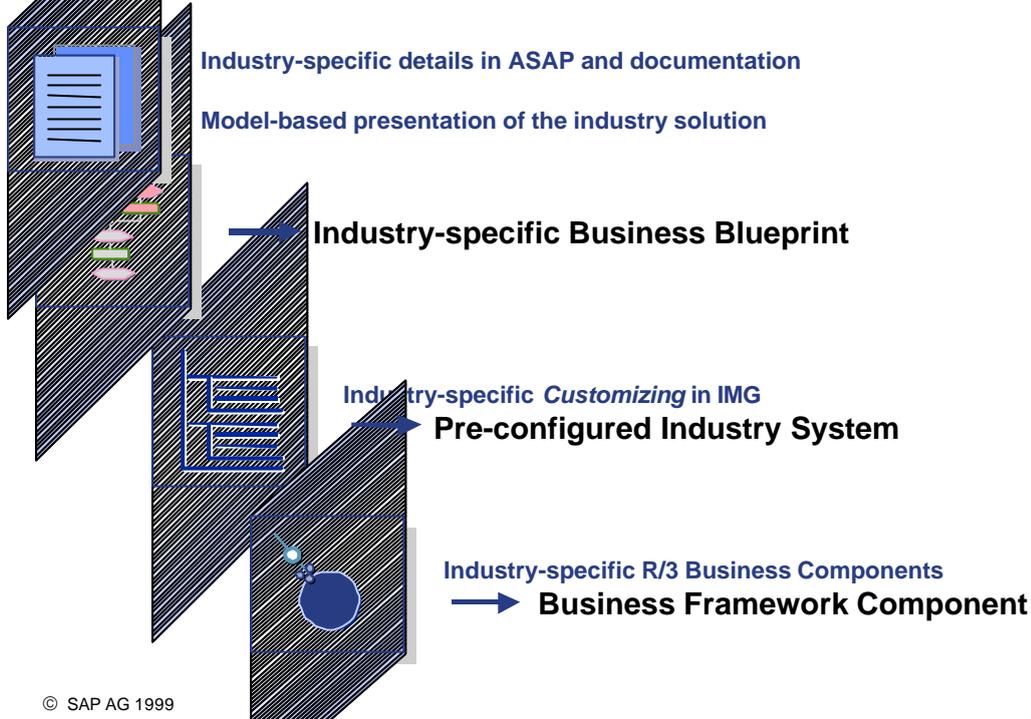
- R/3 System documentation and the ASAP Question & Answer database contain industry-specific information and are the ideal places to start to look for information.

- You are supported in your analysis of the selected business processes by model-based presentations of industry-specific business processes. A structure for every industry exists in the ASAP Question & Answer database, and helps you to produce an industry-specific Business Blueprint (Phase 2 of the ASAP Roadmap).

- Industry-specific Customizing is the name given to the installation of the default Customizing parameters in the IMG that relate to a certain industry. You can transfer industry-specific master data structures to the system by using a Computer Aided Testing Tool (CATT), which is also integrated in the R/3 System. CATTs are provided for the industry-specific business cases defined by SAP.

- Industry business solutions are integrated in the Business Framework as Business Components.

- The implementation of the system can also be a Ready-to-Run R/3 System solution (RRR). The main feature of this solution is the complete delivery of hardware and software allowing you to rapidly install the R/3 System.

Lifecycle Support: Remote Services

SAP

Lifecycle Support

| Product Requirements | Pro-active Support | Support on Demand |

➔ **Online Service System - SAPNet**

➔ **GoingLive Service, EarlyWatch**

➔ **Remote consulting**

© SAP AG 1999

- Look in the extensive SAPNet Notes database for the answer to your question or problem. You may not need to create a problem message.

- SAPNet (Online Service System)

  - SAPNet carries the latest announcements, documentation and much more. You can also find, and contribute, information in discussion groups.

- GoingLive and Early Watch

  - The GoingLive Check is for just before you cut over to live operation. It tests whether the system is suitably configured for the requirements. In Early Watch sessions, SAP spots potential performance problems early and suggests suitable corrective measures.

- Remote Consulting

  - In remote consulting sessions, SAP consultants dial into your System at times convenient to you, trying to analyze and solve a problem in your System from their desk.

- Other services include remote upgrade, remote archiving, conversion, migration, and euro services.

Online Service through SAPNet

SAP

Functions

Customer

SAP

SAPNet

Partner

- **Problem Messages**
- **Notes**
- **Hot News**
- **Online Corrections**
- **Service Requests**
- **SAP Software Change Registration**
- **Training Details**
- **Customer Master Data Maintenance**
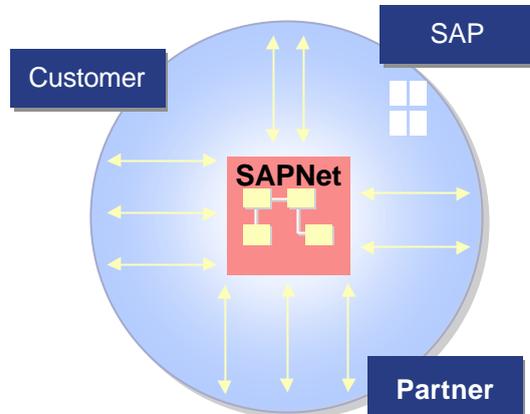
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- Report problems on customer R/3 Systems.
- Find Notes in SAPNet using keywords.
  - Example: Search for Contact to find SAP contacts for any topic.
- Display the latest from SAP (HotNews).
  - Examples: News of Hot Packages
  - Generate and fetch developer keys (from Rel. 3.0) for developers and also for SAP standard objects.
- Import preliminary corrections directly into your R/3 System with Hot Packages.
- Maintain your company SAPNet user data (phone and fax numbers, first and last names), and apply for more SAPNet users.
- See the latest overview of SAP training courses.
- Allow a member of the SAP service team access to your system for quicker problem-solving.
  - Note: SAPNet was known as OSS in previous releases.
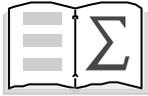
At the conclusion of this unit, you will be able to:

- **Briefly describe SAP's Service & Support Infrastructure**
- **Briefly discuss the methodologies and tools available to support business process evaluation and implementation activities**
- **Explain the various dimensions and system landscape options for implementation**
- **Describe the various SAP services for lifecycle support**

Co-operative Business Scenarios

SAP
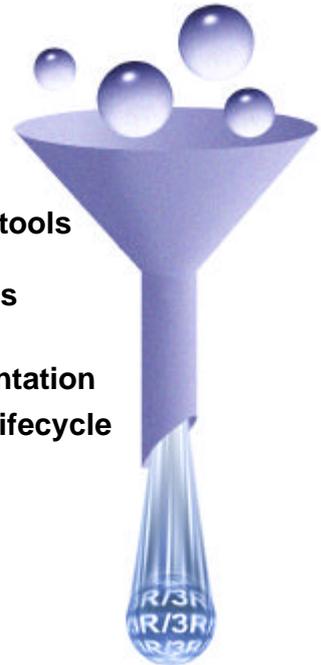
Contents:

- **Customer Relationship Management**
- **Advanced Planner and Optimizer**
- **Strategic Enterprise Management**
- **Business to Business Procurement**
- **Business Information Warehouse**
- **Knowledge Management**

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Co-operative Business Scenarios: Unit Objectives

At the conclusion of this unit, you will be able to:

- **Briefly describe the concepts of the New Dimension Products**

- **Describe the relationship among the New Dimension Products in the context of business scenarios**

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SAP Customer Relationship Management

Customer Interaction Layer

Marketing
- Product/Brand Management
- Market/Customer Qualification
- Campaign Management
- 1-to-1 Marketing

Sales
- Field Sales
- TeleSales
- Web based Selling
- Sales Support
- Category Management

Service
- Field Service
- Depot Repair/RMA
- Customer Service
- Professional Services Management

- Customer Interaction Center/Call Center
- Customer Self Service
- Knowledge Base

Enterprise

Market

Consumer
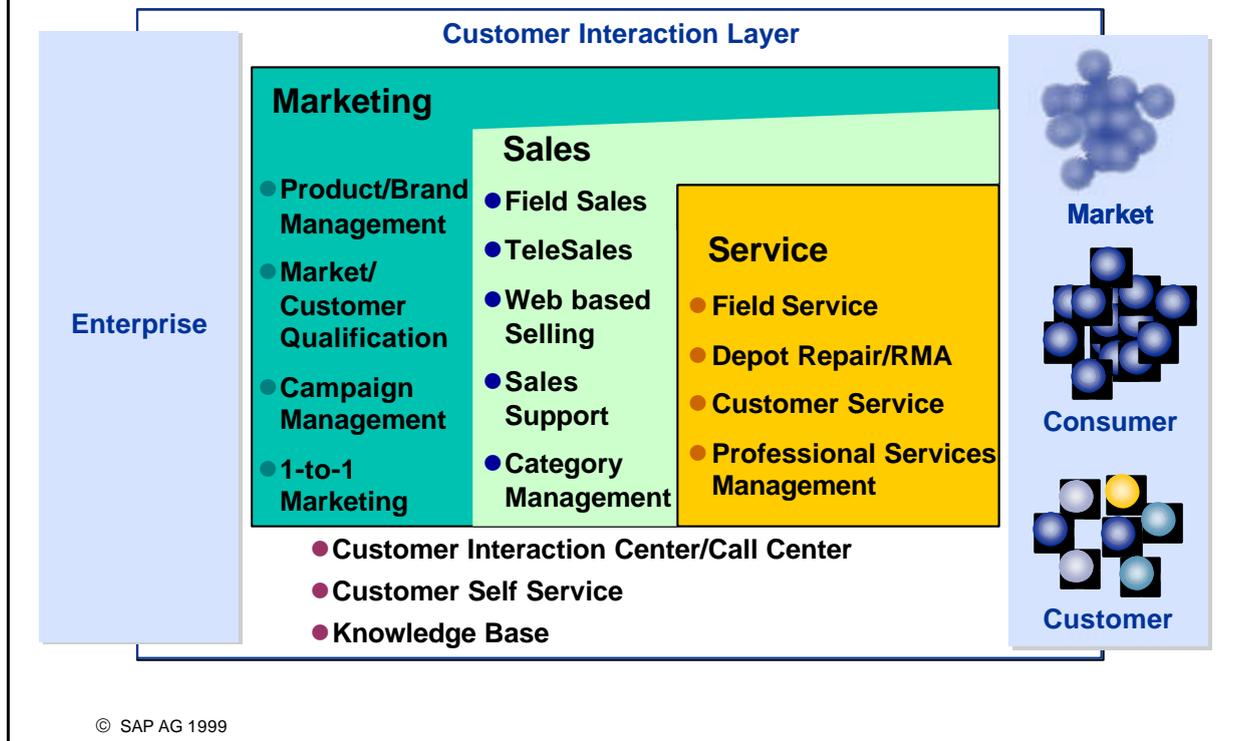
Customer

■ SAP Customer Relationship Management (CRM) focuses on providing solutions that enable companies to effectively manage customer relationships throughout the entire lifecycle. The overriding goal is to aid an enterprise in understanding, as well as anticipating, the needs of its current and potential customers.

CRM Architecture - Sales Example

SAP

R/3 System

SAP Business Information Warehouse

Other Systems

Middleware

Sales Support

Sales Support

Sales Force

Sales Force

Sales Force

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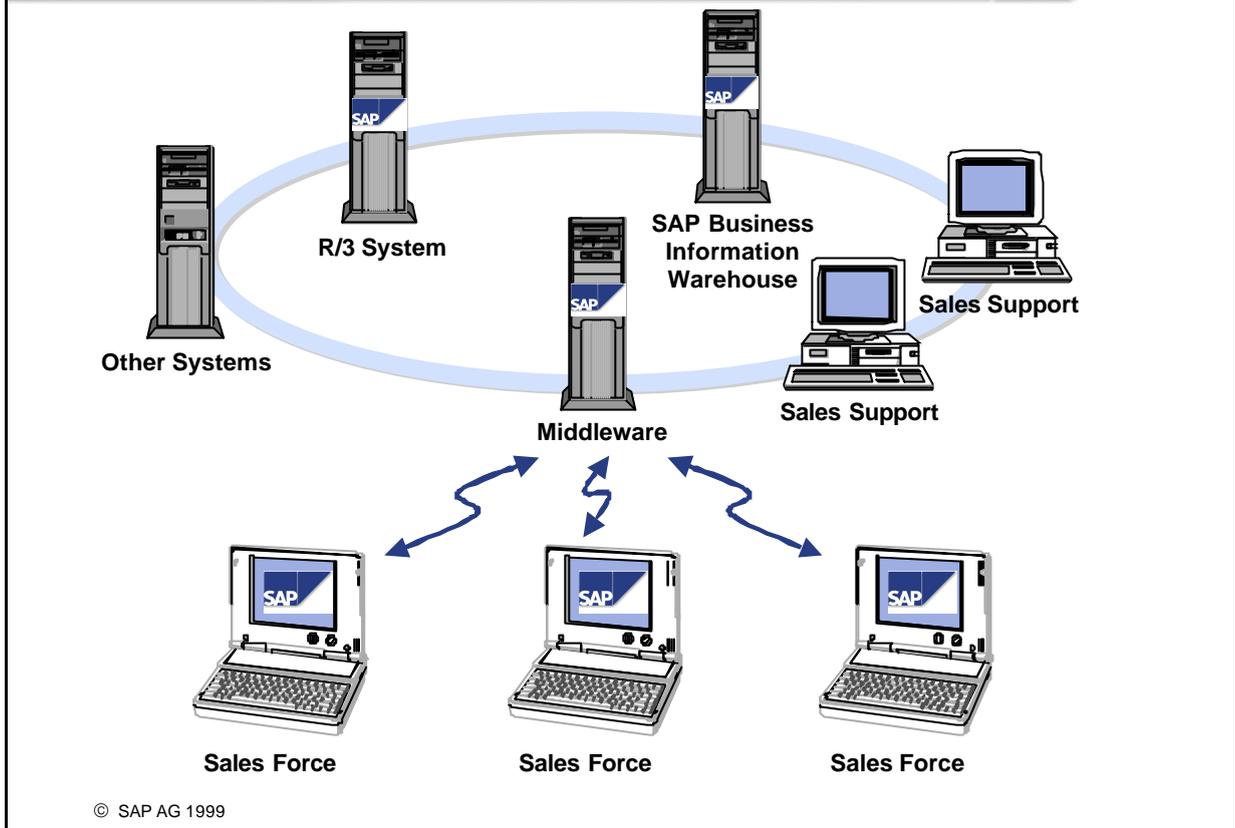
- From a technological perspective, the CRM architecture makes possible the ability to capture customer data across the enterprise, consolidate all internally and externally acquired customer-related data in a central database, analyze the consolidated data, distribute the results to the various customer touch points and use this information when dealing with customers via individual channels (for example, a mobile sales force, inbound and outbound call centers, Web sites, point-of-sale, and direct marketing via mail and E-mail).

Supply Chain Planning and Optimization

SAP

SAP Advanced Planner & Optimizer (SAP APO)

Global Available To Promise	Production Planning & Detailed Scheduling	Supply Network Planning	Demand Planning	Supply Chain Cockpit

Global Supply Chain Optimization
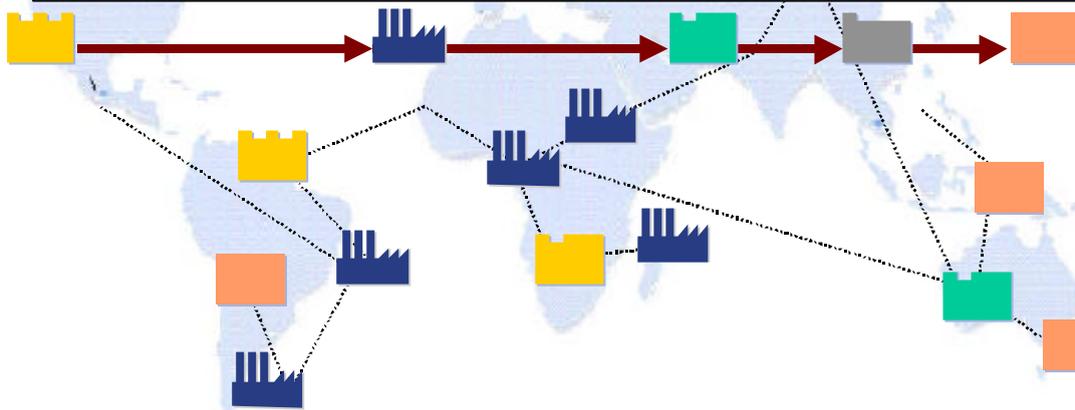
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- Advanced Planner and Optimizer (APO) provides a complete suite of supply chain planner applications based on SAP's liveCache technology which allows forecasting, planning, and optimizing to be executed in real-time.

- **Global Available To Promise (Global ATP)** - Matches supply to demand on a truly world-wide scale, and gives customers reliable delivery commitments by means of both real-time checks and sophisticated simulation methods.

- **Production Planning & Detailed Scheduling** - Optimizes the use of resources and creates accurate plant-by-plant production schedules in order to shorten production life-cycles and respond rapidly to changes in market demand.

- **Supply Network Planning** - Matches purchasing, production and transportation processes to demand, and balances and optimizes your entire supply network.

- **Demand Planning** - Identifies and analyzes patterns and fluctuations in demand, and creates accurate, dynamic demand forecasts.

- **Supply Chain Cockpit** - Models, monitors and manages your supply chain with a specially designed graphical user interface. The Supply Chain Cockpit provides users with a bird's eye view of all activities and applications.

Integration of APO with R/3 and SAP BW

R/3

Sales Orders

Manufacturing Execution

Warehouse Management

LES

APO

Demand Planning

Global ATP

Production Planning and detailed Scheduling

Supply Network Planning

Deployment

SAP BW

Historical Data

Key Perform. Indicators

External Data
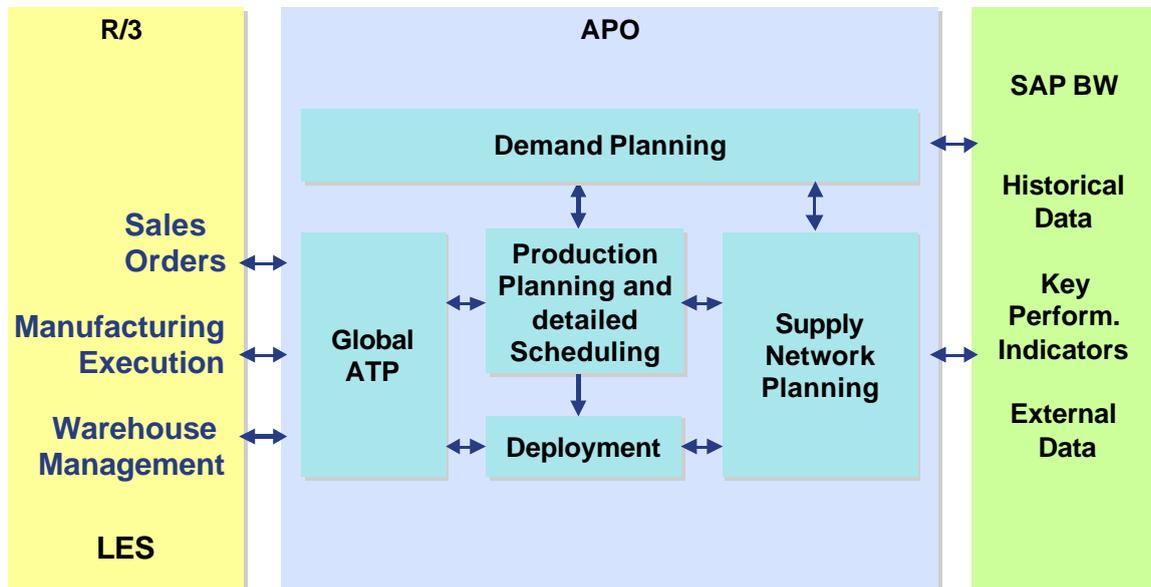
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- SAP APO is a separate SAP Solution with its own release cycle. Each of the SAP APO components, such as Demand Planning, can be implemented as a stand alone product or as an integrated part of the Business Framework.

- The SAP Logistics Execution System (SAP LES) is part of SAP's unique Supply Chain Management initiative, and lets you create links between the production, procurement, storage, distribution, transportation, sales, and service processes. It helps keep customers happy, staff productive and decision-makers informed. It means real-time data for decision-making, simulation and planning.

Business to Business Procurement

Business   to   Business

● **SAP Business to Business Procurement includes the creation and maintenance of requisitions, purchase orders and reservations with or without catalogs, approval and rejection, desktop receiving and service entry support, status and tracking, invoicing, and performance reporting functions.**

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■ The SAP Business to Business Procurement solution enables open, full-cycle, inter-enterprise procurement and covers all processes from the creation of a requisition, with or without catalogs, to the payment of the invoice. All end users are able to purchase goods and services straight from their desktops, leaving purchase departments free to focus on strategic purchasing operations. Using this compelling business to business procurement solution, companies can streamline their requisition and indirect procurement processes and cut the overall cost of procurement, while providing the purchasing department with visibility and control across the entire procurement chain.

■ Business to Business in the Internet

  • Business partners executing transactions via Internet. Backend (receiver) is an SAP R/3 system

  • Business to business via Extranet

  • Business partners communicating as external Internet users with an R/3 system

■ Business to Business as application communication

  • IT-Systems communicates via Electronic Data Interchange (EDI), Application Link Enabling (ALE), and the Internet
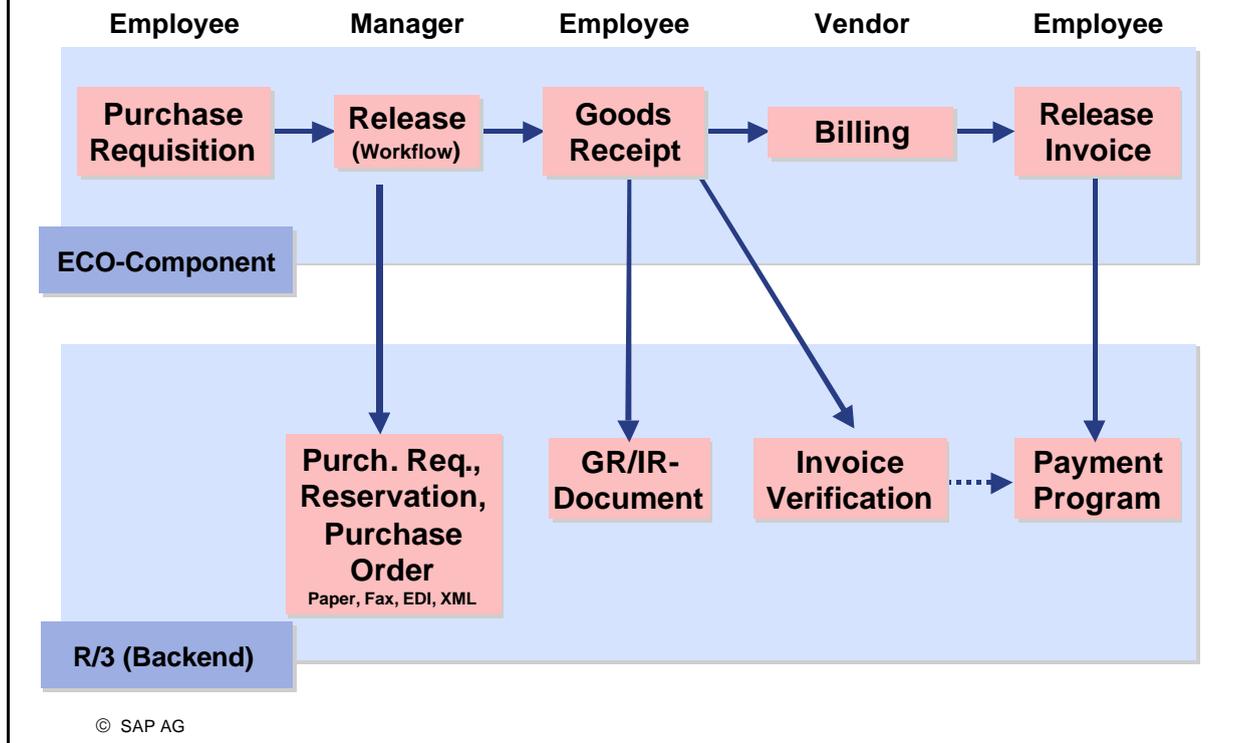
Procurement Process for Material

SAP

	Employee	Manager	Employee	Vendor	Employee

ECO-Component

| Purchase Requisition | → | Release (Workflow) | → | Goods Receipt | → | Billing | → | Release Invoice |

R/3 (Backend)

| Purch. Req., Reservation, Purchase Order
Paper, Fax, EDI, XML | GR/IR-Document | Invoice Verification | Payment Program |

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- SAP Business to Business Procurement includes the creation and maintenance of requisitions, purchase orders and reservations with or without catalogs, approval and rejection, desktop receiving and service entry support, status and tracking, invoicing, and performance reporting functions.
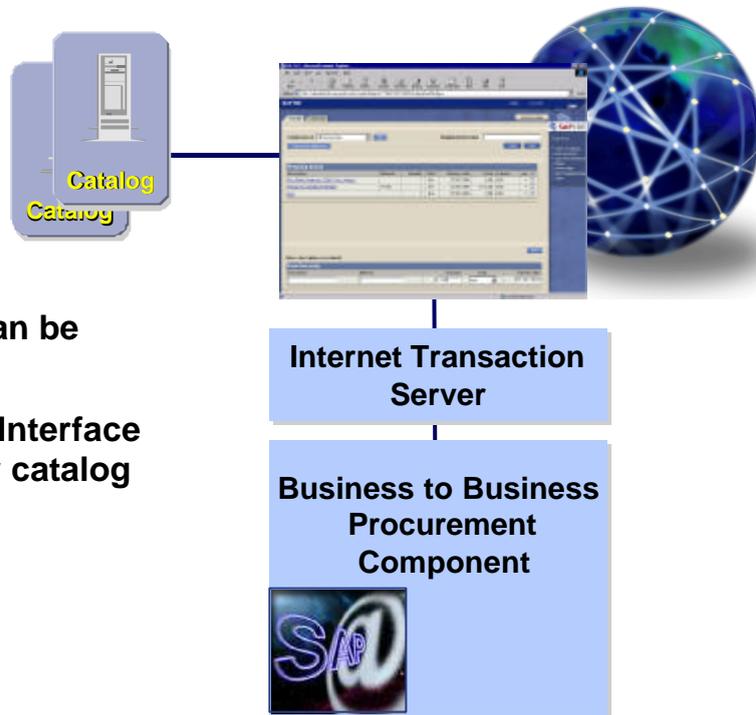
● **Multiple catalogs can be accessed**

● **SAP Open Catalog Interface allows any supplier catalog to be interfaced**

Internet Transaction Server

Business to Business Procurement Component

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- Multiple supplier catalogs may be connected via the SAP Business to Business Procurement system and the ITS to the web front-end.

- SAP Business to Business Procurement comes with a catalog for companies who want to host their own content on their intranet.

- The open catalog interface ensures that any supplier can publish their on-line catalog and, with SAP's Business to Business Procurement solution, allow organizations to connect to these catalogs, whether they are hosted at the buyer site, provided by an external content aggregator, or provided by the supplier.

- One of two catalogs (Requisite or Aspect) are bundled with the delivered SAP Business to Business Procurement product.

- Multiple catalog strategies can be implemented.

● **The SAP Business to Business Procurement component communicates with an SAP R/3 system**

   ■ **Requires a 3.1H or higher R/3 system as the back end**

   ■ **Version 2 will also function as a standalone system**

● **Familiar R/3 Development Environment**

   ■ **ABAP Development Workbench**

   ■ **ALE Toolkit**

Business to Business Procurement Component

Application

Business Workflow

...ard Admin & Monitori...

ABAP Workbench

... 4.5B

Database
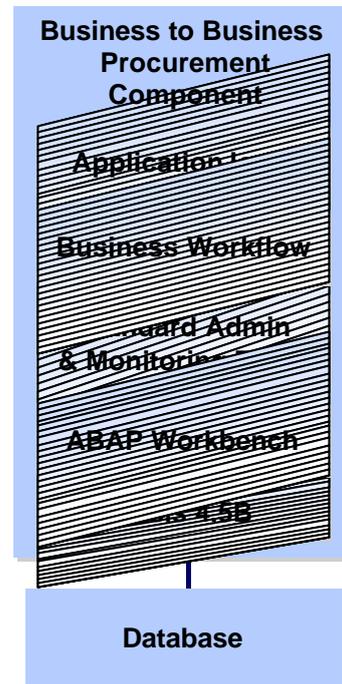
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- The SAP Business to Business Procurement system is an "R/3-like" system based on R/3 4.5B which contains only limited application and basis components.

- The SAP Business to Business Procurement system holds all requirement coverage requests (RCR), User IDs, and business logic.

- Separate database with core R/3 technology, 4.5B basis system, workbench, standard monitoring, workflow, specific application logic for Business to Business Procurement.

- Version 1.0 requires R/3 backend.

- Version 2.0 will function as a stand alone system with lean R/3 Materials Management component.

  • 3 scenarios with version 2.0:

    - Document created in R/3 backend

    - Loosely coupled configuration where you can keep specific information on the component

    - Standalone system with all R/3 Materials Management purchasing functionality (no financial aspect).

SAP BW provides...

SAP

Powerful Information Analysis
- innovative, intuitive user interface
- powerful OLAP analysis functions
- for all types of users

Rich Business Content
- information models, reports and extractors
- meta data repository
- company benchmark figures

End-to-end Data Warehousing Solutions
- R/3 and non-R/3 data extraction
- fully automated
- central control

R/3   other

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- The SAP Business Information Warehouse enables you to analyze data from operational R/3 applications or any other business application, including external data sources, such as databases, online services, and the Internet.

- The SAP Business Information Warehouse supports Online Analytical Processing (OLAP) and, thanks to its structure, is particularly suited for processing large volumes of operational and historical data.

- The Business Content functionality, which is optimized to handle core areas and processes, allows you to examine the relationships in every area within your company.

Multiple Ways of Delivering Your Knowledge

SAP

- **Online - fully Web-enabled or through your SAP system**
- **Offline - Plain HTML, HTML Help**
- **Offline - SAPShow for training purposes**
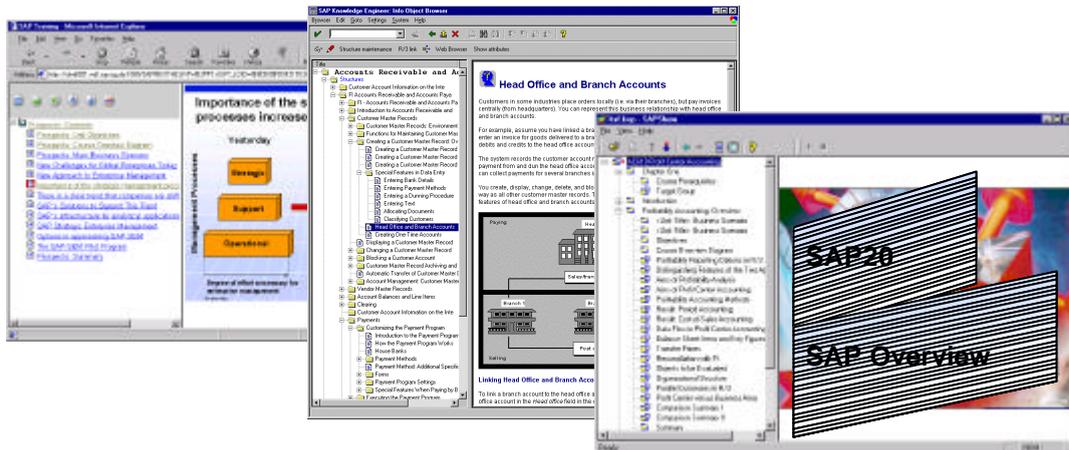
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■ For display out of Knowledge Warehouse, different viewing modes can be used.

- HTML in a Web Browser
  - No additional tools have to be installed
  - Complete display runs via a standard web browser
- Offline as plain HTML/compiled HTML
  - Documentation can be created offline and distributed via CD, for example
  - This format is used for the standard documentation CD that is shipped to all SAP customers
- Offline in SAP Show
  - Can be used to run training courses in Offline mode, that is, without any connection to the Knowledge Warehouse
  - The course you are currently participating in is being run with SAP Show.
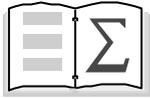
Co-operative Business Scenarios: Unit Summary

You are now able to:

- **Briefly describe the concepts of the New Dimension Products**

- **Describe the relationship among the New Dimension Products in the context of business scenarios**

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mySAP.com

Contents:

- **mySAP.com strategy**
- **Workplace**
- **Marketplace**

At the conclusion of this topic, you will be able to:

- **Briefly discuss the concept of mySAP.com**

- **Briefly discuss the concepts of the major elements of mySAP.com:**
  - **Workplace**
  - **Marketplace**

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SAP

- **Buy-Side** *(SAP Business-to-Business Procurement)*
  - **Targets a business' purchasing processes**
- **Sell-Side** *(SAP Online Store)*
  - **Business-to-Consumer**
  - **Business-to-Business**
- **Intranet/Self-Service** *(SAP Employee Self-Service)*
  - **Targets internal corporate users**
- **mySAP.com**
  - **Marketplace Portal**
  - **Workplace**

© SAP AG

- SAP Business-to-Business Procurement is a solution for the entire procurement cycle for maintenance, repair and operations (MRO) items and services.

- SAP Online Store lets customers market their products and services on the Internet. To tap the full benefits of SAP Online Store, customers need only a standard Web browser, and the online store provider must implement the functionality of R/3 Sales and Distribution. The business-to-consumer sector represents the classic playground for this type of sales front-end.

- Employee Self Service (ESS) functionality gives employees complete control of their own data - they can request vacation at their PCs, enter trip costs, and record working hours using the browser of their company's intranet system.

- mySAP.com is a comprehensive, open, e-business solutions environment comprising of portals, industry-specific enterprise applications, Internet applications and services, as well as XML-based technology - all of which combine to enable companies to participate in the Internet economy.
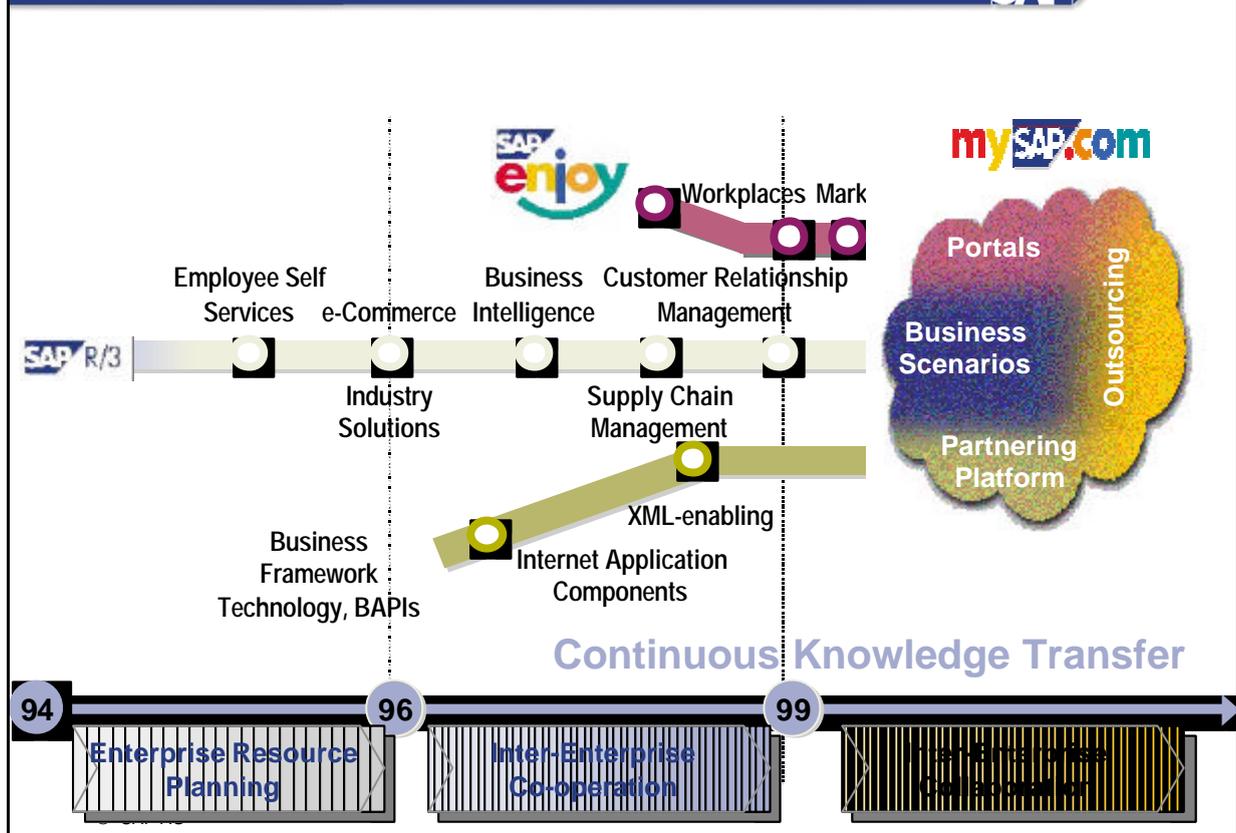
- Integration in the "old" economy meant business process integration.

  - ERP made SAP R/3 a worldwide standard system

  - Since 1996 SAP R/3 has been e-commerce capable

  - SAP products incorporated business technology for the future allowing customers to be ready for the future without system change

- Integration in the "new" economy requires integration of processes between enterprises.

  - Collaboration

  - More than working together

  - Processes, where many users participate, can be executed simultaneously as one-step-business

SAP

PERSONALIZED

through the Workplace

SOLUTIONS ON DEMAND

through SAP Products and Services

my**SAP**.com

COLLABORATIVE

through the Marketplace

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- mySAP.com places the Internet at the center of SAP's activities. It leverages all of SAP's key assets, including its extensive product portfolio, customer base, partner community, and expertise in integrating business processes.
- mySAP.com is the collaborative environment providing personalized business solutions on demand.

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mySAP**.com**

Data & Execution Backbones

mployees

Role-based Menu

Office Apps

ompanies

Execution System

Market

Buy

Sell

Intranet

mployee Self Service

Business Warehouse

SAP R/3

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Workplace Internet Business Framework
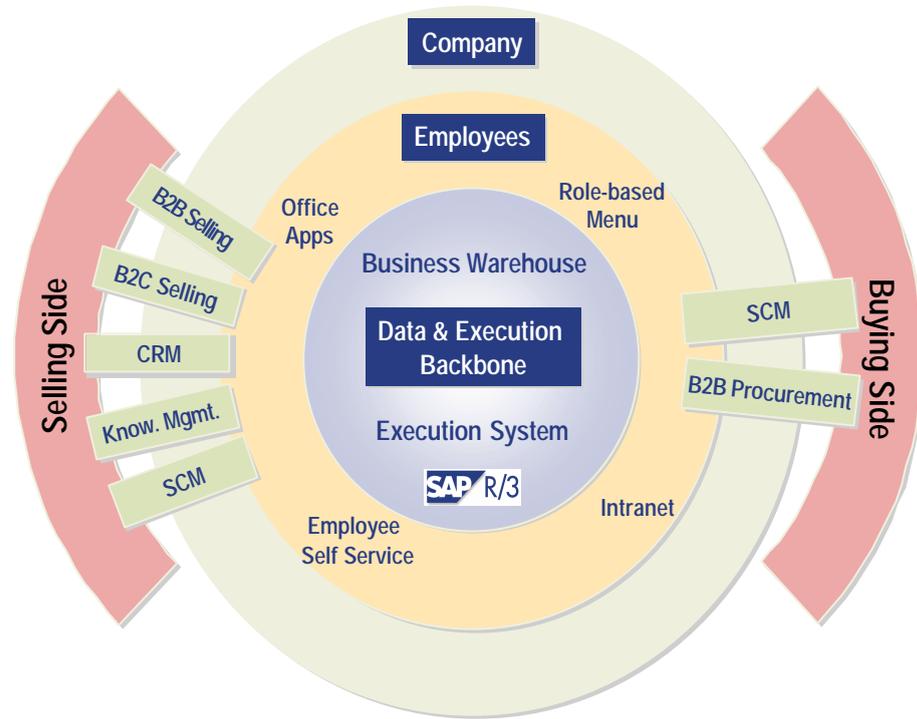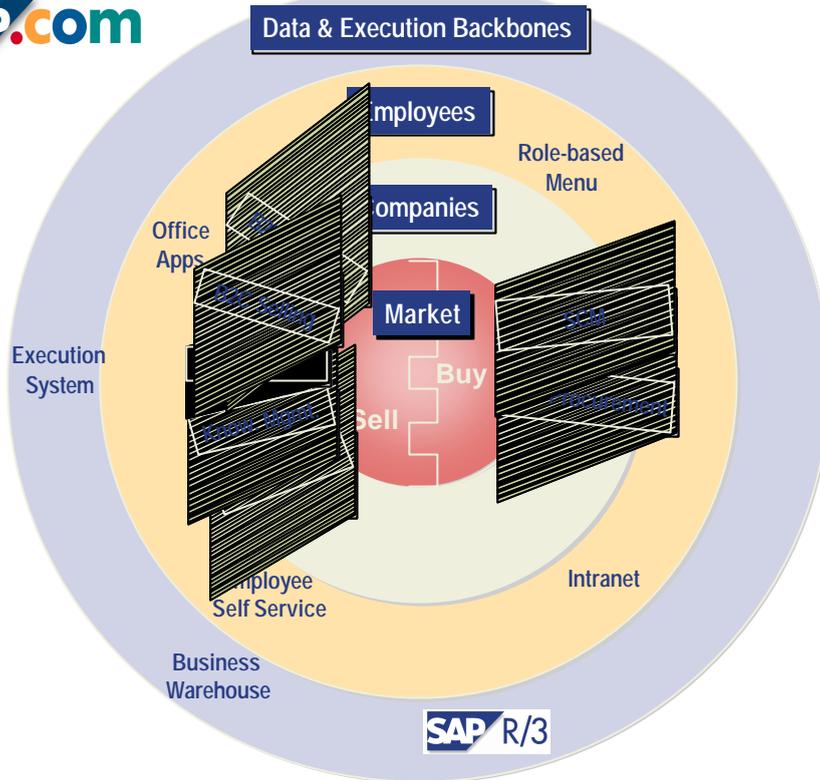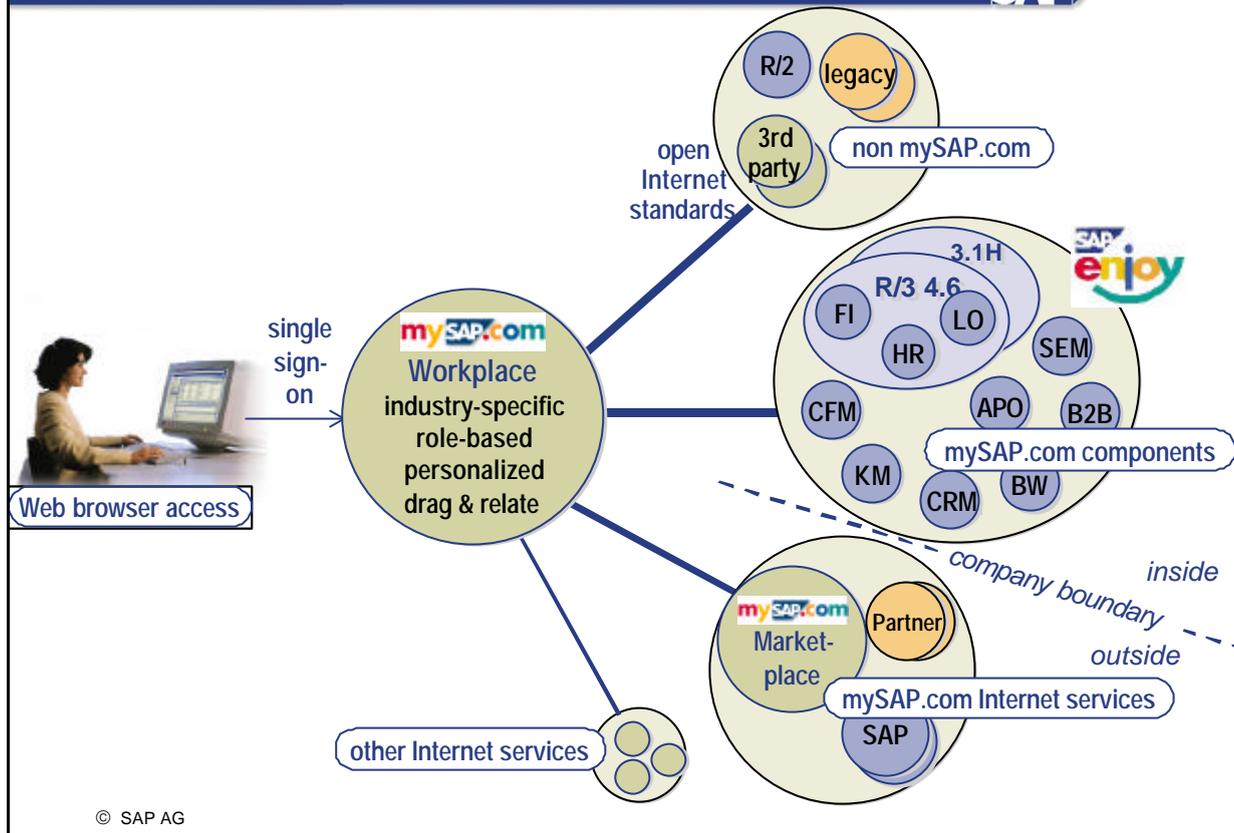
- The Workplace contains links inside and outside a company's boundaries.   Links can be made to:

  - Non mySAP.com components: External systems using open internet standards

  - mySAP.com components: Classical and new web-based R/3 transactions (R/3 Standard System, New Dimensions, industry solutions) , Reports (for example, Business Information Warehouse reports with BW 2.0a) , Knowledge Warehouse contents

  - mySAP.com Internet services: my.SAP.com Marketplace

  - Any Internet or intranet web sites

mySAP.com Workplace - Benefits

SAP

Key Benefits

- **Access to all necessary internal and external services through one screen**

- **Seamless integration in mySAP.com environment**

- **Portal is tailored to the user's role in the company**

- **Single sign-on access all services**

- **User friendly Web browser interface**

- **Access via the Internet anytime, anywhere**

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Marketplace Portal for Business Communities

- ● **A business portal hosted by SAP at http://www.mySAP.com**
- ● **Business community specific**
- ● **Enabling e-Communities**
  - ● **Building relationships**
  - ● **Collaboration**
  - ● **Internet transactions**
- ● **Access to (integrated) services**
  - ● **Web services (for example, find business partner)**
  - ● **Content services (for example, news)**

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- ■ The mySAP.com Marketplace is a public business portal hosted by SAP.

- ■ Anyone who sells or buys can participate in the mySAP.com Marketplace. It is not for just SAP applications or SAP customers.

- ■ The mission of the mySAP.com Marketplace is to engineer business collaboration across enterprises via the Internet.

- ■ Four of the main components of the mySAP.com Marketplace include:

  - • myhome: Personalized homepage for the registered user with favorites from the mySAP.com web site.

  - • Communities: Content-rich data organized along the vertical and horizontal industries supported by SAP.

  - • One Step Business: Portion of the site where users can browse member merchant web sites and procure products and services.

  - • Services: Internet services are available for the user to which he/she can subscribe.

Buying and Selling on the Marketplace

Marketplace Portal at mySAP.com

Search — Select — Offer — Register

Buyer

Seller

Receive — Transact one-step — Collect

Ope... tems (Fina... Logistics) O... ystems (Fi... & Logistics)

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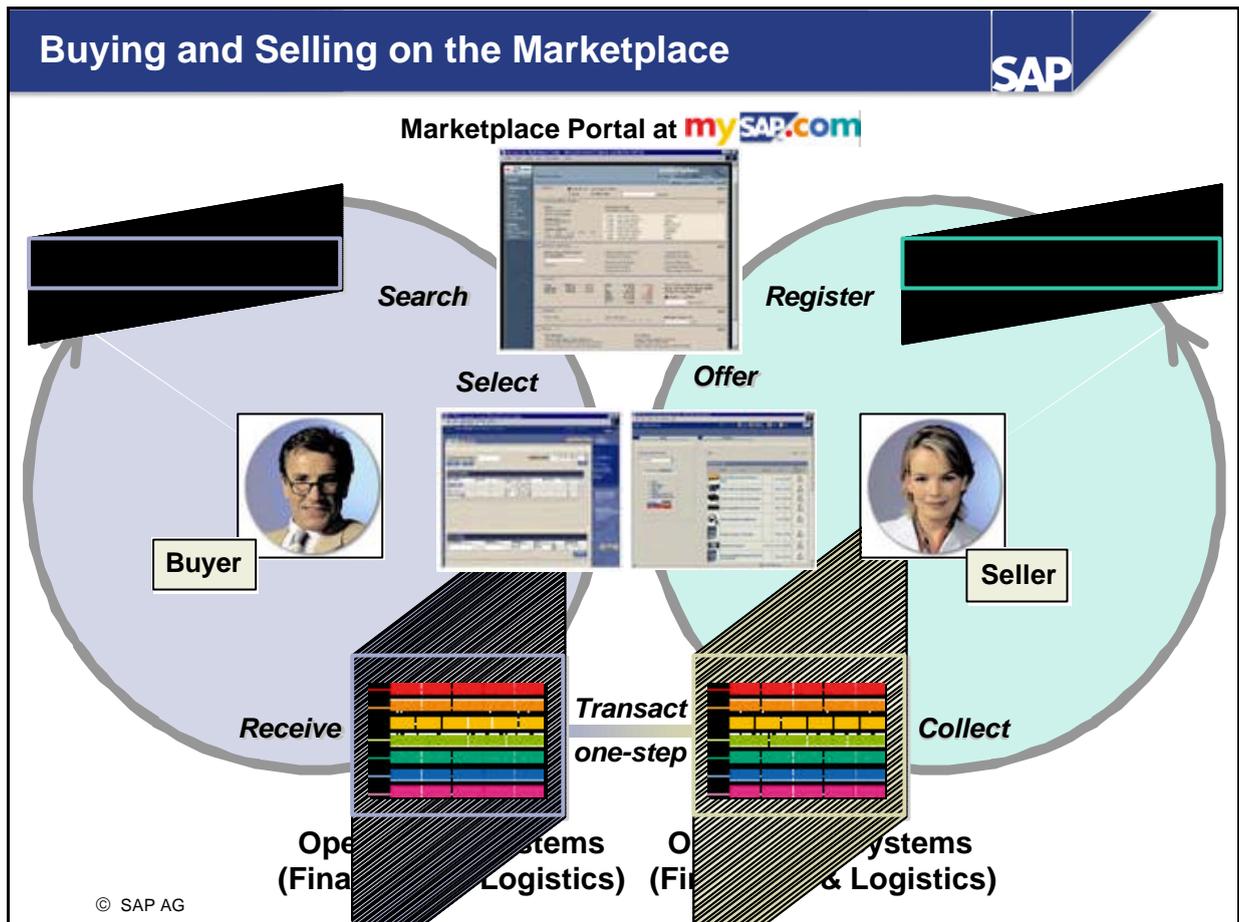
- Marketplace Portal is a place on the Web where communities can exchange goods and services electronically.

- Workplace is an application on a users desktop that cooperates with a Web browser and provides a personalized, role-specific view on the entire business world. This business world includes marketplaces, applications, services, and content provided by a company over the Intranet or other companies via the Internet.

- The business objectives of mySAP.com are to empower people, create value, and enable one-step business transactions. mySAP.com places the Internet at the center of SAP's activities. It leverages all of SAP's key assets, including its extensive product portfolio, customer base, partner community, and expertise in integrating business processes.

mySAP.com Marketplace - Benefits

SAP

Key Benefits

- **Personalized home page available for registered users**
- **Streamlined business process flow with one-step business**
- **Access to a broad scope of suppliers**
- **Reduce costs of interaction with external partners**
- **Content rich communities available for better decision making and to interact with other business professionals**
- **Direct access to value add Internet services**

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mySAP.com: Summary
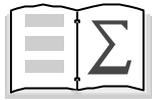
You are now able to:

- **Explain the concept of the mySAP.com strategy**

- **Briefly describe the concepts of the major elements of mySAP.com:**

  - **Workplace**

  - **Marketplace**

Contents:

- **Basic features**
- **User-specific settings**

At the conclusion of this unit you will be able to:

- **Identify the elements of a typical window**

- **Navigate in the system**

- **Make personal system settings**

Logging on to the R/3 System

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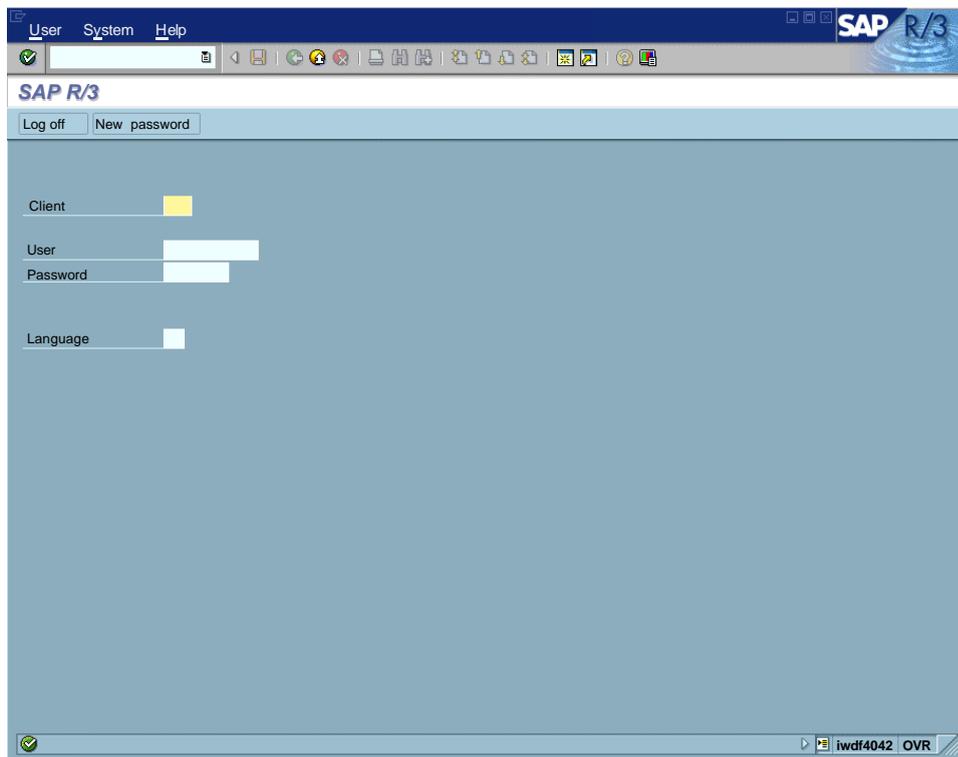
- The R/3 System is a **client system**. The client concept enables the joint operation, in one system, of several enterprises that are independent of each other in business terms. During each user session you can only access the data of the client selected during the logon.

- A **client** is, in organizational terms, an independent unit in the R/3 System. Each client has its own data environment and therefore its own master data and transaction data, assigned user master records and charts of accounts, and specific customizing parameters.

- A user master record linked to the relevant client must be created for users to be able to log on to the system.

- To protect access, a password is required for logon.
  The password is hidden as you type (you only see asterisks).

- SAP systems are available in several languages. Use the *Language* input field to select the logon language for each session.

- Multiple logons are always logged in the system beginning with Release 4.6. This is for security as well as licensing reasons. A warning message appears if the same user attempts to log on twice or more. This message offers three options:

  - Continue with current logon and end any other logons in the system

  - Continue with current logon without ending any other logons in the system (logged in system)

  - Terminate current logon

Screen Elements

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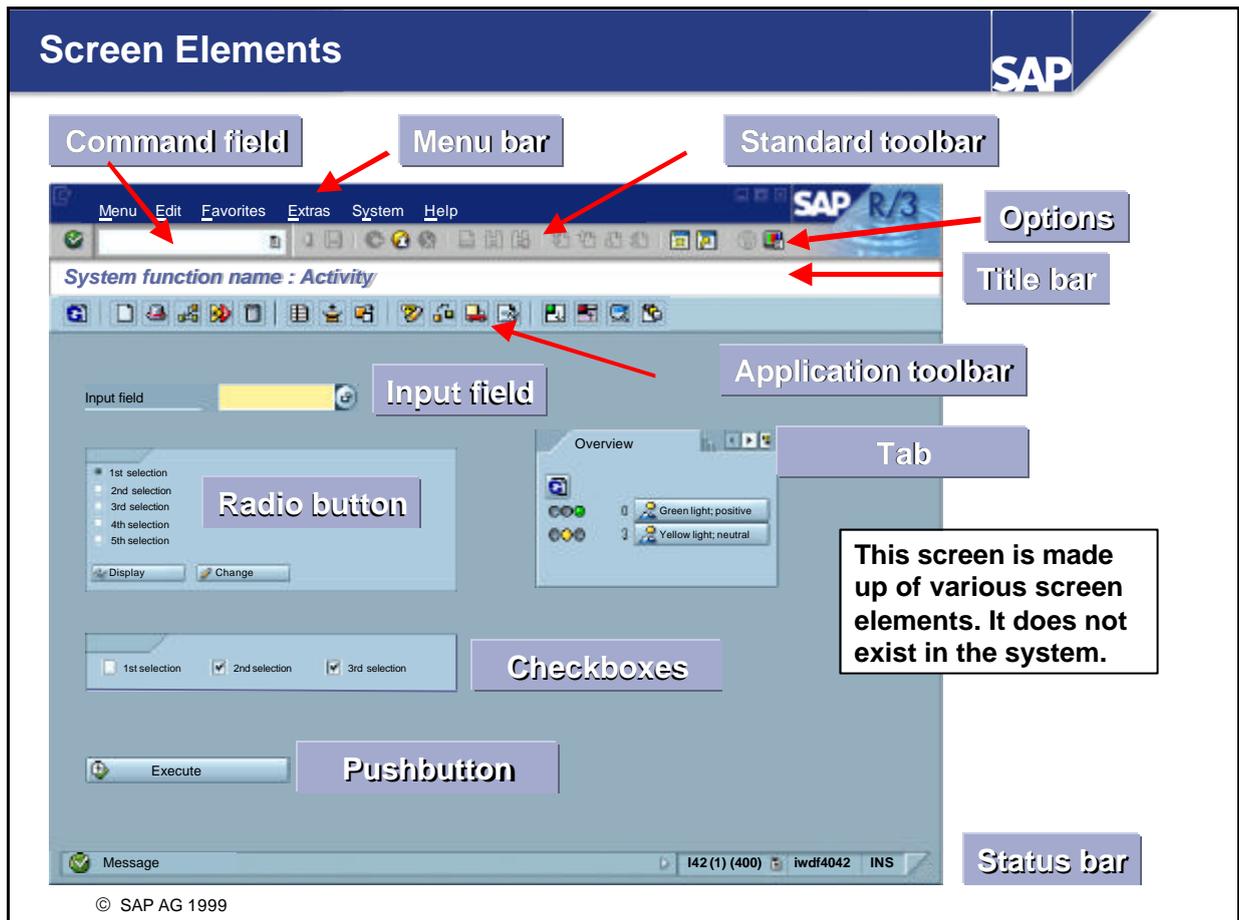
- **Command field:** You can use the command field to go to applications directly by entering the transaction code. You can find the transaction code either in the SAP Easy Access menu tree (see next slide) or in the relevant application under *System® Status*.

- **Menu bar:** The menus shown here depend on which application you are working in. These menus contain cascading menu options.

- **Standard toolbar:** The icons in the system function bar are available on all R/3 screens. Any icons that you cannot use on a particular screen are dimmed. If you leave the cursor on an icon for a moment, a small flag will appear with the name (or function) of that icon. You will also see the corresponding function key. The **application toolbar** shows you which functions are available in the current application.

- **Title bar:** The title bar displays your current position and activity in the system.

- **Check boxes:** Checkboxes allow you to select several options simultaneously within a group.

- **Radio buttons:** Radio buttons allow you to select one option only.

- **Status bar:** The status bar displays information on the current system status, for example, warning and error messages.

- A **tab** provides a clearer overview of several information screens.

- **Options:** You can set your font size, list colors, and so on here.

SAP Easy Access - Standard

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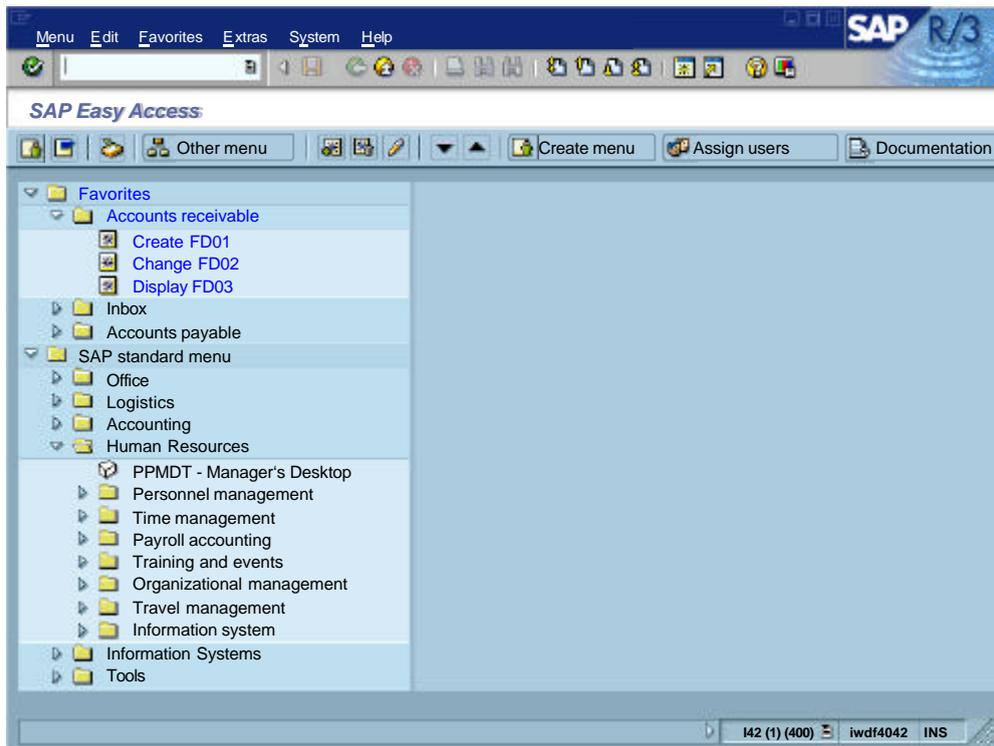
- **SAP Easy Access** is the standard entry screen displayed after logon. Using the menu path *Extras®
  Set start transaction* you can select a transaction of your choice to be the default entry screen after
  logon.

- You navigate through the system using a compact tree structure that you can adapt to your own
  specific requirements. Use the menu path *Extras® Settings* to change your view of the tree
  structure. You can use this to display technical names (transaction codes).

- You can also create a **Favorites** list of the transactions, reports, files and Web sites you use most.

- You can add items to your favorites list using the *Favorites* menu option or by simply dragging &
  dropping them with the mouse.

Selecting Functions...

SAP R/3

Menu   Edit   Favorites   Extras   System   Help

Create session
End session
User profile
Services
Utilities
List
Workflow
Links
Private notes
Own spool requests
Own jobs
Short messages
Status...
Log off

SAP Easy Access

Other menu   Create menu   Assign users   Documentation

Favorites
SAP standard menu

…using
Favorites or the
tree structure

…using the menu path

/nFD03

…using the technical name
(transaction codes)

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You can select system functions in the following ways:

■ Use the mouse to choose

- Menu options

- Favorites

- Other options in the tree structure (tree control)

■ Use the keyboard (ALT + the underlined letter of the relevant menu option)

■ Enter a **transaction code in the command field**:

- A transaction code (T-Code) is assigned to each function in R/3 (not each screen).

- You can access the assigned transaction code from any screen in the R/3 System.

- You can find the transaction code for the function you are working in under the *Status* option of the *System* menu.

- For example, to display Accounts receivable master data, enter "/n" and the appropriate transaction code (in this case "/nfd03").

- Other possible entries:
  "/n" ends the current transaction. "/i" ends the current session.
  "/osm04" creates a new session and goes to the transaction specified (SM04).

- You can also use the keyboard to get to the command field. Use the CTRL + TAB key combination to make the cursor move from one (input) field group to the next. Use TAB to move between fields within a group.

Role-Based User Menu
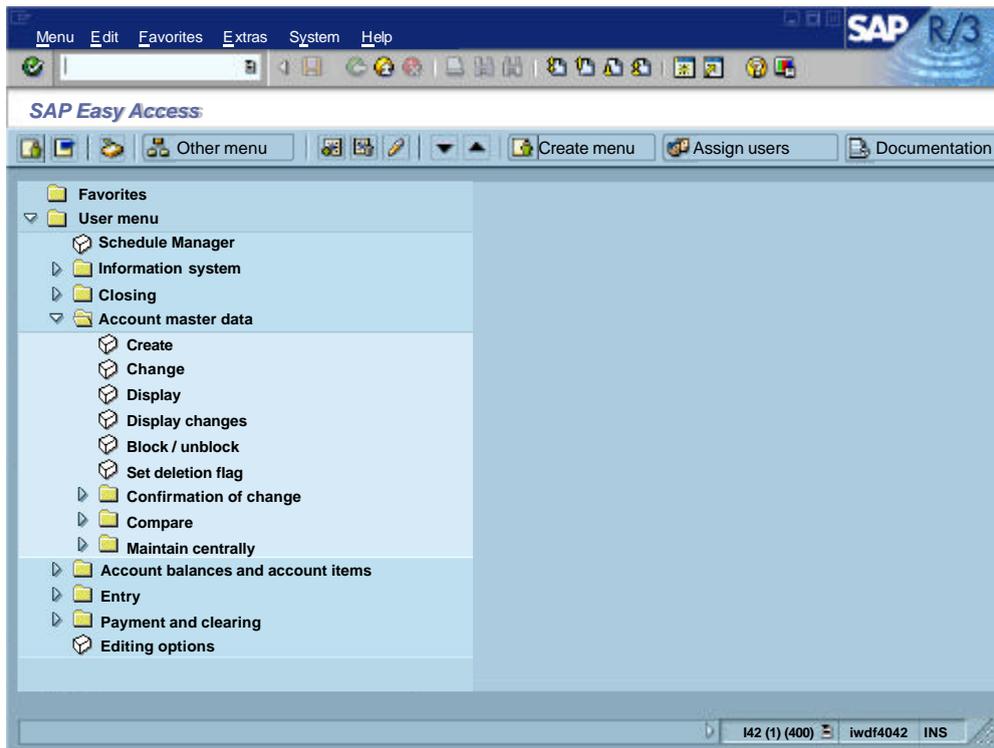
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- A **role** describes a set of logically linked transactions. These transactions represent the range of functions users typically need at their workstations.

- **Activity groups** (user roles) have to be set up using the Profile Generator so that users of the SAP System can work with user-specific or position-related menus.
  The authorizations for the activities listed in the menus are also assigned to the users using activity groups. With Release 4.6, predefined activity groups (user roles) from all application areas are included in the standard system.

- Users who have been assigned to an activity group can choose between the user menu and the SAP standard menu.

- The above screen shows the role-based user menu for the "Accounts Receivable Supervisor" as an example. You can find other roles that are supplied in the standard SAP System with the corresponding activity groups using the *Other menu* pushbutton in the *SAP Easy Access* initial screen.

Field Help - F1, F4

Display Customer: Initial Screen

Display Customer: Initial Screen

Display Customer: Initial Screen

Customer   1000   Becker Berlin

Company code   1000   IDES

F1

F4

Help - Display Customer: Initial Screen

Customer account number
    A unique key is used to clearly identify the customer
    within the SAP system.

Procedure
    When creating a customer master record, the user
    either enters the account number of the customer or
    has the system determine the number when the
    record is saved, depending on the type of number
    assignment used..

Application help   Technical info

Message

Restrict Value Range

Restrictions

Customer
Company code
Company name
City
Currency

Restrict number to   100   No restriction

Possible entries

Hit list

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- Use **F1** for help on fields, menus, functions and messages.

- F1 help also provides technical information on the relevant field. This includes, for example, the parameter ID, which you can use to assign values to the field for your user.

- Use **F4** for information on what values you can enter. You can also access F4 help for a selected field using the button immediately to the right of that field.

- If input fields are marked with a small icon with a checkmark, then you can only continue in that application by entering a permitted value.

  - You can flag many fields in an application to make them either required entry fields or optional entry fields. You can also hide fields using transaction or screen variants or Customizing.

SAP Online Help

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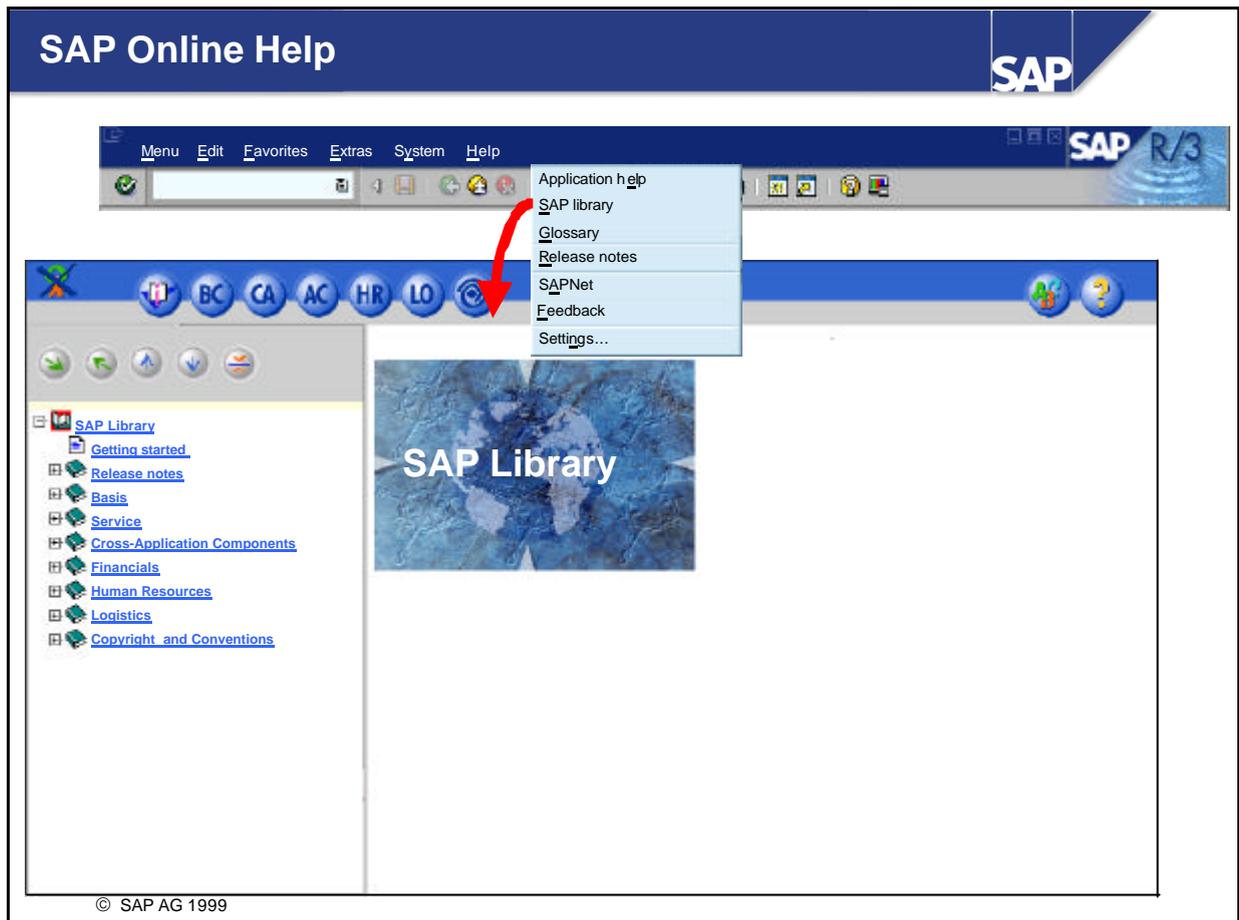
- The R/3 System provides comprehensive online help. You can display the help from any screen in the system. You can always request help using the *Help* menu or using the relevant icon.

- The *Help* menu contains the following options:

  - Application help: Displays comprehensive help on the current application. Selecting this menu option in the initial screen displays help on getting started with R/3.

  - SAP Library: This is where all online documentation can be found.

  - Glossary: Enables you to search for definitions of terms.

  - Release notes: Displays notes which describe functional changes that occur between R/3 releases.

  - SAPNet: Enables you to log on to SAPNet.

  - Feedback: Enables you to send a message to the SAPNet R/3 Frontend, SAP's service system.

  - Settings: Enables you to select settings for help.

System Functions - Services

SAP

Menu Edit Favorites Extras System Help

SAP Easy Access

Create session	Reporting
End session	Quick Viewer
User profile	Output controller
Services	Table maintenance
Utilities	Batch input
List	Fast entry
Workflow	Direct input
Links	CATT
Private notes	Jobs
Own spool requests	Queue
Own jobs	SAP Service
Short messages	Appointment calendar
Status...	Business Workplace
Log off	

Favorites
SAP standard menu

Documentation

- The *System* menu contains, among others, the following options:

  - Create/end session: Enables you to create and end sessions. You can work with up to 6 sessions at a time.

  - User profile: This is where you can enter user-specific settings.

  - Services: Takes you to important service functions (see below).

  - List: Contains important list functions, such as searching for character strings, saving in PC files, printing, and so on.

  - Status: Enables you to display important user and system data.

  - Log off: Ends the SAP R/3 session with a confirmation prompt.

- The *System ® Services* menu contains, among others, the following options:

  - Reporting: Starts reports (ABAP programs).

  - Output controller: This is where you manage user-specific print requests.

  - Table maintenance: This is where you process tables and views.

  - Batch input: Administers batch input sessions and data transfer.

  - Jobs: This is where you can administer jobs that are processed in the background.

 - SAP Service: Enables you to log on to SAP's SAPNet R/3 Frontend.

System Functions - User Profile

SAP

```
  User   Edit   Goto   System   Help

  ⊘          ▣  ◁ 🖫  😀😀😀  🖴 🕮🕮🕮  🗗🗗🗗🗗  🖼🖼  😀🖳

  Maintaining your user profile


  User            MUSTER
  Last changed by  ADMIN      01.01.2000 12:00:00    Status  Saved

   Address    Defaults   Parameters

  Start menu    ┃                          ⊡               ▲
                                                           ▼
  Logon language     ▢

  Output controller              Decimal notation
                                   ◉  1.234.567,89
  ┌─────────────────────┐          ○  1,234,567.89
  └─────────────────────┘          ○  1 234 567,89

     ▢  Output immediately       Date format
     ▢  Delete after output       ◉  DD.MM.YYYY
                                   ○  MM/DD/YYYY
  Personal timezone               ○  MM-DD-YYYY
    ▢▢▢▢                          ○  YYYY.MM.DD    ▲
                                   ○  YYYY/MM/DD    ▼
  CATT

                                ▷  I42 (1) (400)  🖿  iwdf4042   INS
```

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- Use the menu option *System® User profile® Own data* to set your own personal profile. You can choose between the *Address, Defaults* and *Parameters* tabs.

  - Address: You can create and maintain personal data here, for example, name,function, room number, telephone number, e-mail addresses and so on.

  - Defaults: Defaults include the date display format, the decimal notation format, the default printer, the logon language, and so on.

  - Parameters: Use this to assign entries to commonly-used fields. This is only available for input fields that have been allocated a parameter ID.

                   Procedure for finding out a field's Parameter ID: Go to the input field to which you want to assign a value. Choose F1, then the "Technical info" pushbutton. This opens a window that displays the corresponding parameter ID (if one has been allocated to the field) in the "Field data" section.

- The *User profile* menu also contains, among others, the following options:

- *Hold data, Set data, Delete data.* Use *Hold data* to keep data values that you have entered in fields in an application for the duration of a user session. When you call up the application again, you can overwrite these values. Once you have *Set data* , you can no longer overwrite these values and have to use *Delete data* if you want to enter different values.

Navigation: Unit Summary
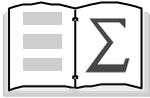
You are now able to:

- **Identify the elements of a typical window**

- **Navigate in the system**

- **Make personal system settings**

Exercises
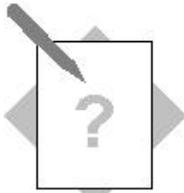
Unit: Navigation

Topic: Basic features
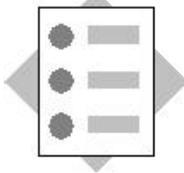
At the conclusion of this exercise, you will be able to:

- Log on to a given R/3 System

- Find transaction codes

- Access the SAP Library

- Use F1 help to find field information

- Use F4 help to search for possible field entries
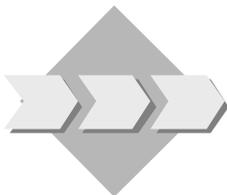
As a new user of the R/3 System, you begin to navigate the system using the menu paths and transaction codes. You also begin to access various online help and discover the kinds of information each provides.

1-1   Logging on to the R/3 System

Select the appropriate R/3 System for this course. Use the client, user name, initial password and logon language specified by the instructor. The first time you log on, you will get a prompt in which you must enter your new password twice. Make a note of the following:

Client: _ _ _   User: _ _ _ _ _ _ _ _   Password: _____   Language: _ _

1-2   What is the maximum number of sessions you can have open simultaneously? __

1-3   Identify the screen names and find the transaction codes that correspond to the following menu paths?

       1-3-1   *Tools ® Administration ® Monitor ® System Monitoring ® User Overview*

              Name of screen: _____

              Transaction: _____

1-3-2   *Accounting ® Financial Accounting ® Accounts receivable ®*
         Master records ® Display

Enter *Customer* **1000** and *Company code* **1000** to get to the next
screen.

Name of screen: _____

Transaction: _____

1-4   Help

1-4-1 If you choose *Application help* in the *SAP Easy Access* screen, which area of
       the SAP Library does it take you to ?

       _____

To answer the questions below, you will need to go to the *Display
Customer: Initial Screen*

1-4-2 Use **F4** help on the *Customer* field to find the customer number for
       Becker ##.

       Note: ## corresponds to your assigned group number.

       _____

1-4-3 Use **F1** help on the *Customer* field. What is the use of this field? Please
       write a brief summary of the business-related information.

       _____

1-4-4 Use **F1** help on the *Company code* field. If you choose the *Application help* button from the F1 help screen, which area of the SAP Library does it take you to?

_____


1-4-5 Which pushbutton do you need to use on the F1 help screen to find the parameter ID for the *Company code* field?

_____

Unit: Navigation

Topic: User-specific settings
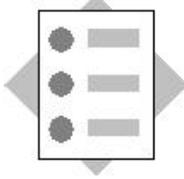
At the conclusion of this exercise, you will be able to:

- Set a user parameter for a field

- Set various user defaults such as language, date format, and decimal notation

- Create folders and add transactions to your Favorites

- Select a start transaction of your choice as the default displayed after logging on (optional)
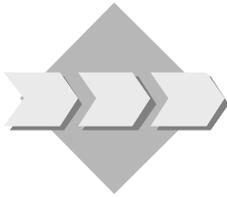
You begin to set various user-specific settings to personalize the system to your liking.

Exercises marked * are optional.

2-1 Setting user parameters.

2-1-1 Assign a parameter value for the *Company code* field to your user profile.

Note: The instructor will tell you what parameter value to enter.

Parameter ID: ___ ___ ___

Parameter value: ___ ___ ___ ___

2-2 Setting user defaults.

2-2-1 In your user profile, set your logon language to the value used for the course.

2-2-2 In your user profile, select the decimal notation and date format that you desire.

2-3 Defining favorites of your choice.

2-3-1 Insert at least one new folder under the Favorites folder.

2-3-2 Add any two of your "favorite" transactions to the corresponding folder(s).

2-3-3 Add the Internet address "http://www.sap.com" under the text "SAP Homepage".

2-3-4 Add the Internet address for the online evaluation (the instructor will tell you the URL) under the text "Online Evaluation".

*2-4 Setting a start transaction.

2-4-1 Enter a transaction of your choice as the initial transaction. You will then need to log off and on again for the change to take effect.

Note: If desired, you can change the initial transaction back to the system default (SAP Easy Access).

Solutions

Unit: Navigation

Topic: Basic features

1-1   Log on to the system specified by the instructor and change your initial password.

1-2   You can open and close sessions using *System ® Create session* (or using the appropriate icon) and *System ® End session*.
The maximum number of sessions you can have open simultaneously is 6.

1-3   To find the transaction code, select *System ® Status*. These screen names and transaction codes correspond to the menu paths:

   1-3-1   Transaction: SM04 for Screen Name: *User list*

   1-3-2   Transaction: FD03 for Screen Name: *Display Customer: General data*

1-4   Help

   1-4-1   The entire SAP Library is available including Getting Started.

   Help ® Application help

   1-4-2   T-CO05A##   (## corresponds to your assigned group number)

   When you select **F4** in the *Customer* field, the *Restrict Value Range* window appears. You can explore the various tabs to see the different search criteria available. Find a tab that includes the *Name* field and enter the following:

Field Name	Values
Name	*Becker ##*

   Select the *Continue Enter* pushbutton. A window now appears listing the customer account numbers that match your search criteria. Select the line that corresponds to *Becker ##*, then select the *Copy Enter* pushbutton. This automatically copies the customer account number into the *Customer* field.

   1-4-3   Suggestion: The customer is a unique key (account number) used to clearly identify the customer within the system.

   1-4-4   FI – Accounts Receivable and Accounts Payable

   1-4-5   Use the *Technical Info* pushbutton to find the *Parameter Id*: BUK.

Unit: Navigation

Topic: User-specific settings

2-1 Setting user parameters.

    2-1-1 To assign a parameter value to a field you will need the parameter ID of the field. First you need to select a transaction that contains this field. For example, *Company code* can be found in transaction **FD03**. Next, place the cursor on that field (just click on it with the mouse). Accessing:

    F1 ® Technical Info ® Parameter ID

    gives you the required information. For the *Company code* field, the parameter ID is **BUK**.

    Finally, you enter the parameter ID and desired value in your user profile:

    System ® User profile ® Own data

    On the *Parameter* tab you enter the parameter ID and value that you want to be entered into the field. *Save* your entries.

2-2 Setting user defaults.

    2-2-1 To set the logon language, go to your user profile:

    System ® User profile ® Own data

    On the *Defaults* tab, enter the language of your choice in the *Logon language* field.

    2-2-2 To set the decimal notation and date format, remain on the *Defaults* tab in your user profile. Select the indicator adjacent to the notation and format you desire. *Save* your selections.

2-3 Defining favorites of your choice.

    2-3-1 *Favorites ® Insert folder*

    Type any name for the folder then select *Enter*. You can add as many folders as you desire. Once created, folders can be dragged and dropped to position them where you want.

    2-3-2 To create favorites, select specific applications (transactions) that you need as favorites for your daily work from the menu tree of the SAP standard menu. Add them to your Favorites list by selecting them and choosing *Favorites ® Add* from the menu bar. Alternatively, use the mouse to drag & drop favorites to a folder. You can also use the menu path ***Favorites ® Insert transaction*** to add using a transaction code.. Finally, you can move existing favorites to different folders later using ***Favorites ® Move*** or using drag & drop.

2-3-3 Create Internet addresses using ***Favorites ® Add Web address or file***. When you select SAP Homepage from your favorites, an Internet browser will open and you will be connected to SAP's homepage.

2-3-4 ***Favorites ® Add Web address or file***

You will use this link at the end of the course to fill out the course evaluation.

2-4 Setting a start transaction.

2-4-1 ***Extras ® Set start transaction***

Enter a transaction of your choice then select the *Enter* pushbutton. Notice the system message on the status bar indicates that your selected transaction has been set as the start transaction. The next time you log on, the system will go directly to your start transaction.

Note: To change back to SAP Easy Access as the initial screen, follow the menu path again, delete the transaction code and select *Enter*. The next time you log on, SAP Easy Access will be the initial screen.

System-wide Concepts

Contents:

- **Organizational Units and Master Data**
- **Transactions and Documents**
- **Analysis and Reports**

# System-wide Concepts: Unit Objectives

SAP

At the conclusion of this unit, you will be able to:

- **Explain the concept of a business scenario**
- **List the main elements of business scenarios**
- **Describe the relationship among the main elements of a business scenario**

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Business Scenarios - Main Elements

- Organizational Unit
- Master Data
- Transaction
- Document
- Report
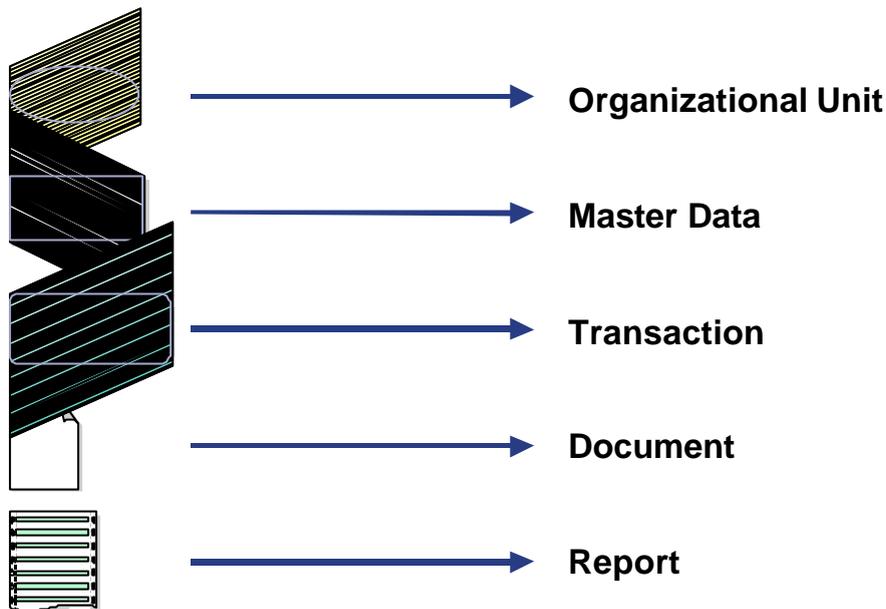
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- **Business Scenario:** Business-related grouping of business processes localized in a specific organizational area that share some similar goals in an enterprise, such as purchasing, services, balance sheet preparation, production, personnel administration, and so on.

- **Organizational Unit:** Organizational grouping of enterprise areas which, for legal reasons or for other specific business-related reasons or purposes, are grouped together. Organizational units include legal company entities, sales offices, and profit centers.

- **Master Data:** Data which is used long-term in the R/3 System for several business processes. Examples include customers, materials, and vendors.

- **Transactions:** Application programs which execute business processes in the R/3 System such as creating a customer order, posting an incoming payment, or approving a leave request.

- **Document:** A data record that is generated when a transaction is carried out.

- **Reports:** Program which reads certain data elements and displays them in a list.

Enterprise Structure Terminology
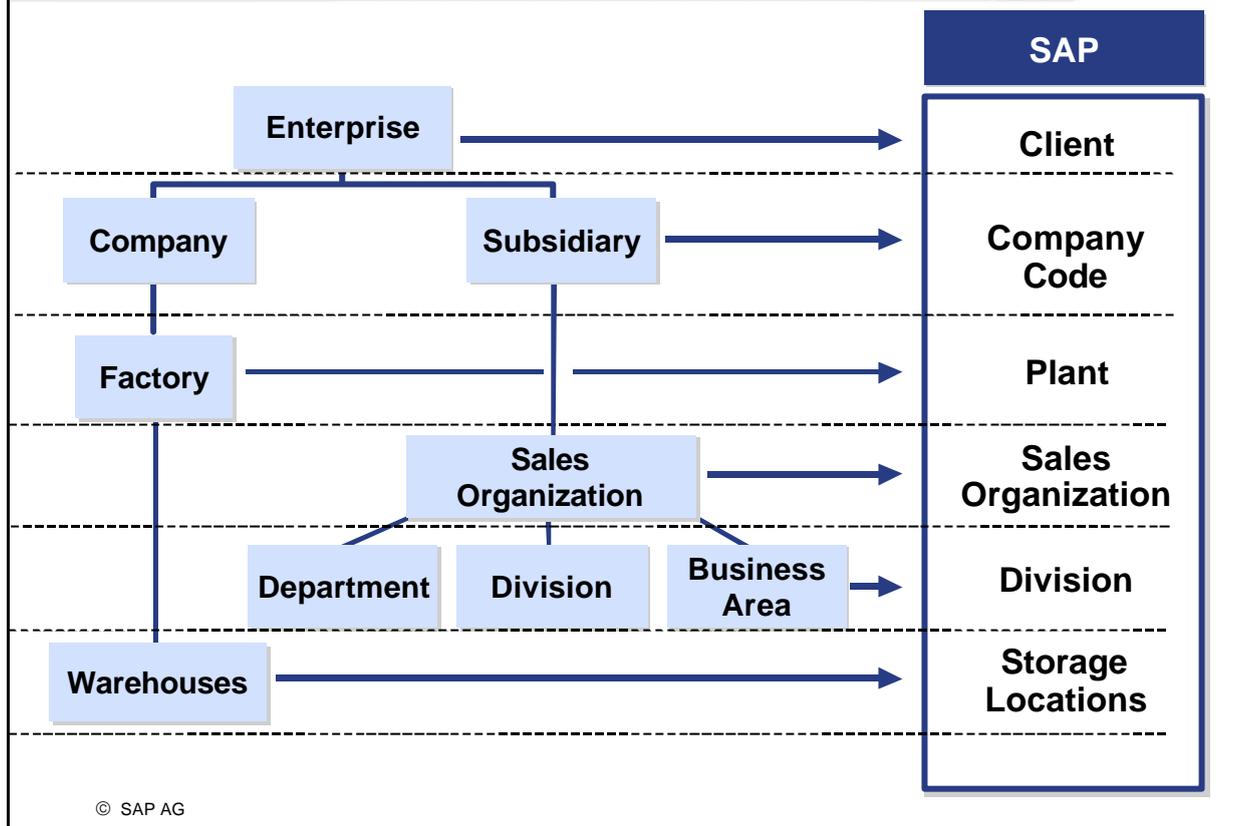
■ An enterprise structure is mapped to SAP applications using organizational units. Organizational units handle specific business functions.

■ Organizational units may be assigned to a single application (such as a sales organization assigned to Sales and Distribution, or to several applications (such as a plant assigned to Materials Management and Production Planning).

Organizational Structures - Levels

SAP

Client

Company Code 1000   Company Code 3000

Controlling Area 2000

Storage Location 0001   Storage Location 0002   Storage Location 0003   . . .
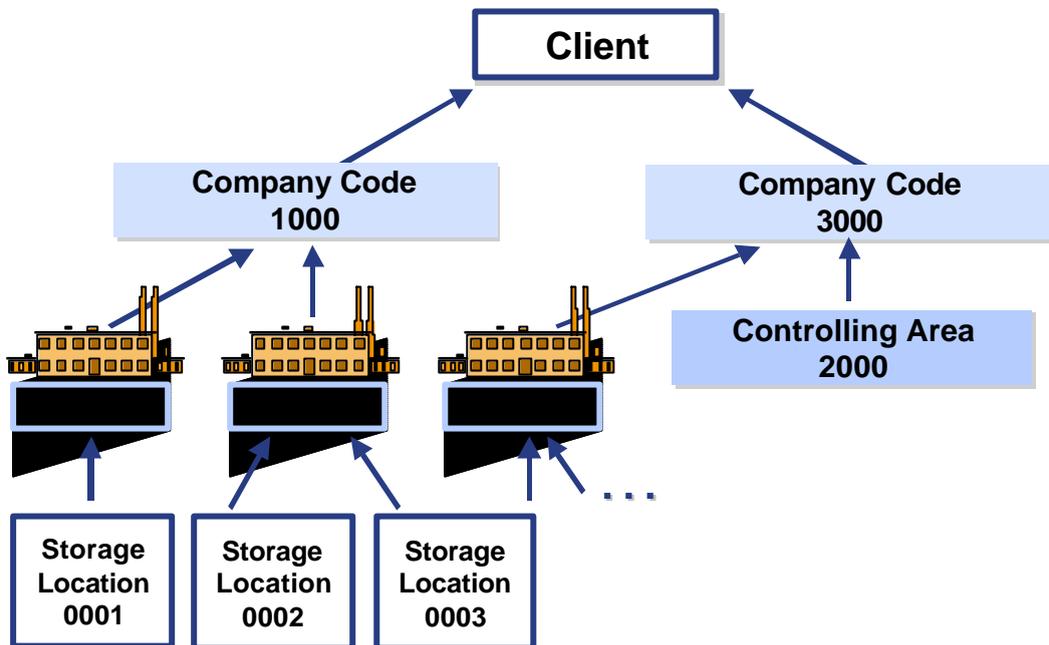
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- **The highest-level element of all organizational units is the client.** The client can be an enterprise group with several subsidiaries. All of the enterprise data in an R/3 System implementation is split into at least the client area, and usually into lower level organizational structures as well.

- Flexible organizational units in the R/3 System enable more complex enterprise structures to be represented. If there are many organizational units, the legal and organizational structure of an enterprise can be presented in different views.

- By linking the organizational units, the separate enterprise areas can be integrated and the structure of the whole enterprise represented in the R/3 System.

Organizational Structures - Business Functions

Business
- Enterprise
- Financial Accounting/ Sales
- Cost Accounting
- Production/ Distribution
- Inventory Management

Organizational Units
- Client
- Company Code 1000
- Sales Organization 1000
- Controlling Area 1000
- Plant 1000
- Plant 1100
- Distribution Channel 10
- Storage Location 0001
- Storage Location 0002
- Storage Location 0003

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- An enterprise is structured in the SAP R/3 System according to business functions that must correspond to the functionality assigned to the organizational units.

- Examples:

 - A Company Code is a unit included in the balance sheet of a legally-independent enterprise. It is the central organizational element of Financial Accounting.

  - The Controlling Area is the business unit where Cost Accounting is carried out. Usually there is a 1:1 relationship between the controlling area and the company code. For the purpose of company-wide cost accounting, one controlling area can handle cost accounting for several company codes in one enterprise.

  - In the context of Sales and Distribution, the Sales Organization is central organizational element that controls the terms of sale to the customer. Distribution Channel is the element that describes through what channel goods and/or services will be distributed to the customer.

  - In the context of Production Planning and Control, the Plant is the central organizational unit. A plant is the place of production or simply a collection of several locations of material stocks in close physical proximity.

  - A Storage Location is a storage area comprising warehouses in close proximity. Material stocks can be differentiated within one plant according to storage location (inventory management).

Master Data
(Customer Master Data)

General Data
(cross-enterprise

Financial Accounting Data
(only relevant for company code)

Sales Data
(only sales-relevant data
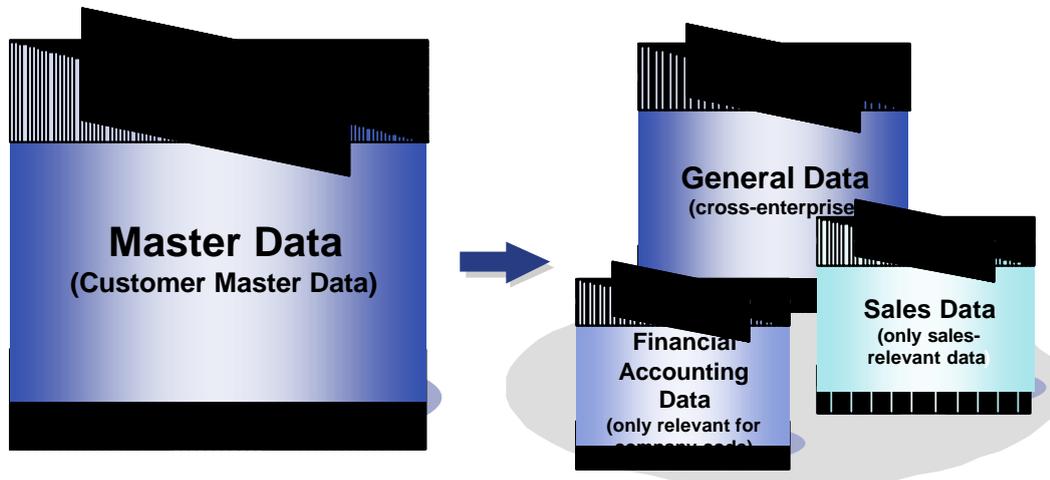
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- Data records that remain in the database for a long period of time are called master data. Master data includes creditors, vendors, materials, accounts, and so on.

- Master data is created centrally and can be used in all applications.
  Example:

  • A customer is master data that can be used in customer requests, deliveries, invoices, and payments.

- Master data also has an organizational aspect as it is assigned to organizational units.

- Master data has cross-component usage
  Examples:

  • Customer master data uses the same data for financial accounting and sales

  • Customer master records can be assigned to the following organizational units:

    - company code

    - sales organization

    - distribution channel

    - division

SAP

General Data

Client

Name 1
Name 2
Address
Telephone

Bank Information

DE   500 500 10   123 456 78

Company Codes

1000

Company Code Data

Reconciliation account   nnnnnn
Terms of payment   ZB01
Item sorting   0005
Dunning procedure   0001
:

3000

Company Code Data

Reconciliation account   nnnnnn
Terms of payment   ZB20
Item sorting   0001
Dunning procedure   0002
:

© SAP AG
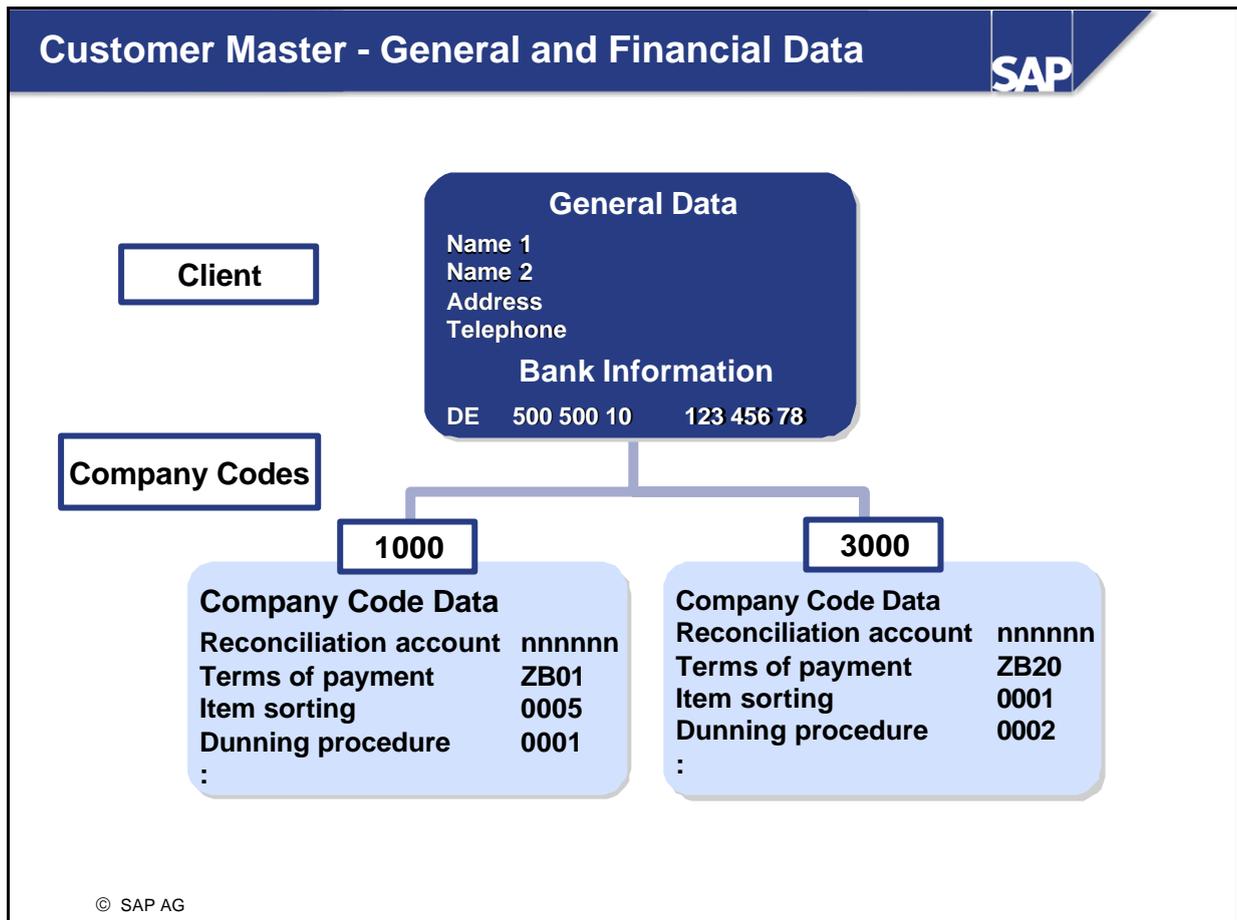
- When creating a customer master record, you enter:
  - Shared data on the client level
  - Company code-specific data for each company code
- Data on the client level can be used by all company codes. The customer account number is assigned on this level. That means, the same customer has an explicit accounts receivable number in all company codes from a financial view.

Customer Master - Sales Data

General Data

Name
Address
Telephone

Client

Company Code Data

Company Code
1000

Company Code Data

Company Code
3000

Sales Organization Data

Sales Organization
1000

Financial Accounting
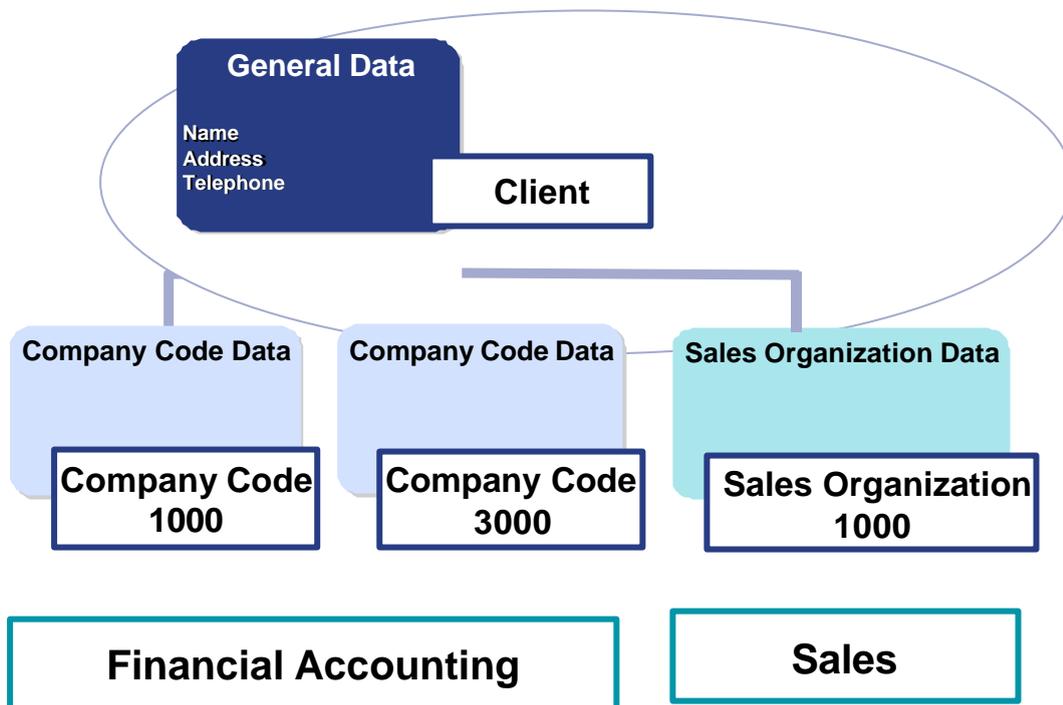
Sales

© SAP AG

- If you also have SAP Sales and Distribution implemented, there are additional fields you can maintain. These fields contain information and control data that are necessary for processing the business activities in the Sales area.

- Fields for customer master data are divided into Accounting and Sales areas. Address data is used from both areas. In the Sales area, information recorded can be accessed by Financial Accounting and vice versa.

   Note:

   The structural logic for customer master records/accounts receivable is also valid for vendor master records/accounts payable.

Views of the Material Master Record

Material Master Record Definition:

The material master is a central data object in the SAP R/3 System. It represents raw materials, supplies, expendables, semi-finished goods, products, production resources and tools

Sales

Costing

...rk ...ting

S... Plant/...

Financ... Accounti...

Storage

© SAP AG

- The material master represents the central source for releasing material-specific data. It is used by all of the SAP Logistics components in the R/3 System.

- Integrating all of the material data in one single database object means that the problem of data redundancy is not an issue. The stored data can be used by all areas, such as purchasing, inventory management, materials planning, invoice verification, and so on.

- The data contained in the material master is required, for example, by the following functions in the SAP Logistics component:

  - Ordering in Purchasing

  - Updating movement of goods and managing the physical inventory in Inventory Management

  - Posting invoices in Invoice Verification

  - Processing sales orders in Sales

  - Planning requirements, scheduling work in Production Planning and Control

- The structural logic that applies to vendors and customers is also valid for material master records.

From Documents to Analysis
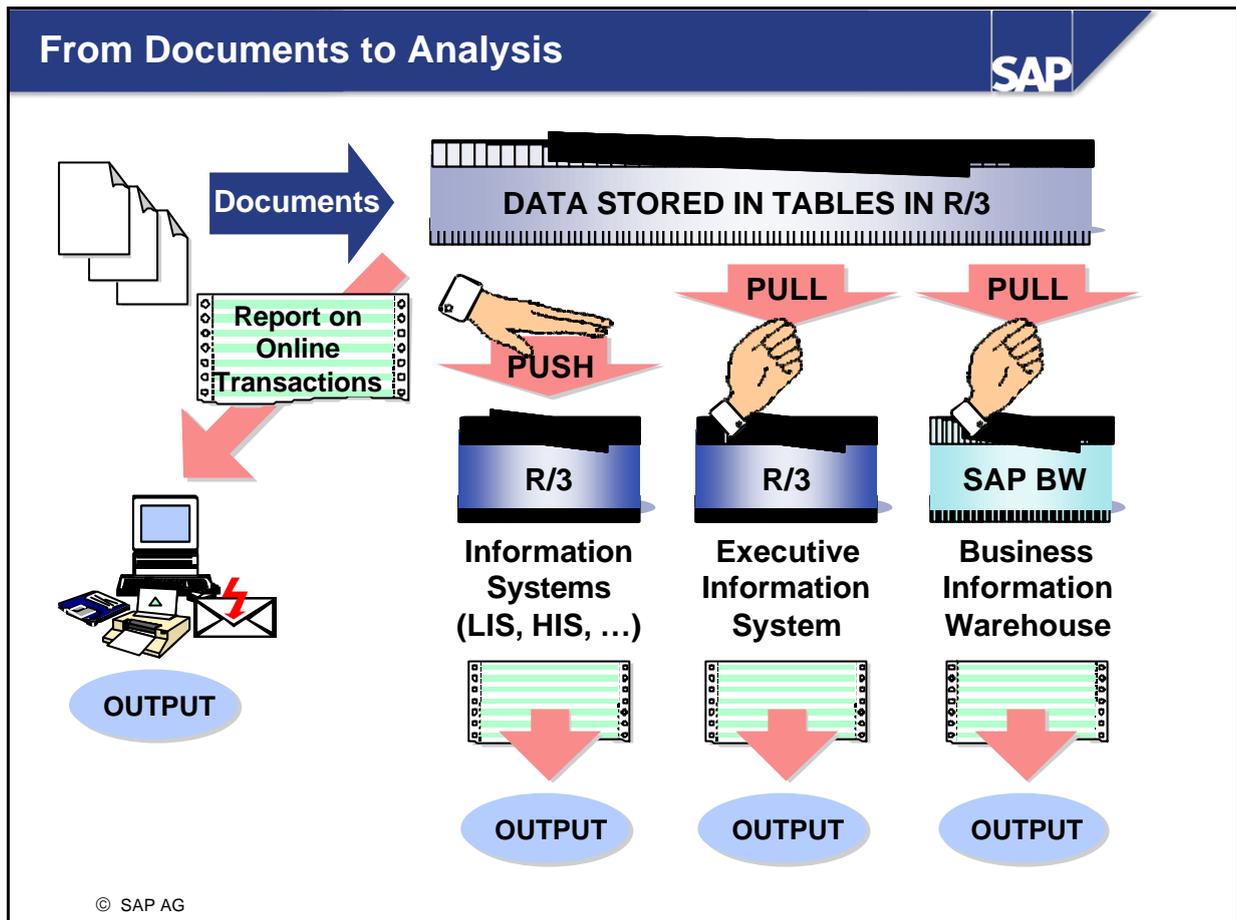
- **Documents** are captured and stored on R/3 with various amounts of information.
  - Examples:
    - Sales Orders,Purchase Orders,Production Order,Material Documents,Accounting Documents
- **Output** is any type of communication of data.
  - Types of output:file, Fax, Email, Printout, Screen
- Reports/Lists are information that is derived from a source and presented to the user in some output type. You can generate reports directly from the online transactions or from the other sources of summarized data such as the Business Information Warehouse, Executive Information System or the various module Information Systems.
- Detail Transaction information is stored on the R/3 system and summarized data is typically stored on the BW, EIS or Information System for detailed summarized analysis using the tools provided by those systems.

Reporting on Online Transactions

Key Figures

Documents

Report Request

No. of Sold-to party: 239			
Sold-to party	**Inc. Orders**	**Orders Quant.**	**Ord. Items**
ABC Company			
Don Ltd.			
Walter AG			
Chris Corp.			
Otto SA.			
Tom Inc.			

| Sold-to party	ABC Company		
Sales Org.	**Inc. Orders**	**Orders Quant.**	**Ord. Items**

Sales Order
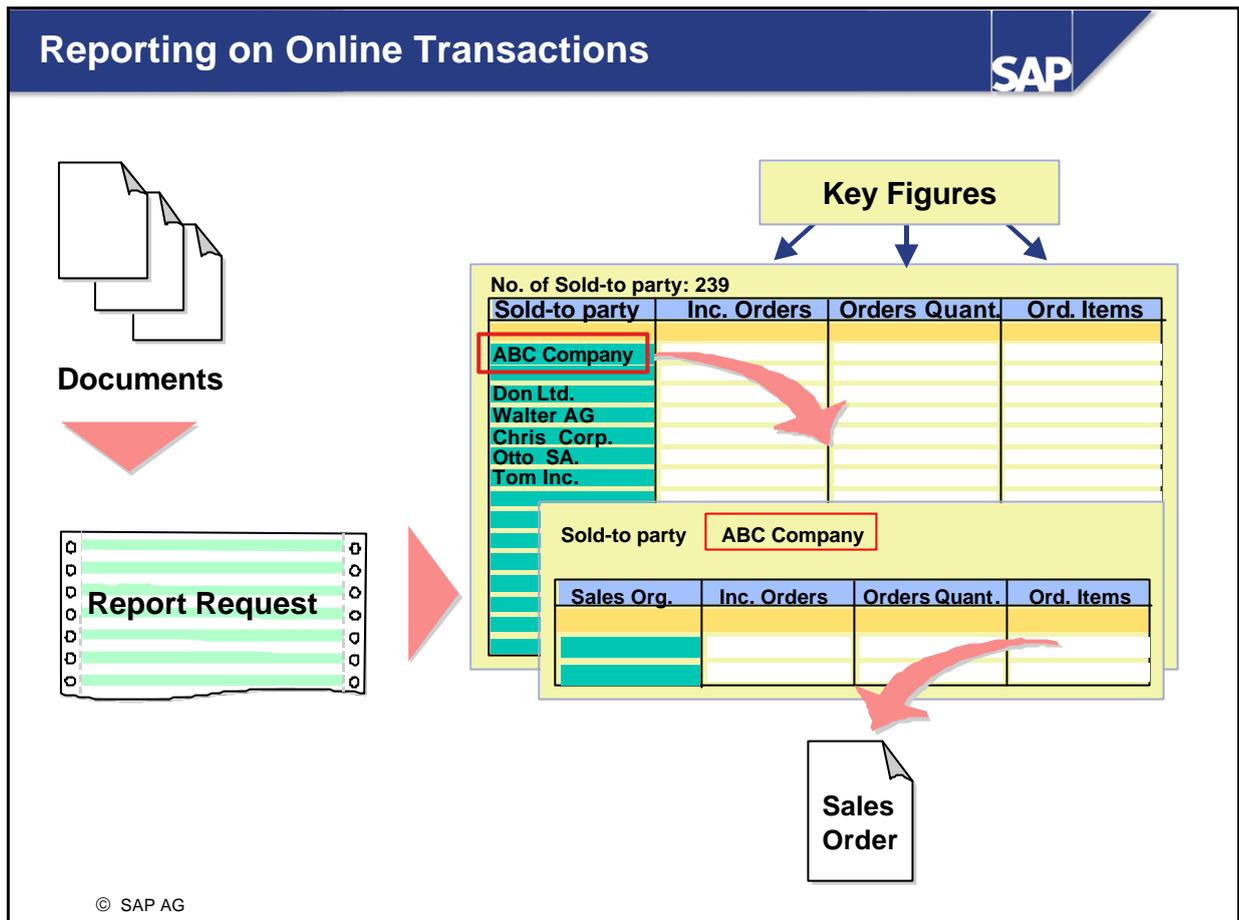
© SAP AG

- Reports can be run at any time in the R/3 System. Current data is processed online at the time the report is run. Reports can be requested in several ways: they can be accessed from the initial R/3 System screen, by choosing Information systems.

- For frequent reporting, it makes sense to store report selection parameters as report "variants". The stored report variants can be integrated in a "job." The job is notified of the time when one or more report variants are to be run.

- In standard reports, key figures corresponding to the characteristics are formatted according to the report request. From this screen, you can access additional evaluation functions or required additional key figures by selecting a field (double-click). The data in the report list can be displayed in a list or represented in a graphic.

Information Systems Structure

SAP

LIS Reports

Data Warehouse

Aggregated Information

Online Transaction Processing (OLTP)

External Data

Logistics Information Systems

Info Structures
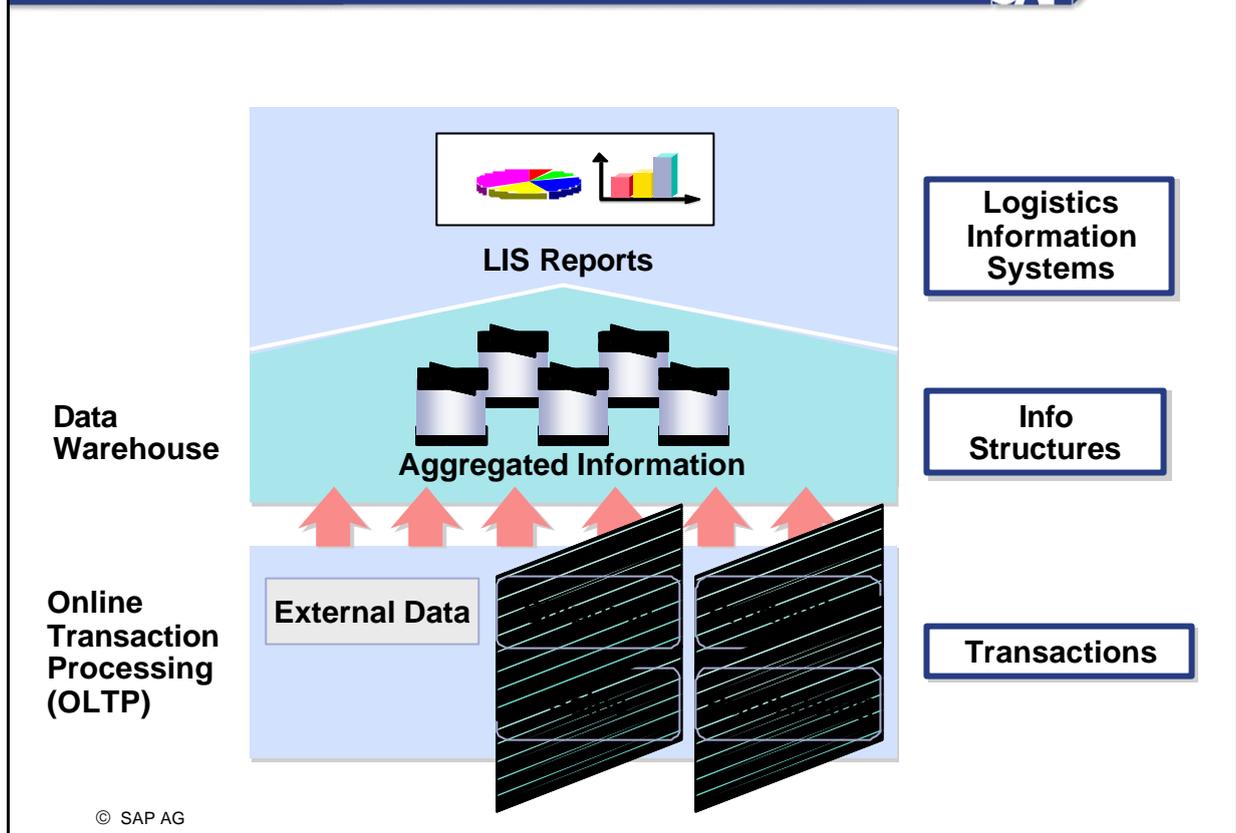
Transactions

© SAP AG

- The graphic uses the LIS example to show how information systems are structured.

- All of the LIS data is stored in information structures.

- Transactions from the R/3 applications that are performed daily are aggregated for LIS for statistical purposes. Data from other systems can also be used in LIS.

- The reports most frequently used can be accessed from the SAP standard menu.

- Distinction is made between different reporting types:

  - Standard reports: List of document, master data, etc. and combinations of these objects (characteristics) to be selected in the report request

  - Reporting via information systems in the applications: Standard analyses from FIS (Financials), LIS (Logistics), HIS (Human Resources)

  - Reporting via information systems with separate databases and tools for generating flexible report structures: EIS (Executive Information System) and the Business Information Warehouse

- The application reporting trees provide various predefined reports. These reports have been defined by SAP according to business requirements.

- The application information systems also enable you to define your own information structures in the SAP R/3 System to meet your enterprise's individual requirements.
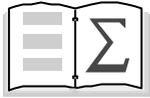
System-wide Concepts: Unit Summary

You are now able to:

- **Explain the concept of a business scenario**

- **List the main elements of business scenarios**

- **Describe the relationship among the main elements of a business scenario**

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Content: Processes in Procurement

Preface

Unit	**Basics of Procurement Process**	Unit	**Procurement of External Services**
Unit	**Master Data**	Unit	**Reporting in MM**
Unit	**Procurement of Stock Material**		
Unit	**Procurement of Consumable Material**		

© SAP AG 1999

At the conclusion of this section, you will be able to:

- **Create, display, and maintain material and vendor masters and list the required organizational levels**

- **Create, display, and maintain purchase requisitions, RFQs, contracts, and purchase orders**

- **Explain the financial and valuation effect of basic procurement transactions**

- **Carry out standard analyses in the system**

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SAP

- **Your company procures a wide variety of products and services and is implementing the R/3 System.**

- **You are a member of the project team responsible for implementing the procurement processes.**

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Basics of Procurement Process

Contents:

- **Organizational Levels**
- **Purchase Order Processing**
- **Goods Receipt**
- **Invoice Verification**

Basics of Procurement Process: Unit Objectives

SAP

At the conclusion of this unit, you will be able to:

- **List the organizational levels in the R/3 System that are relevant to the procurement process**

- **Explain the relationship between these organizational levels**

- **Identify the basic procurement process**

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Basics of Procurement Proc.: Business Scenario

SAP

- **In our enterprise, the responsibilities of the departments in Purchasing, in the warehouse, and Invoice Verification are organized by regional and functional considerations.**

- **The project team is testing how it can map this enterprise structure in the R/3 System, using the relevant organizational levels.**

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Organizational Levels in the Procurement Process

Client
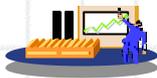
Company Code
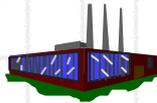
Plant

Storage Location

Purchasing Organization/
Purchasing Group

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- In the SAP R/3 System, organizational levels are structures that represent the legal or organizational views of a company.

- Defining organizational levels is an essential step in your project and is vital for all subsequent activities.

- Analyze the organizational structures and process structures in your company and match them with SAP structures.

- Once you have decided on an organizational structure, it can only be changed with a great deal of effort. In the example above, plant 1000 cannot be assigned to company code 0002.

Client

- **The client is a commercial, organizational unit within the R/3 System, with its own data, master records, and set of tables.**

- **From a business perspective, the client forms a corporate group.**

- **The company code is the smallest organizational unit for which you can have an independent Accounting department within external Accounting.**

- **A company code represents an independent accounting unit, for example, a company within a corporate group (client).**

- Balance sheets and Profit and Loss statements, required by law, are created at company code level.
- You can set up several company codes in one client in order to manage various separate legal entities simultaneously, each with their own balanced set of financial books.
- You can use a special Customizing function to copy a company code. This copies the company code specifications to your new company code.
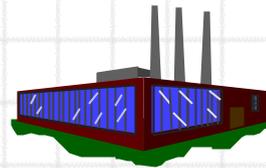
Plant

- **A plant is an organizational logistics unit that structures the enterprise from the perspective of production, procurement, plant maintenance, and materials planning.**

- **A plant is a manufacturing facility or branch within a company.**

- A plant can be one of the following types of locations:
  - Central delivery warehouse
  - Regional sales office
  - Manufacturing facility
  - Corporate headquarters
  - Maintenance plant
- When creating a new plant, you can use the plant copying function. When you use this function, the system processes the entry in the plant table and in all dependent Customizing and system tables in which the plant is included as a key.
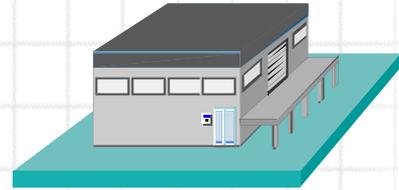
Storage Location

- **The storage location is an organizational unit that allows the differentiation of material stocks within a plant.**
- **Inventory Management on a quantity basis is carried out at storage location level in the plant.**
- **Physical inventory is carried out at storage location level.**

Organizational Levels in Inventory Management
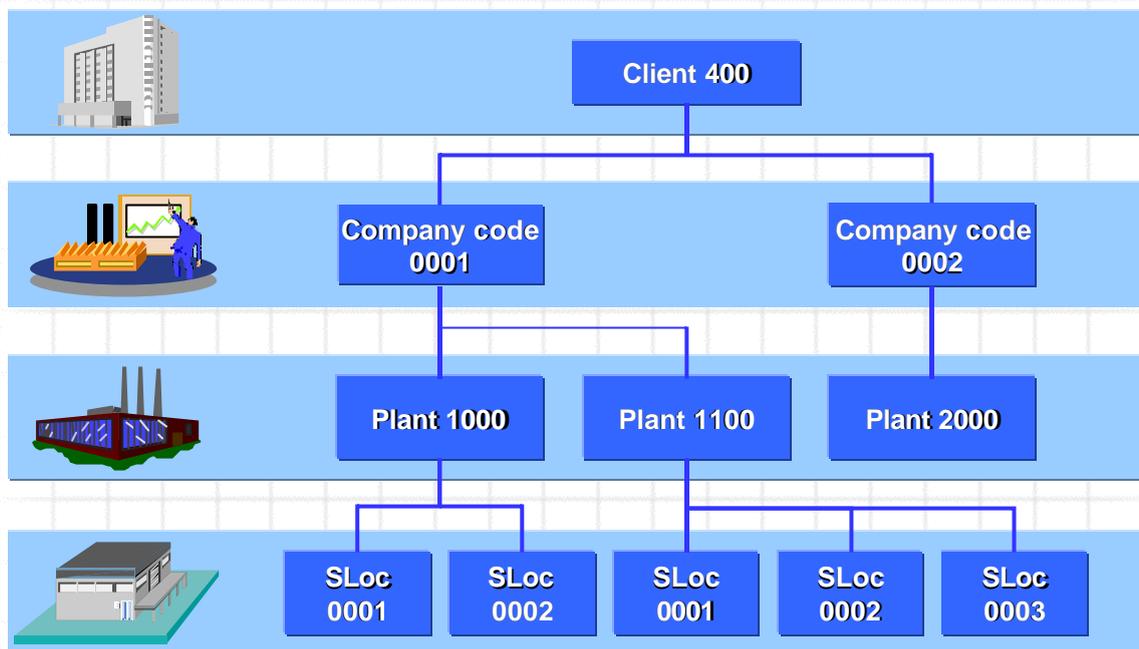
- The client is uniquely defined in the system by a three-digit alphanumeric key.
- A unique four-digit alphanumeric key in the client defines the organizational levels company code and plant. A unique four-digit alphanumeric key in the plant uniquely defines the storage location.
- Organizational structures are assigned to each other. For example, several plants may be assigned to one company code. However, a plant can be assigned to one company code only in the R/3 System.

Valuation Area

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- The valuation area is the organizational level at which material is valuated. Plant and company code are two possible valuation areas in the R/3 System.

- When stock is valuated at plant level, you can valuate a material in different plants at different prices.

- When you valuate stock at company code level, the valuation price of a material is the same in all of a company's plants (that is, in a company code).

- SAP recommends that you valuate material at plant level. Valuation at plant level is mandatory if you want to use either of the Production Planning or Product Cost Accounting components, or if your system is a Retail system.

- **Caution:** Defining the valuation level in Customizing is a fundamental setting, and is very difficult to reverse.

SAP

Purchasing organization

- A *purchasing organization* is an organizational level that negotiates conditions of purchase with vendors for one or more plants. It is legally responsible for completing purchasing contracts.

- A *purchasing group* is the key for a buyer or group of buyers responsible for certain purchasing activities.

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- The purchasing organization is responsible for the company's purchasing requirements.

- You can incorporate purchasing into the company structure by assigning the purchasing organization to company codes and plants. This means that you can determine whether purchasing is organized centrally or decentrally in your company. You can have a combination of centralized and decentralized purchasing organizations.

Plant-Specific Purchasing Organization

Purchasing organization 1

Purchasing organization 2

Company code
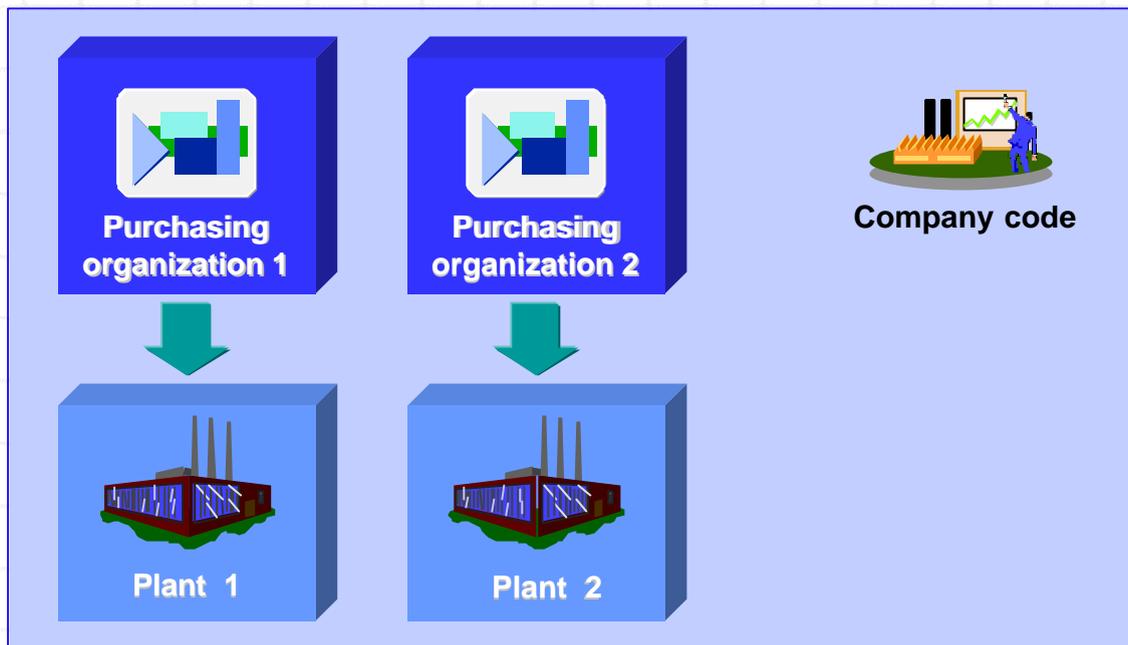
Plant 1

Plant 2

© SAP AG 1999

- In plant-specific procurement, a purchasing organization is responsible for procuring materials for one plant only.

Cross-Plant Purchasing Organization

Purchasing organization

Company code

Plant 1   Plant 2
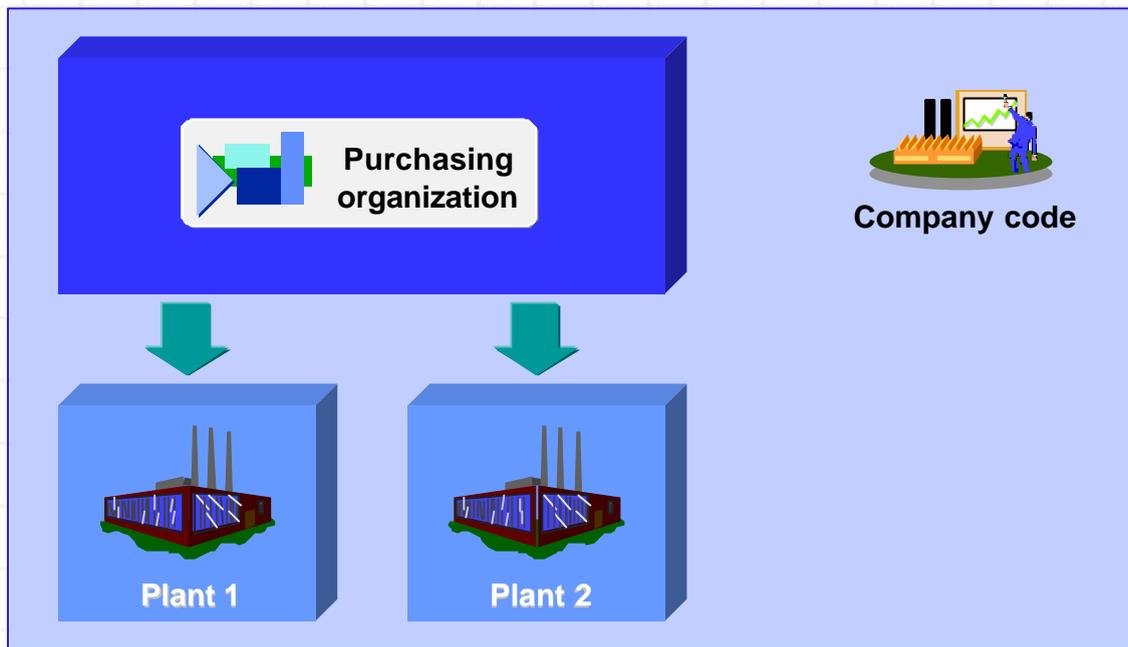
© SAP AG 1999

■ You can set up a cross-plant purchasing organization for each company code. This purchasing organization procures material and services for all plants assigned to the company code.

Cross-Company-Code Purchasing Organization

Purchasing organization

Plant 1

Company code 1

Plant 2

Company code 2

Plant 3
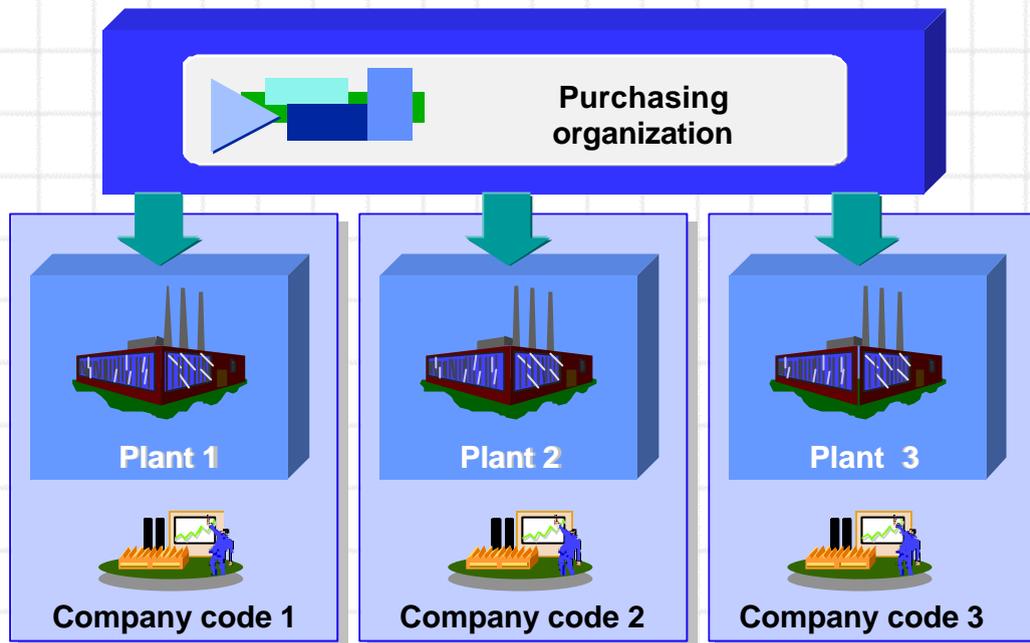
Company code 3

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■ If you want to organize purchasing on a cross-company-code basis, you cannot assign a company code to the purchasing organization in Customizing. When you create a purchase order, for example, the system asks you to enter the company code for which you want to procure the material.

Procurement Cycle

SAP

- 8 Payment processing
- 1 Determination of reqmts
- 2 Source determination
- 7 Invoice verification
- 3 Vendor selection
- 6 Goods receipt
- 5 PO monitoring
- 4 PO processing

Procurement

Purch. req.

Invoice

Purch. ord.
10
20

Purchase order
10
20
30

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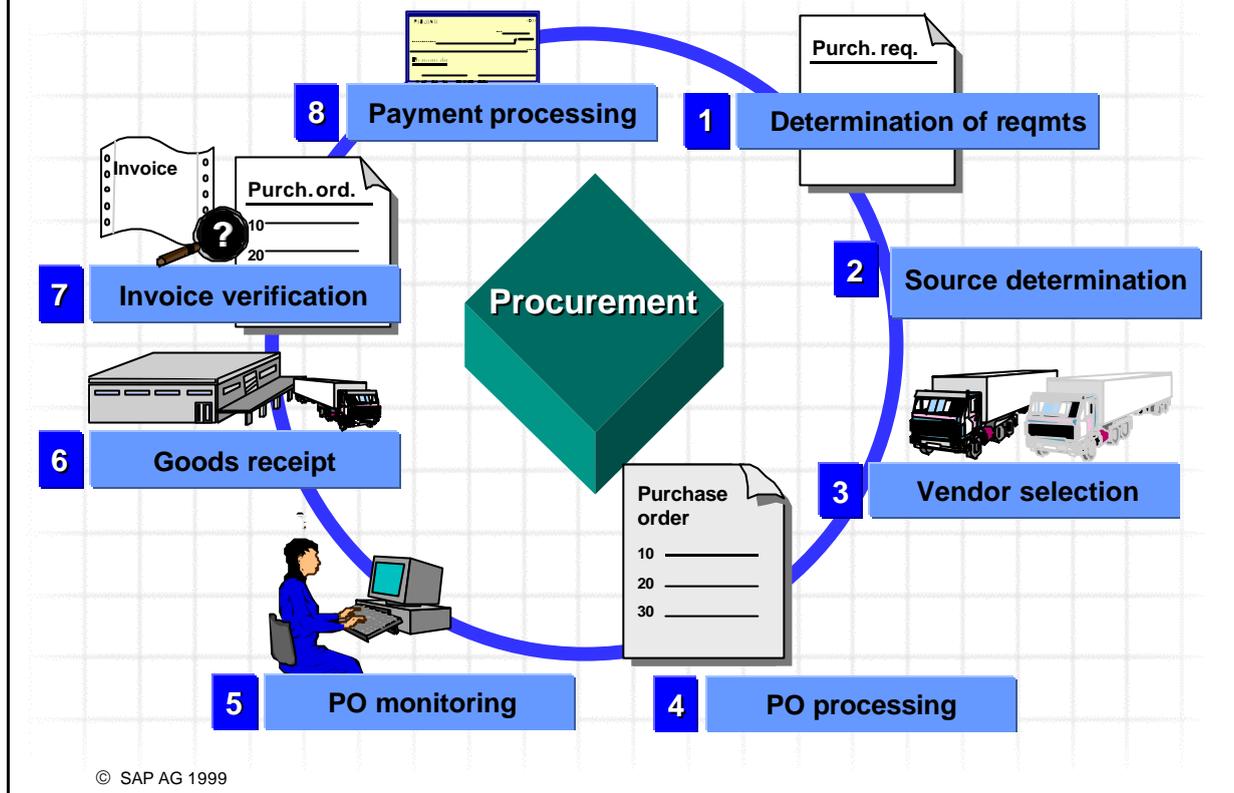
- ■ Determination of requirements: The user department responsible can manually pass a requirement for materials to the Purchasing department via a purchase requisition. If you have set a MRP procedure for a material in the material master, the R/3 System automatically generates a purchase requisition.

- ■ Determination of the source of supply: The R/3 System helps the buyer determine possible sources of supply. You can use determination of the source of supply to create requests for quotation (RFQs) and then enter the quotations. You can also access existing purchase orders and conditions in the system.

- ■ Vendor selection: The system simplifies the selection of vendors by making price comparisons between the various quotations. It automatically sends rejection letters.

- ■ Purchase order processing: The system facilitates data entry by providing entry aids when you are entering purchase orders.

- ■ Purchase order monitoring: The buyer can monitor the processing status of the purchase order online at any time and can determine whether goods or an invoice have been received for the relevant purchase order item. The system also supports reminder procedures.

- ■ Goods receipt: The system compares the goods receipt quantity with the purchase order quantity.

- ■ Invoice verification: Vendor invoices are checked for accuracy of prices and contents.

- ■ Payment processing: Financial Accounting normally deals with vendor payments.

Purchase Requisitions

Purchasing

Manual → **Purchase requisition**

MRP → **Purchase requisition**

Master data ↑ **Purchase requisition**

Purchase requisition → **RFQ**

Purchase requisition → **Outline agreement**

Purchase requisition → **Purchase order**

- Purchase requistions are internal documents you use to request your Purchasing department to procure a particular quantity of a material or a service for a particular date.

- Purchase requisitions are either created manually by the department responsible or automatically by MRP.

- When you create a purchase requisition for materials that have a material master record, the R/3 System supports you when you enter data by transferring data in the material master record into the purchase requisition.

- Purchasing converts the purchase requisition into a request for quotation (RFQ), purchase order, or outline agreement.

Purchasing

Purchase requisition → Source of supply → RFQ → Vendor A / Vendor B / Vendor C → Quotation → Purchase order / Rejection letter

Master data

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- After establishing that a material or service is required, the Purchasing department needs to convert the purchase requisition into a purchase order. The R/3 System can support the Purchasing department using the requests for quotation in the source determination.

- First, you enter a request for quotation for the relevant material or the required service. You can enter the request for quotation manually or with reference to a purchase requisition. The second option has the advantage that the information already in the purchase requisition is copied directly to the request for quotation. Then you allocate the required vendors to the request for quotation. The system determines the address from the data in the respective vendor master record.

- You send the RFQs to the chosen vendors, who then send their quotations or rejection letters. You enter the quotations along with the conditions and delivery dates they contain with reference to the corresponding RFQ.

- You can determine the most favorable items or quotation by means of a quotation comparison.

- You also have the option of saving as purchasing info records the conditions of quotations in which you are interested.

Purchase Order

Purchasing

Purchase requisition

RFQ

Purchase order

Master data

Vendor

Other plant

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- A purchase order is a formal request to a vendor to supply certain goods or services under the stated conditions.

- You can create purchase orders without reference, or with reference to a purchase requisition, a request for quotation, or another purchase order.

- When you enter the purchase order data, the system suggests default values. For example, it suggests the ordering address, as well as the terms of payment and freight (incoterms) from the vendor master record. If you have maintained a material master for a given material in the R/3 System, the system suggests the material short text or the material group, for example. If a purchasing info record already exists in the system, the system copies a price proposal to the purchase order.

- You either send the purchase order to a vendor or you carry out a stock transport order in another plant belonging to your company or group. With a stock transport order, you can take into account the associated freight costs in the purchase order.

- Note: For more information about stock transport orders, refer to the Materials Management documentation on the topic of Inventory Management: Special Stocks and Special Forms of Procurement in Materials Management.

Goods Receipt

SAP

Ext. vendor or other plant

GR area

Purchase order

Material document

Accounting document(s)
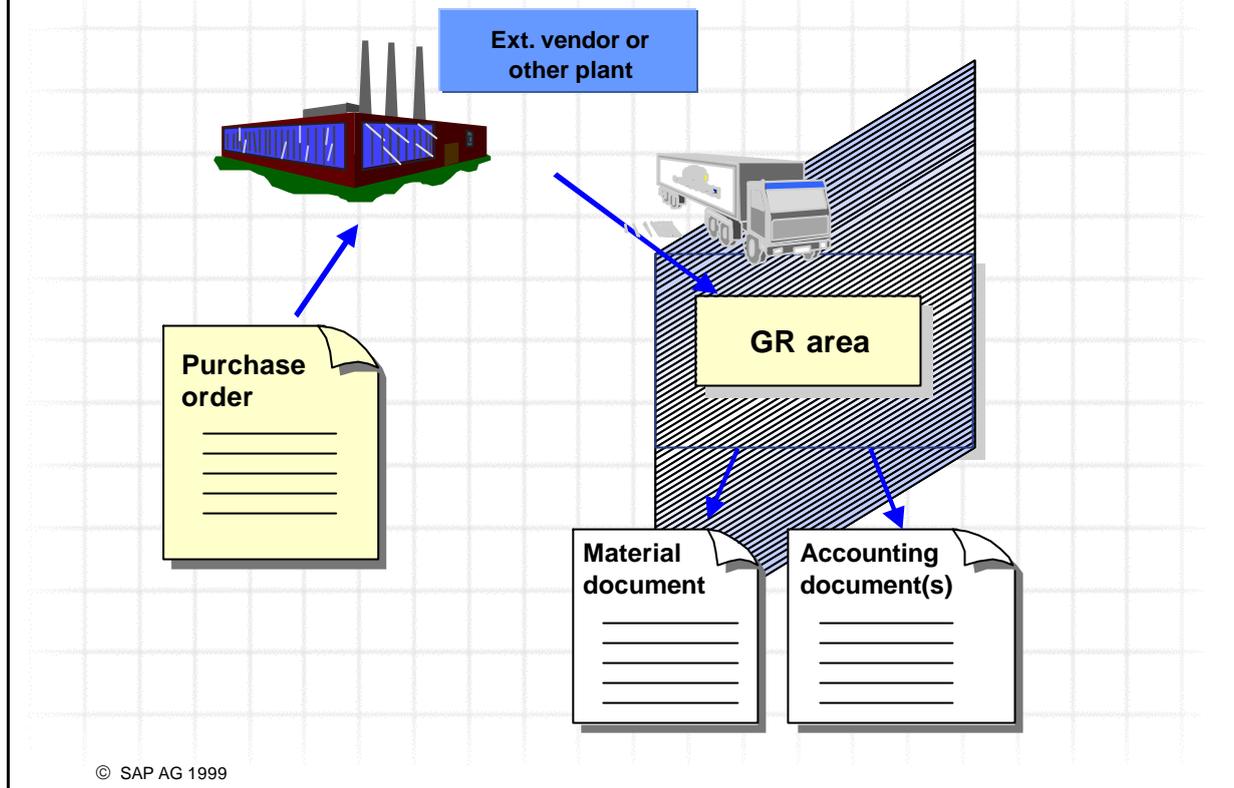
© SAP AG 1999

Posting a goods receipt to stock with reference to a purchase order has a number of advantages for you, including:

- The goods receiving point can check whether the delivery is the same as the purchase order data, that is, whether the goods that were ordered have been delivered.

- The system suggests data from the purchase order when you enter the goods receipt (for example, items and quantities). This makes it easier to enter the goods receipt and check overdeliveries and underdeliveries when goods arrive.

- Among other things, the purchase order history is automatically updated as a result of the deliveries. The Purchasing Department can send a reminder about late deliveries.

- When you post a goods receipt to the warehouse, the system creates a material document containing information such as the material delivered and the quantity delivered. The system also records the storage location in which you place the material into stock in the plant concerned.

- In transactions relevant for material valuation, the system creates at least one accounting document, which records the effects of the goods movement on the value of the stock.

Invoice Processing

Master data

Invoice → Invoice verification → Invoice document → Payment program

Purchase order

Mat. doc. for goods receipt
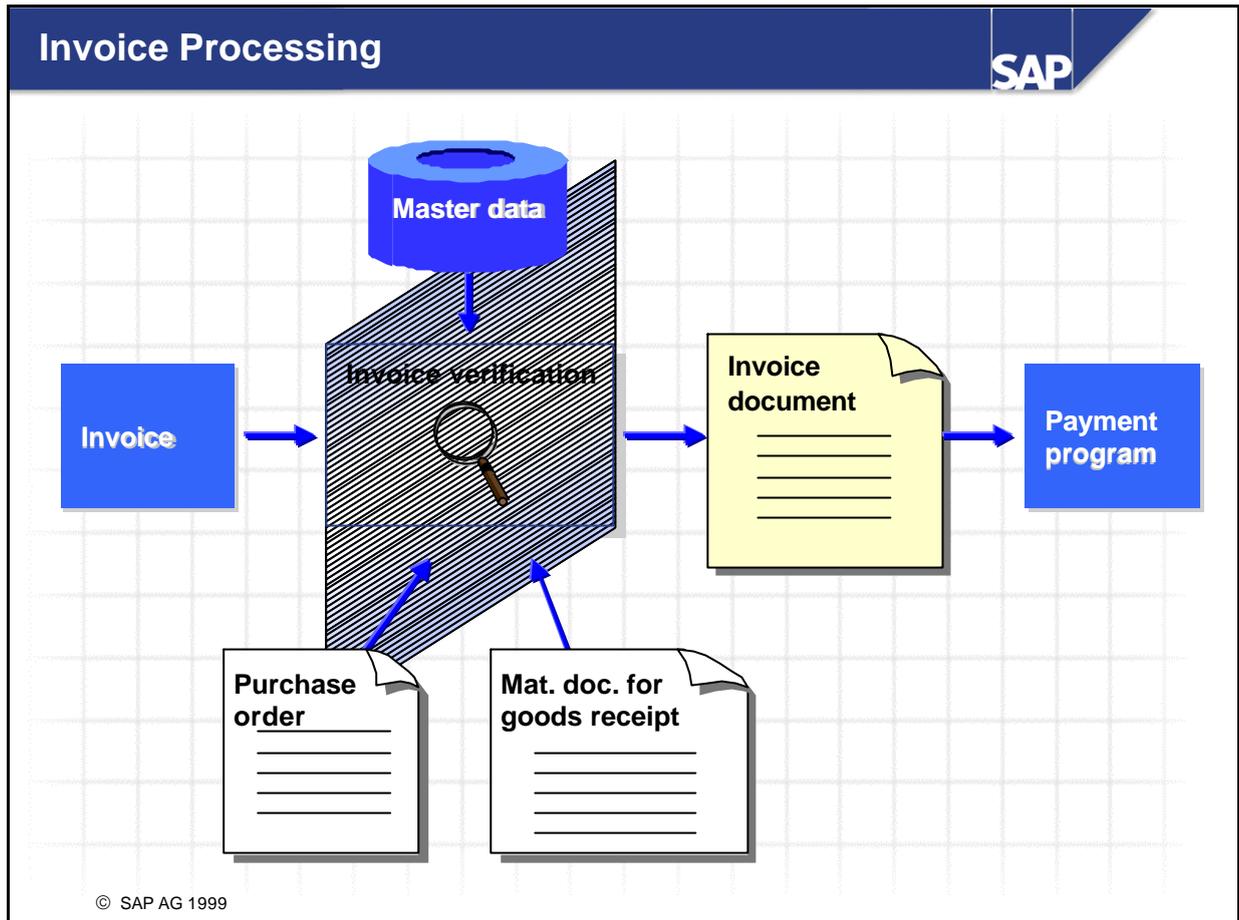
© SAP AG 1999

- In Materials Management, the procurement process is concluded by the invoice verification process, during which invoices and credit memos are entered and the contents and prices are checked for accuracy. However, payment and evaluation of invoices is not part of Invoice Verification; the appropriate information for these tasks is passed on to other departments. Invoice Verification therefore creates a link between Materials Management and external or internal accounting.

- When you enter an invoice with reference to a purchase order, the system suggests data from the purchase order and the goods receipts for the purchase order (for example, vendor, material, quantity still to be invoiced, terms of payment, and so on).

- If there are discrepancies between the purchase order or goods receipt and the invoice, the system warns the user, and depending on how the system is configured, blocks the invoice for payment.

- The posting of the invoice completes the invoice verification process. The system updates the purchase order history and Financial Accounting initiates payment for the open invoice items. Invoice Verification creates a link between Materials Management and external or internal accounting.

Order Processing

8 Payment

Requisition

1 Requirement determination

2 Source determination

Procurement

7 Invoice Verification

Vendor invoice | Purch.order
10
20

3 Vendor selection

6 Goods receipt

Purch.order
10
20
30

5 Purchase order monitoring

4 Order processing

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Purchase Order

Manual

Quotation
_____
_____
_____

Purchase requisition
_____
_____
_____

Reference
_____
_____
_____

Purchase order
10 ....
20 ...10 pcs of SL-01
30 ....
: : :
: : :

PO history for item 20:

Goods receipt:

Jan. 21.98 5 PCs ...
Jan. 23.98 3 PCs ...
Jan. 27.98 2 PCs ...

Invoice receipt:

Jan. 30.98 10 pcs …

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- A purchase order is a formal request to a vendor to supply you with goods or services at the conditions stated in the purchase order. You specify in the purchase order whether the material is delivered for stock or for direct consumption (for example, cost center, asset or project). The goods receipt and invoice verification are usually carried out on the basis of the purchase order.

- You can minimize data-entry time by creating purchase order items with reference to an existing purchase requisition, RFQ or purchase order. You can also enter a purchase order without reference to preceding documents in the system.

- If you want assistance choosing a vendor when you create the purchase order, you can use the source determination function in the R/3 System. The system suggests possible vendors on the basis of the defined sources of supply (outline agreements, info records) and, if required, on the basis of other master data (source list entries, quota arrangements).

- You can determine the current processing status for each purchase order item. For example, you can determine whether goods receipts or invoice receipts have already been posted for an item. You can display the follow-on documents (material document and invoice document) from the purchase order history screen.

Purchase Order Format

Purchase order

10 ....
20 ....
30 ....

Header data

- Document number
- Payment conditions
- Purchase order date
- Vendor
- Currency
- ...

Item: 10
Item: 20
Item: 30

- Material number
- Short text
- Order quantity
- Delivery date
- PO price
- ...

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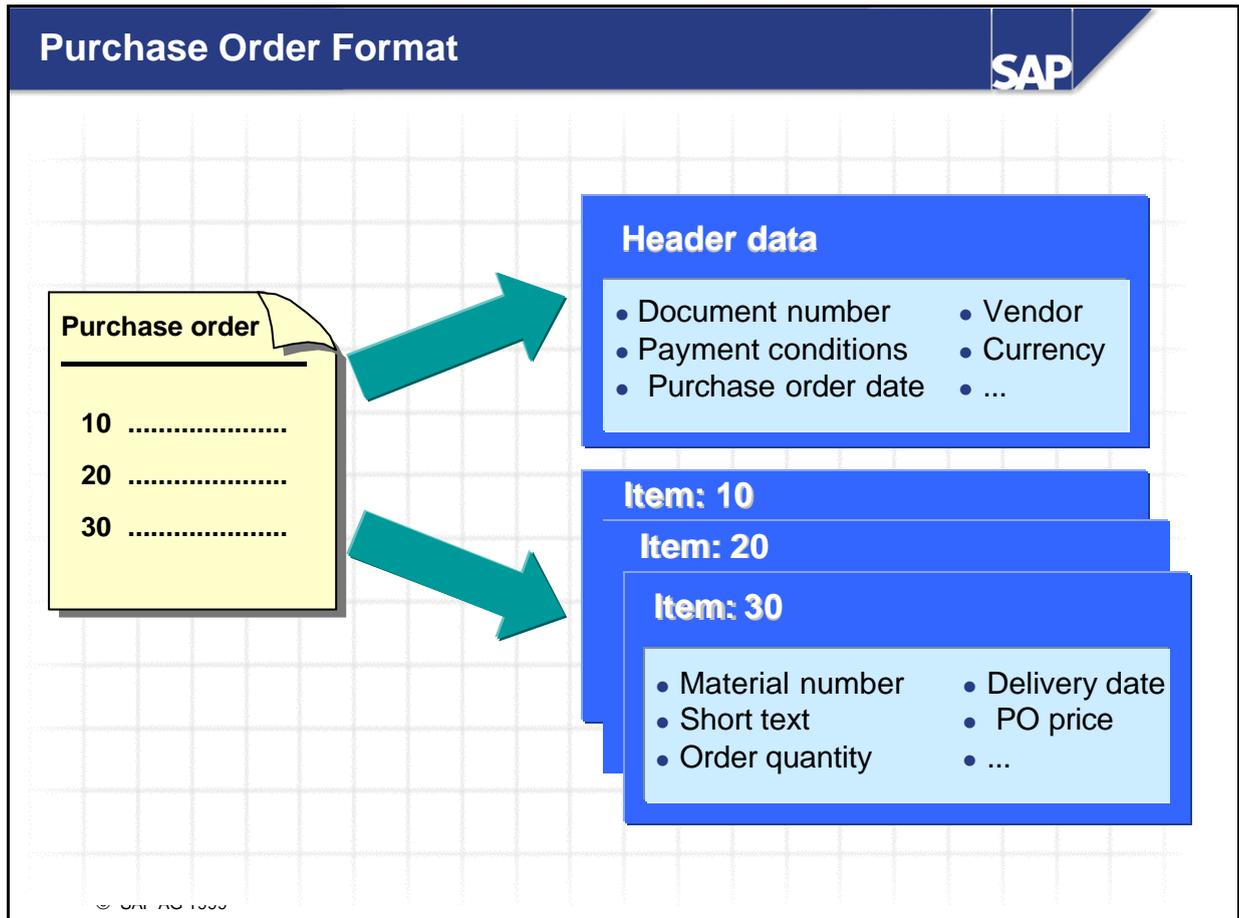
- Like other purchasing documents in the R/3 System, the purchase order consists of a document header and one or more items.

- The document header contains information that refers to the entire purchase order. Examples of this include the document currency, the document date, and the terms of payment.

- The item part of the document contains data describing the materials or services ordered. You can maintain additional information for each item (for example, delivery schedules or item-based text).

- In a purchase order, you can procure materials or services for all plants attached to your purchasing organization.

Table Control
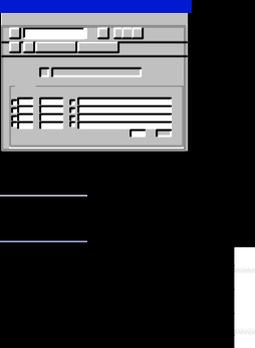
	Item	I	A	Material	Short Text	Qty. reques
	10					
	20					
	30					
	40					

|	Item	Qty. reques	Material	Short Text	I	A
	10					
	20					
	30					
	40					

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For large volumes of data new screens are available in which the data is represented in table format. You have the option of determining the layout and size of the individual fields on a screen yourself.

Horizontal and vertical scrollbars are available for navigation purposes

The following screens are displayed using this technique:

■ Purchasing: - Item overview screens in purchasing documents and requisitions

■   - Schedule line overview scree

■   - Multiple account assignment screens in purchasing documents and requisitions

■   - Overview screen for order acceptance/fullfillment confirmations

■   - Release documentation (scheduling agreement)

■   - Overview screens in source list

■   - Overview screens in quota arrangement

■   - Overview screen for sources of supply

■ Invoice Verification: - One view of the item list.

■ External Services: - Service entry sheet

■   - Service specifications

■ MRP: - Stock requirement list

Configuration by Table Control

- **Change the order of columns**

	Item	Qty. reques	Material	Short Text	I	A
	10					
	20					
	30					
	40					

- **Change the size of a column**

	Item	Qty. reques	Material	Short Text	I	A
	10					
	20					
	30					
	40					

- **Save the configuration**
  - ◆ **for the transaction**
  - ◆ **as standard**

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Item Categories

	Standard
B	Limit
K	Consignment
L	Subcontracting
M	Material unknown
S	Third-party
T	Text
U	Stock transfer
W	Material group
D	Services

Purchase requisition — RFQ — Purchase order — Outline agreement

Dependent on the document type

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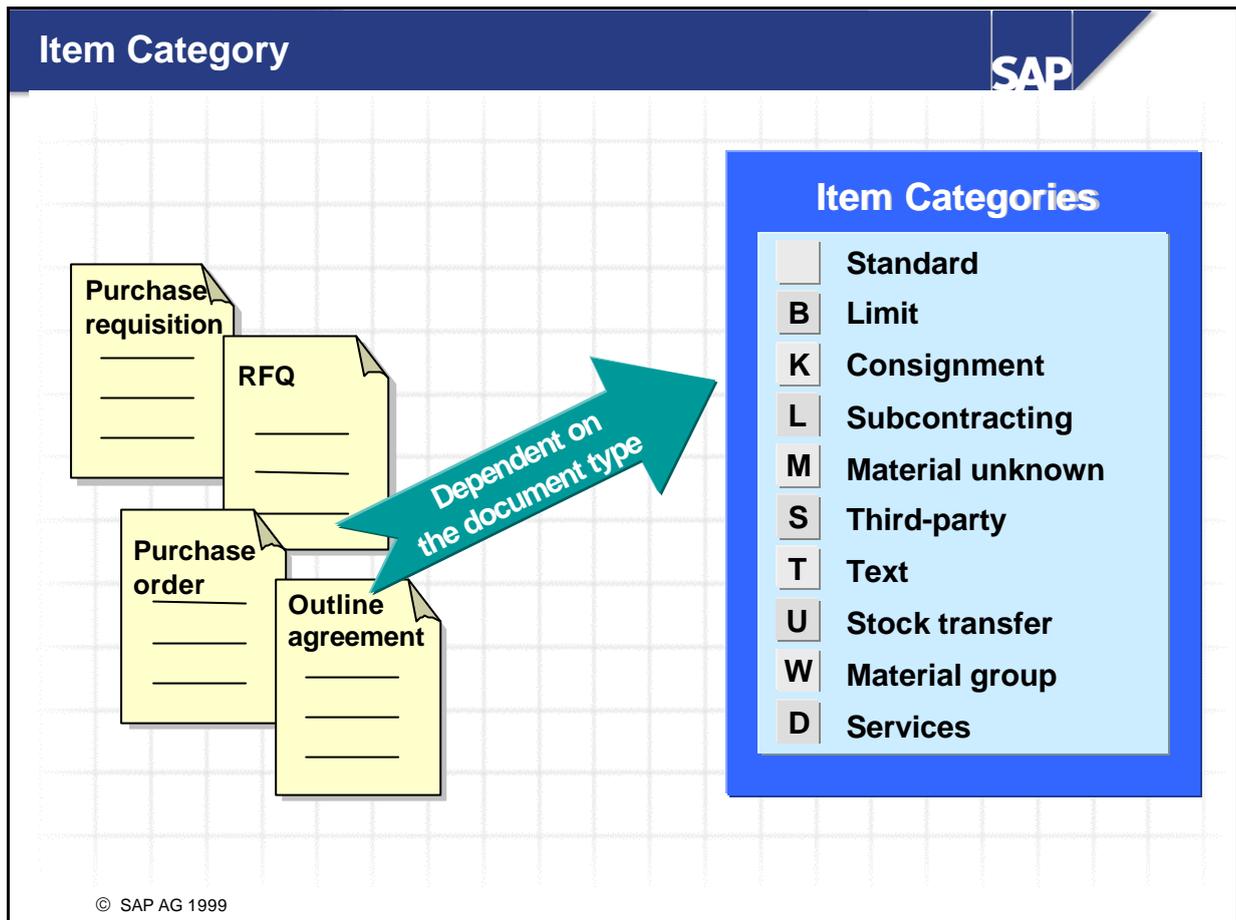
■ The item category defines whether an item requires and/or can have a material number, account assignment, goods receipt, and/or invoice receipt. The item categories displayed depend on the document type. In Customizing, you can define which item categories are allowed for which documents.

The items categories that are defined include the following:

- Standard: Used for materials that are to be procured externally.

- Subcontracting: The finished product is ordered from a vendor. The components that the vendor needs to manufacture the finished product are entered as "material to be provided" items.

- Consignment: The vendor makes material available, which you then manage as consignment stock. A liability only arises when material is withdrawn from consignment stock, not when the stock is placed in the consignment stores.

- Stock transport orders: The material is transferred from one plant to another.

- Third-party order: The ordered material should be delivered directly to a third party (for example, a customer). The vendor sends your company an invoice for the material.

■ **Note:** Subcontracting, consignment, stock transfer orders and third-party orders are covered in the Materials Management documentation on Inventory Management: Special Stocks and Special Forms of Procurement in Materials Management.

Purchasing doc.

Output

| Printer | EDI E-mail | Fax Telex Teletex |

| Printout | Delivery schedule | Expeditor/ Reminder | Rejection letter | Order acknmt expeditor |

© SAP AG 1999
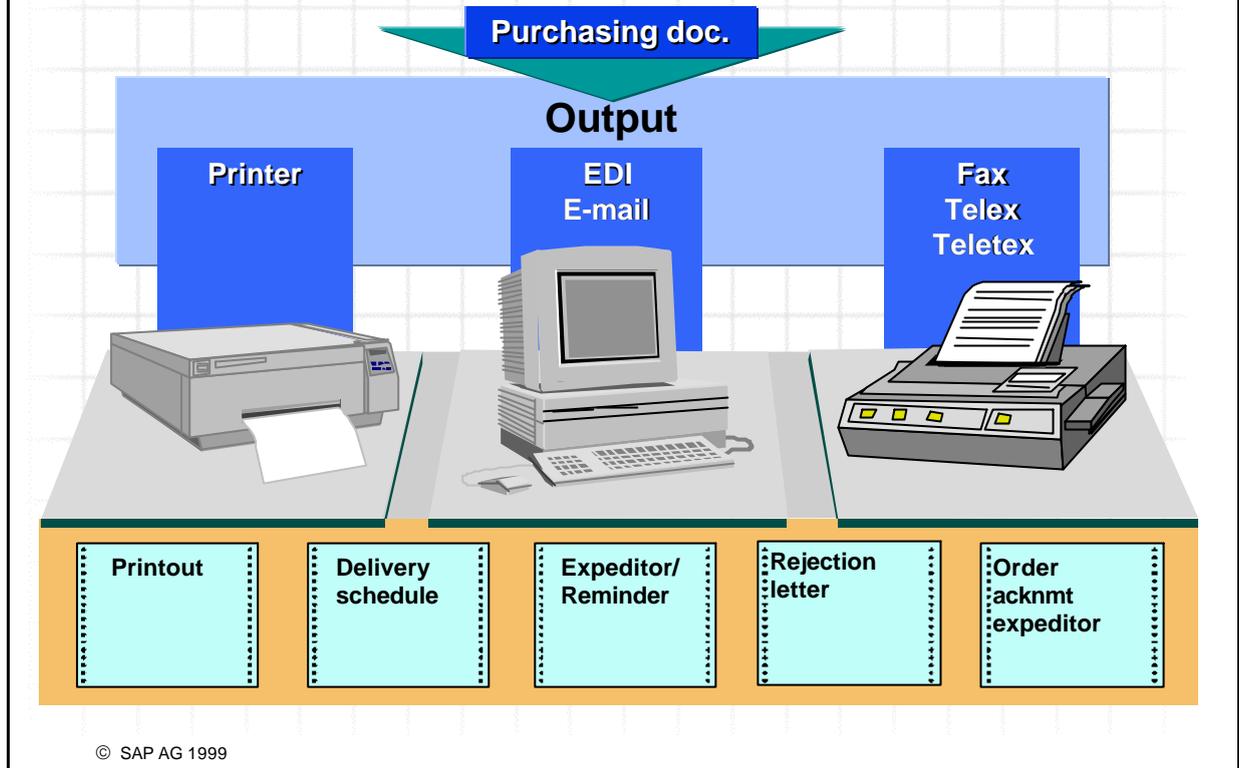
- You can issue purchase orders, changes to purchase orders, and order acknowledgements as messages via printer, fax, EDI or e-mail.

- You can configure which header texts and item-based texts the system issues. The header text is printed at the top of the purchase order and contains general information. Item texts describe a purchase order item in more detail. You can also include and issue standard texts.

- **Note:** You will find more detailed information about outputting purchasing documents in the Materials Management documentation on Purchasing: Entering Texts, Print Functions and Information Transmission.

Hints to the Role-Based User Menus / Favorites

SAP
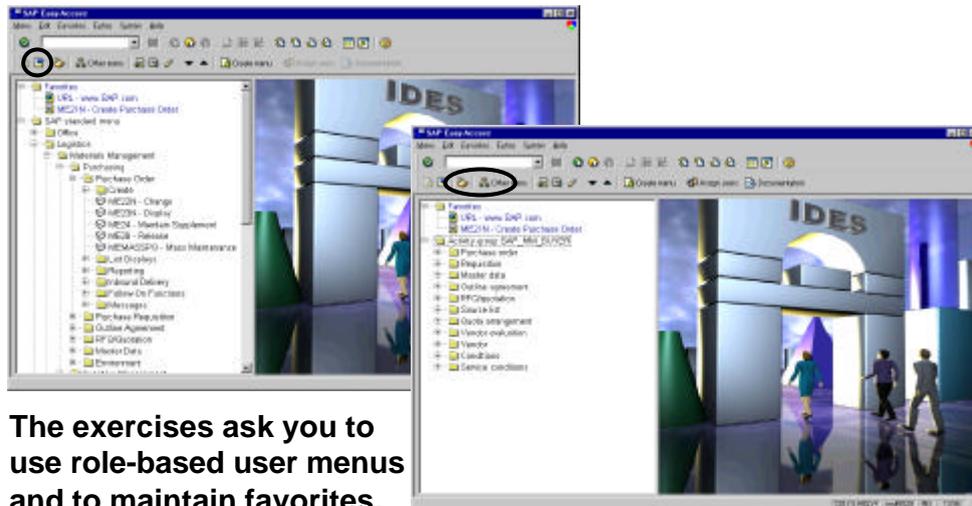
The exercises ask you to use role-based user menus and to maintain favorites.

Opposite to the tasks in the exercises, we suggest to use the standard "SAP Menu". However, you should try some of the role-based user menus.
Also take an appropriate choice for the scope of your favorites.

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- A **role** describes a set of logically linked transactions. These transactions represent the range of functions users typically need at their workstations.

- **Activity** groups (user roles) have to be set up using the Profile Generator so that users of the SAP System can work with user-specific or position-related menus. The authorizations for the activities listed in the menus are also assigned to the users using activity groups. With Release 4.6, predefined activity groups (user roles) from all application areas are included in the standard system.

- Users who have been assigned to an activity group can choose between the user menu and the SAP standard menu.

Exercise Data Sheet

Key to Icons in Exercises and Solutions

	Exercises
	Solutions
	Objectives
	Business Scenario
	Hints & Tips
	Warning or Caution

Data Used in Exercises

| Type of Data	Data in Training System
Material Master Record	T-RM1## Standard Taillight-##
Material Master Record	T-RM2## Sensor-##
Material Master Record	T-HM1## Ballbearing, cylindrical-##
Vendor Master Record	T-K12A## Motolux GmbH Gr.##
Vendor Master Record	T-K12C## C.E.B Berlin Gr.##
Vendor Master Record	T-K12D## Bürohandel Leifritz Gr.##
Vendor Master Record	T-K12E## Elektroblitz GmbH Gr.##
Vendor Master Record	1950 One-Time Vendor
Service Master Record	T-LM1## Dismantling of Fluorescent

|	Lamp Ballast
Service Master Record	T-LM2## Installation of Fluorescent Lamp Ballast
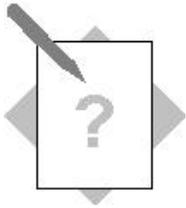
Exercises

Unit: Basics of Procurement Process

Topic: Purchase Order Processing
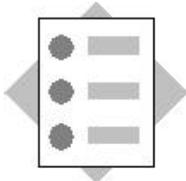
At the conclusion of this exercise, you will be able to:

- Create and process a purchase order
- Display and output the purchase order
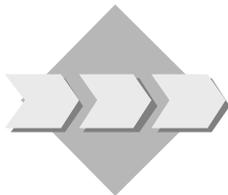
For stock material, the procurement process at your company generally includes creating a purchase order, posting the goods receipt, and processing the vendor invoice. The Purchasing department is responsible for procuring the materials. Familiarize yourself with purchase order processing for stock material.

Use the Purchasing activity group SAP_MM_BUYER for the exercises below. When you use this activity group, the system provides only the menu entries that are relevant to Purchasing.

1-1   Create purchase order

Order 100 pieces of the material **T-RM1## standard taillight-##** for immediate delivery from the vendor **T-K12A##, Motolux GmbH Gr.##**. Use the following information:

Vendor: **T-K12A##**

Organizational data:

Purchasing organization   **IDES** (1000)

Purchasing group   **LO020-##** (T##)

Company code   **IDES** (1000)

Item data:

Delivery date   **Current date**

Plant   **1000** (Hamburg)

 Storage location   **0001** (Material store)

Confirm all warning messages that the system issues regarding the delivery date and accept the purchase order price that it proposes. Save your purchase order and make a note of the purchase order number. PO number:

1-2 Display purchase order

Display your purchase order again and check that you have entered the data correctly.
Use the document overview for your own personal purchase orders.

1-3 Issue message

Display your purchase order in the print preview.
When you are sure you have chosen the correct purchase order and have checked that the data is correct, you can print the purchasing document. The system automatically uses the output device you set in Customizing for Message Determination (for example, printer or fax).

## 1-4 Maintain list of favorites

Since you work with purchase orders frequently, it is a good idea to include the most important transactions in a list of favorites

You can use the options below:

- "Drag and drop":
  Use the mouse to drag the transaction you require into the list of favorites.

- The right mouse button:
  Click the required transaction with the right mouse button and choose *Add to favorites*.

- The button in the toolbar:
  The system accepts the current entry when you choose the button in the toolbar.

- The transaction code:
  Make sure that you are on the initial screen. From the top toolbar, choose *Extras ® Settings* and select *Show technical name*.
  Select the transaction and make a note of the transaction code. To include the transaction in your list of favorites, click the favorites folder with the right mouse button.

Note that the format of the list of favorites varies depending on the procedure you use.

If you would prefer to use a different description for your favorites, you can use the right mouse button and (Change favorites) to assign individual descriptions.

Goods Receipt

SAP

8 Payment

Requisition

1 Requirement determination

2 Source determination

7 Invoice Verification

Vendor invoice | Purch.order
10
20

Procurement

3 Vendor selection

6 Goods receipt

Purch.order
10
20
30

5 Purchase order monitoring

4 Order processing

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Goods Receipt for Stock Material

Purchase order

Item:
1 _____
2 _____
3 _____

Vendor

Goods receipt

Warehouse

Printout (optional)

GR slip
1 _____
2 _____
3 _____

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- If you entered a purchase order to procure a material, you have to reference the purchase order when you enter the goods receipt. The system can check, for example, whether the material delivered is the same as the material ordered, whether the order quantity matches the goods receipt quantity or whether the shelf life is still guaranteed for highly perishable goods (when the shelf life expiration date check is active for the relevant material).

- The purchase order history for a purchasing document item is also updated when a goods receipt is posted with reference to a purchase order. This allows the buyer to send the vendor a reminder about outstanding deliveries, for example.

- Several goods receipt items can be entered for a purchase order item in one operation. This is advisable if, for example, the material is delivered in batches or is distributed among several storage locations. You enter the goods receipt data in a single material document.

- If the delivery note accompanying the goods receipt does not contain a purchase order number, you can use the material number or the vendor number to search for the corresponding purchase order number.

- You can print a goods receipt slip when entering the goods receipt.

Movement Type: Examples

101

Goods receipt to the warehouse

122

Return delivery to the vendor
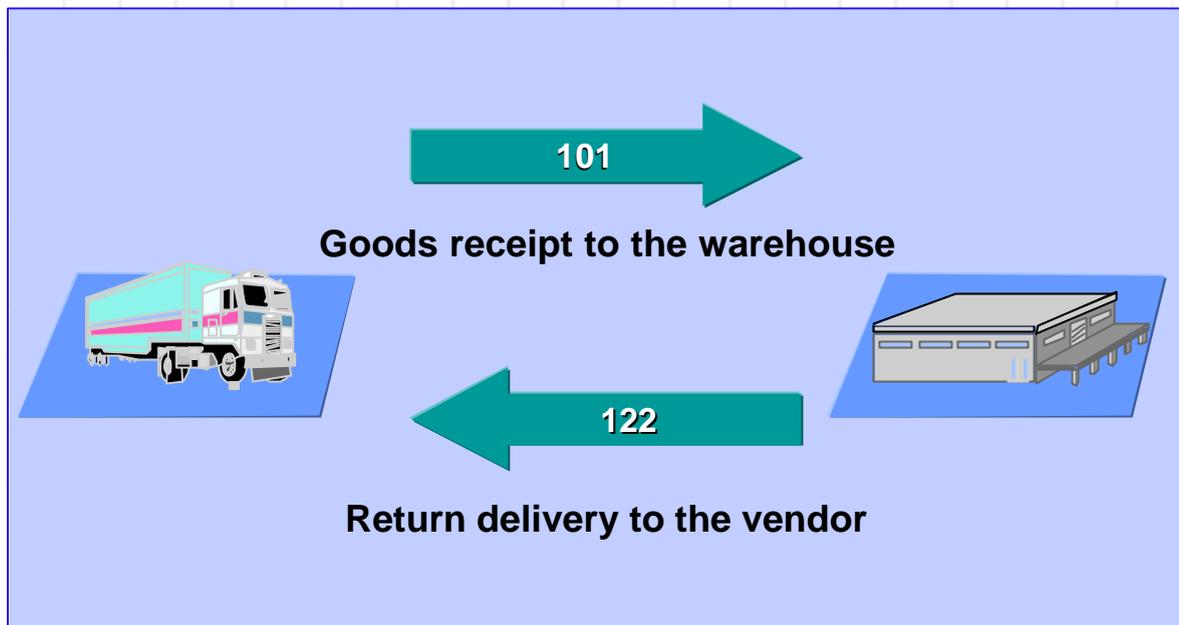
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- The movement type is a three-digit key used to differentiate between goods movements in the R/3 System. Examples of these goods movements are goods receipts, goods issues or transfer postings.

- The movement type has important control functions in Inventory Management. It plays a central role in automatic account determination in the R/3 System. Together with other influencing factors, the movement type determines which stock or consumption accounts are updated in Financial Accounting. The movement type also determines the format of the screen when you enter documents and how the quantity fields are updated.
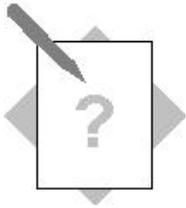
Exercises

Unit: Basics of Procurement Process

Topic: Goods Receipt
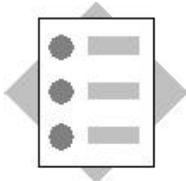
At the conclusion of this exercise, you will be able to:

- Enter goods receipts for existing purchase orders

- Check that the purchase order was updated as a result of the goods receipt
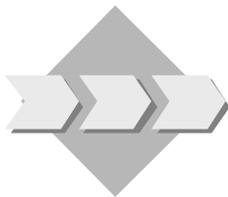
As an employee in the warehouse, you are responsible for entering goods receipts in the R/3 System. You enter the goods receipt with reference to its purchase order so that you can check whether the delivery matches the purchase order. When you enter the goods receipt, the system updates the purchase order history, thus allowing the buyer to get information on the status of the delivery directly from the purchase order document.

Use the warehouse activity group SAP_MM_GR_CLERK for the exercises below. When you use this activity group, the system provides Inventory Management menu entries only.

2-1   Post goods receipt

The standard taillights you ordered are delivered complete and undamaged. Post the goods receipt with reference to your purchase order into unrestricted-use stock in storage location **0001** (material store), plant **1000** (Hamburg).

Pay attention to the details in the delivery note on the next page (for example, the delivery note number). Post the goods receipt and make a note of the material document number.

```
┌─────────────────────────────────────────────────────────────────┐
│                              Motolux GmbH Gr.##                    │
│                              Sonnenweg 3                           │
│                                                                    │
│                              68145 Mannheim                        │
│                                                                    │
│                                                                    │
│                              Delivery note number:    LS-A1##      │
│                                                                    │
│                                                                    │
│  IDES                                                              │
│  Werk Hamburg                                                      │
│  Altersdorferstr. 13                                              │
│                                                                    │
│  22299 Hamburg                       Mannheim, [current date]      │
│                                                                    │
│                                                                    │
│  With reference to purchase order no. 450000xxxx we deliver the    │
│  following materials:                                              │
│                                                                    │
├─────────────────────────────────────────────────────────────────┤
│  Item    Qty    UoM    Matl no.        Description                 │
│                                                                    │
│  10      100    pc     T-RM1##         Standard taillight-##       │
│                                                                    │
│                                                                    │
│                                                                    │
│  Best regards                                                      │
│  Motolux GmbH Gr.##                                               │
└─────────────────────────────────────────────────────────────────┘
```

Material document number: _____

2-2 Display material document

Display the material document that was created as a result of the goods receipt.

2-3 Display purchase order

Display the purchase order from exercise 1-1 again and check that the system updated the purchase order history as a result of the goods receipt. Compare the material document number from the purchase order history with the material document number from exercise 2-1.

_____

2-4 Add to list of favorites

Add the goods receipt transaction to your list of favorites.

Invoice Verification

8 Payment

Requisition

1 Requirement determination

Vendor invoice **Purch.order** 10 20

7 Invoice Verification

2 Source determination

Procurement

6 Goods receipt

3 Vendor selection

Purch.order 10 20 30

5 Purchase order monitoring

4 Order processing

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| Theil & Söhne
Martinsplatz 39
60049 Frankfurt | **Vendor** |

IDES AG
Überseering 110
22045 Hamburg — April 7, 1999 — **Document date**

Purchase order → With reference to your purchase order 45000895 from March 3, 1999, we delivered the following goods:

Invoice items → 10VGE-roh 1 — 1,000 pcs — UNI 2,500
VGE-hal 1 — 300 kg — UNI 1,500 — **Amount per item**

Material

UNI 4,000

Quantity — plus 10% tax — UNI 400 — **Tax amount**

Unit of measure — UNI 4,400 — **Invoice amount**

— **Tax rate**

Payment conditions → Payable within 20 days of invoice date.
2% cash discount for payment within 10 days.
Acct no. 11223344, MBS Bank (code 300 210 55). ← **Bank information**

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- In Invoice Verification, you enter all the relevant data for the vendor invoice (for example gross amount, tax, invoice date, and so on). The system checks this data in subsequent processing steps and compares it with data that already exists in the system, such as the purchase order document and the goods receipt document.

- The invoice document can be optically archived and sent via workflow to the department responsible for invoice verification. This is an important step towards the realization of the paperless office.
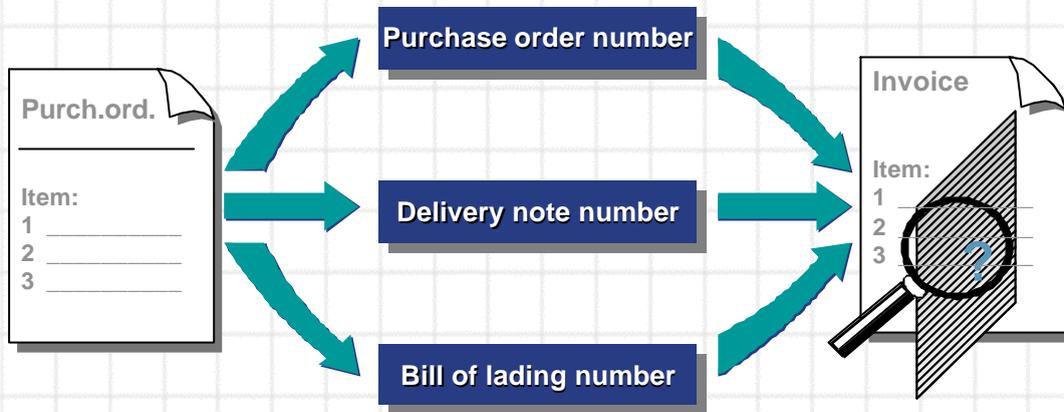
© SAP AG 1999

- In Logistics Invoice Verification, you post invoices with reference to the purchase order. The advantage of this procedure is that the system suggests the order prices from the order document and the goods receipt quantities from the GR documents for the purchase order.

- You can also assign the invoice items to a purchase order using the number of the delivery note or bill of lading, provided that these numbers were entered at goods receipt.

- Invoices that do not reference a purchase order can only be entered with conventional Invoice Verification.

Reference to Purchase Order

Purch. ord.

100 pcs

GR-IV

Purchase order no. 4500012345

Goods receipt — GR 1 50

Goods receipt — GR 2 40

Goods receipt — GR 3 10

Incoming invoice

Access via purchase order

Selection screen

Purch. ord.

X 4500012345 100

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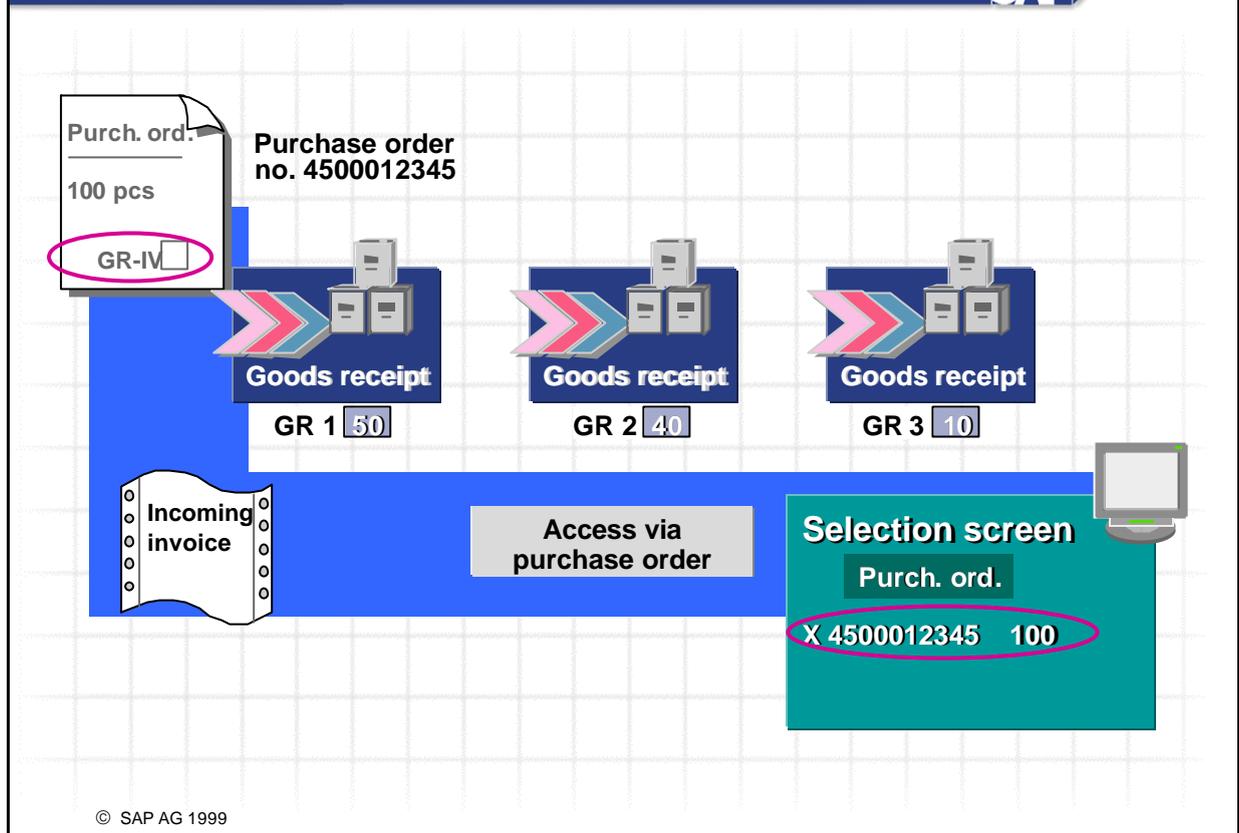
- If the indicator for goods-receipt-based Invoice Verification was not set in the purchase order, the vendor invoice can be entered before or after the goods are received.

- If the invoice is entered with reference to a purchase order, only the amount that has already been delivered but not yet invoiced appears on the selection screen as the default value if you are working with standard settings. You can overwrite the default value and consequently settle the entire purchase order quantity when partial deliveries have been received. The system automatically blocks the invoice for payment if tolerances defined in the system are exceeded (for example, if the invoice price varies greatly from the purchase order price).

- With goods-receipt-based Invoice Verification, invoice entry is based on the goods receipts. If you have entered several partial deliveries for an order item, the system displays them as separate invoice items. Invoices for quantities greater than the goods receipt quantity cannot be posted. You must set this type of Invoice Verification in the purchase order.
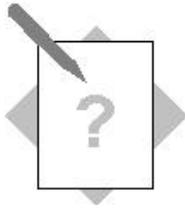
Exercises

Unit: Basics of Procurement Process

Topic: Invoice Verification
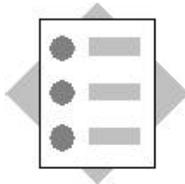
At the conclusion of this exercise, you will be able to:

- Use Logistics Invoice Verification to enter an invoice and check that it is correct

- Explain the effects of invoice verification on the purchase order data
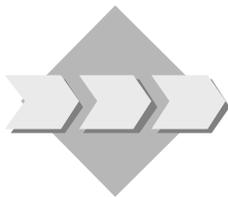
In Invoice Verification, you enter the invoice you have received from the vendor. You compare the invoice price with the purchase order price and the invoiced quantity with the quantity that has been delivered.

Use the Invoice Verification activity group SAP_MM_IV_CLERK MM for the exercises below. The system provides the menu relevant to Invoice Verification.

3-1 Enter vendor invoice

The vendor **T-K12A##** (use 1000 if T-K12A## does not exist) invoices you for the delivery of the **standard taillights-## T-RM1##**. Use Logistics Invoice Verification to enter the invoice for the current date.

Use the data from the vendor invoice on the following page. Compare the invoice price and invoice quantity with the data the system proposes from the purchase order and the goods receipt. Post the invoice.

```
+----------------------------------------------------------------------+
|                                                                      |
|                            Motolux GmbH Gr.##                        |
|                            Sonnenweg 3                               |
|                                                                      |
|                            68145 Mannheim                            |
|                                                                      |
|                                                                      |
|                            Invoice number:  RE-A1##                  |
|                                                                      |
|                                                                      |
| IDES                                                                 |
| Werk Hamburg                                                         |
| Altersdorferstr. 13                                                  |
|                                                                      |
|                            Mannheim, [current date]                  |
| 22299 Hamburg                                                        |
|                                                                      |
|                                                                      |
| With reference to purchase order no. 450000xxxx, we are invoicing    |
| you for the following items:                                         |
|                                                                      |
+----------------------------------------------------------------------+
| Item   Qty      Matl no.    Description      Unit price  Total price  |
|                                                                      |
| 10    100 pc   T-RM1##     Standard taillight##  50 UNI   5000 UNI   |
+----------------------------------------------------------------------+
|       Total net value:   5000 UNI                                    |
|       plus 10 % tax      500 UNI                                      |
|       Invoice amount   5500 UNI                                       |
|                                                                      |
|                                                                      |
| The arranged payment conditions apply                                |
|                                                                      |
|                                                                      |
| Best regards                                                         |
| Motolux GmbH Gr.##                                                   |
+----------------------------------------------------------------------+
```

Invoice document number: _____

3-2 Display invoice document

Display the material document that was created as a result of the goods receipt. From the invoice document, go to the purchase order history and make sure it has been updated correctly.

3-3 Add to list of favorites

Add to your list of favorites the Logistics Invoice Verification transactions for entering and displaying invoices.
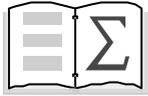
You are now able to:

- **List the organizational levels in the R/3 System that are relevant to the procurement process**

- **Explain the relationship between these organizational levels**

- **Identify the basic procurement process**

Solutions

Unit: Basics of Procurement Process

Topic: Purchase Order Processing

1-1 Create purchase order

(Logistics ® Materials Management ® Purchasing)
Purchase order ® Create ® Vendor/supplying plant known

PO type	*Standard PO*
Vendor	*T-K12A##*

Header/Org. data	
Purchasing organization	*IDES (1000)*
Purchasing group	*LO020-## (T##)*
Company code	*IDES (1000)*

Item data: Item 10	
Material	*T-RM1##*
Order quantity	*100 pcs*
Net price	*(Proposed by the system)*
Plant	*1000*
Storage location	*0001*

Confirm all warning messages that the system issues regarding the delivery date and accept the purchase order price that it proposes.

1-2 Display purchase order

(Logistics ® Materials Management ® Purchasing)
Purchase order ® Display

Use the document overview and search for your own personal purchase orders.

Choose the document overview. Double-click to display your document.

1-3 Issue message

(Logistics ® Materials Management ® Purchasing)
Purchase order ® Messages ® Print/transmit

In the overview, select your document and choose **[Display message]**. Green arrow back and select **[Output message]**.

1-4 Maintain list of favorites

Use one of the following options:

- "Drag and drop":
  Use the mouse to drag the transaction you require into the list of favorites.

- The right mouse button:
  Click the required transaction with the right mouse button and choose **Add to favorites**.

- The button on the toolbar:
  The system accepts the current entry when you choose **[Add to favorites]** from the toolbar.

- The transaction code:
  Make sure that you are on the initial screen. From the upper toolbar, choose *® Extras ® Settings* and select Show technical name.
  Select the transaction and make a note of the transaction code. To include the transaction in your list of favorites, click the favorites folder with the right mouse button.

Note that the format of the list of favorites varies depending on the procedure you use.

If you would prefer to use a different description for your favorites, you can use the right mouse button and (Change favorites) to assign individual descriptions.

Solutions

Unit: Basics of Procurement Process

Topic: Goods Receipt

2-1 **Post goods receipt**

(Logistics ® Materials Management ® Inventory Management)
® Goods Movement ® Goods Receipt ® For Purchase Order
® PO Number Known

Choose your PO number via F4 help or the document preview, or enter it manually.

2-2 **Display material document**

Choose your material document from the document overview and switch from the goods receipt entry screen to the display mode.

2-3 **Display purchase order**

To go to the purchase order for a given item, select the line item and *Environment ® PO*.

2-4 **Add to list of favorites**

Use one of the following options:

- "Drag and drop":
  Use the mouse to drag the transaction you require into the list of favorites.

- The right mouse button:
  Click the required transaction with the right mouse button and choose Add to favorites.

- The button in the toolbar:
  The system accepts the current entry when you choose the button in the toolbar.

- The transaction code:
  Make sure that you are on the initial screen. From the top toolbar, choose Extras → Settings and select Show technical name.
  Select the transaction and make a note of the transaction code. To include the transaction in your list of favorites, click the favorites folder with the right mouse button.

Solutions

Unit: Basics of Procurement Process

Topic: Invoice Verification

3-1 **Enter vendor invoice**

Logistics ® Materials Management ® Invoice Verification ® Logistics Invoice Verification
® Document entry ® Enter invoice

Document date	*Current date*
Reference	*RE-A1##*
Amount	*5500*
Tax amount	*500*

Choose your purchase order document for vendor **T-K12A##** via F4 help, or enter the purchase order number. After you select the purchase order, select *enter* to see the line items.

Simulate and post the invoice.

3-2 **Display invoice document**

On the Invoice Verification screen, choose *® Invoice document ® Display.*

Choose [*PO history*] to go directly to the purchase order history.

3-3 **Add to list of favorites**

Use one of the following options:

- "Drag and drop":
- The right mouse button:
- The button in the toolbar:
- The transaction code:

Master Data

SAP

Contents:

- **Vendor Master Record**
- **Material Master Record**

At the conclusion of this unit, you will be able to:

- **Create and maintain material and vendor master records**

- **Explain the impact of organizational levels on the material and vendor masters**

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Master Data: Business Scenario

SAP

- **Your company has decentralized responsibilities affecting the material master. You need to add and maintain records for a new material.**

- **The company has a business relationship with a new vendor. To enable you to order from this vendor, you have to create a new vendor master record in the R/3 System.**

Master Data in the Procurement Process

Purchase order
Header

Items
10 _____
20 _____
30 _____

Material master recd

Vendor master recd

Purchasing info record
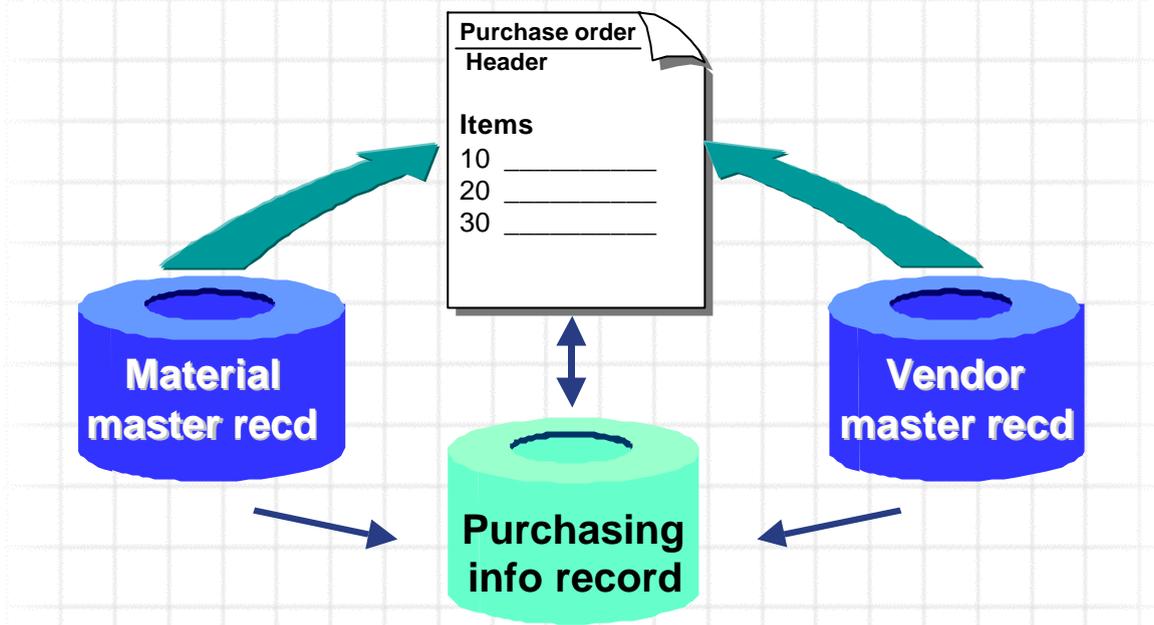
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- Master data contains data records that are stored in the database for a long period of time. These are stored centrally and used and processed on a cross-application basis. This prevents the multiple storage (redundancy) of data.

- The material master record and vendor master record are the most important master data in the procurement process.

- When you create purchasing documents, the R/3 System facilitates data entry by copying the data from existing master records as default values into the purchasing documents. It also copies data such as units of measure and material short texts from the material master record. The data in the vendor master record includes addresses and payment data. You can store data for a particular material (for example, delivery time and purchase price) on a vendor basis in info records.

Vendor Master Record: Organizational Levels

General data

Purchasing and accounting data can be maintained centrally or independently of each other

Purchasing organization data
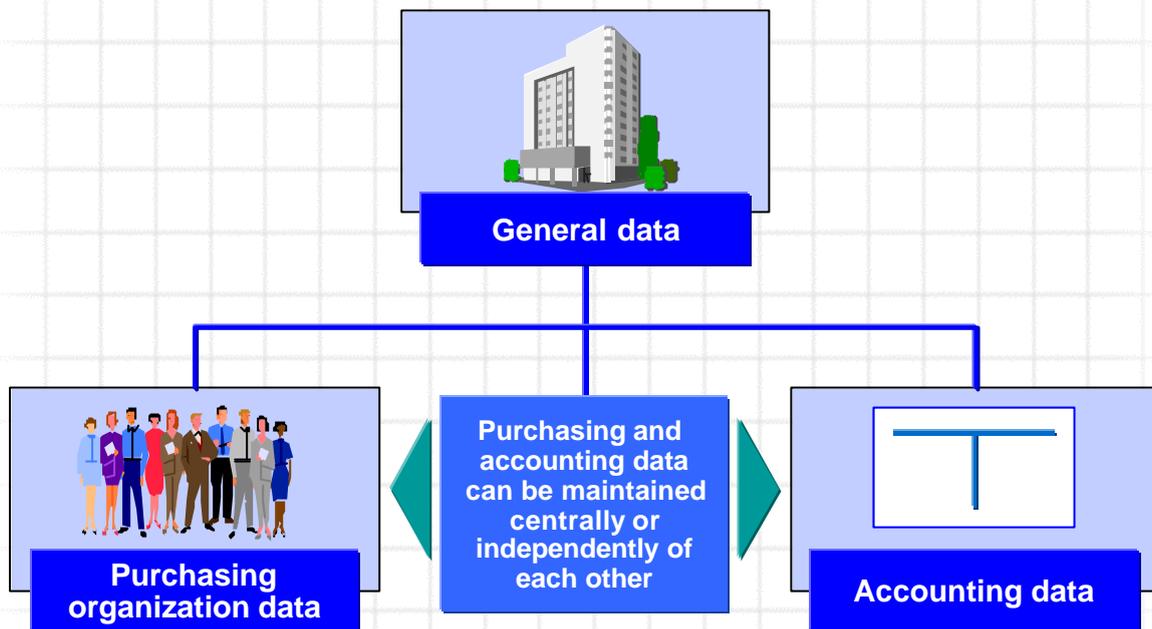
Accounting data

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- In Accounting, the vendor is regarded as the company's crediting business partner. The vendor master record is therefore maintained by Accounting and Purchasing.

- You can use the R/3 System authorization concept to define how data maintenance should be organized in the vendor master record.

- Each user department can maintain both general data and Purchasing and Accounting-specific data centrally or decentrally. In addition, Purchasing often maintains data at corporate group level.

Vendor Master Data

General data
Address, communication, control data, bank details

Company code data
Account management
Payment transactions
Correspondence
Withholding tax

Purchasing organization data
Purchasing data
Partner roles

Vendor master record
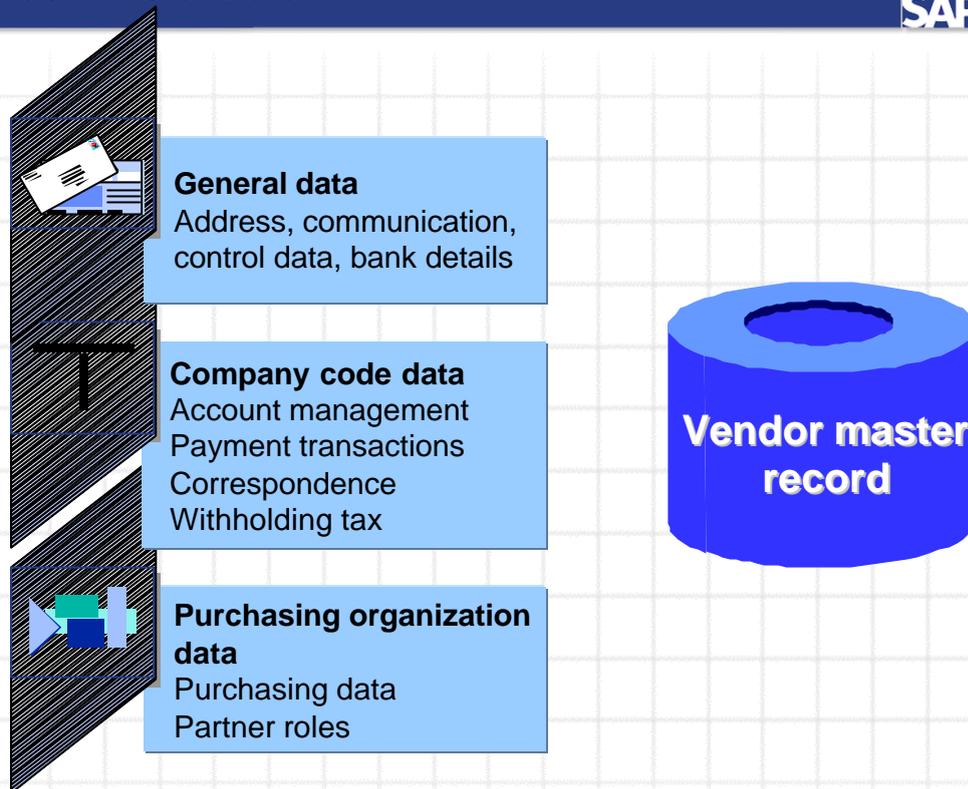
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- Data in the vendor master record is subdivided into three categories:

  - General data: This includes the vendor's address and bank details, for example. This data is valid for the whole client.

  - Purchasing data: This includes the purchase order currency, incoterms, and the vendor's tax data. This data is maintained for each purchasing organization. You can also maintain different data on a plant-dependent basis or for vendor sub-ranges.

  - Accounting data: This comprises data such as the number of the reconciliation account and the payment methods for automatic payment transactions. This is maintained at company code level.

- You can block a vendor master record, for example, if the quality of the vendor's products is poor. You can block a vendor for an individual material via the source list.

SAP

Status (vendor or one-time vendor)

Number interval

Field selection

The account group determines

Type of number assgt

Partner schema

Vendor sub-ranges or plant-specific data
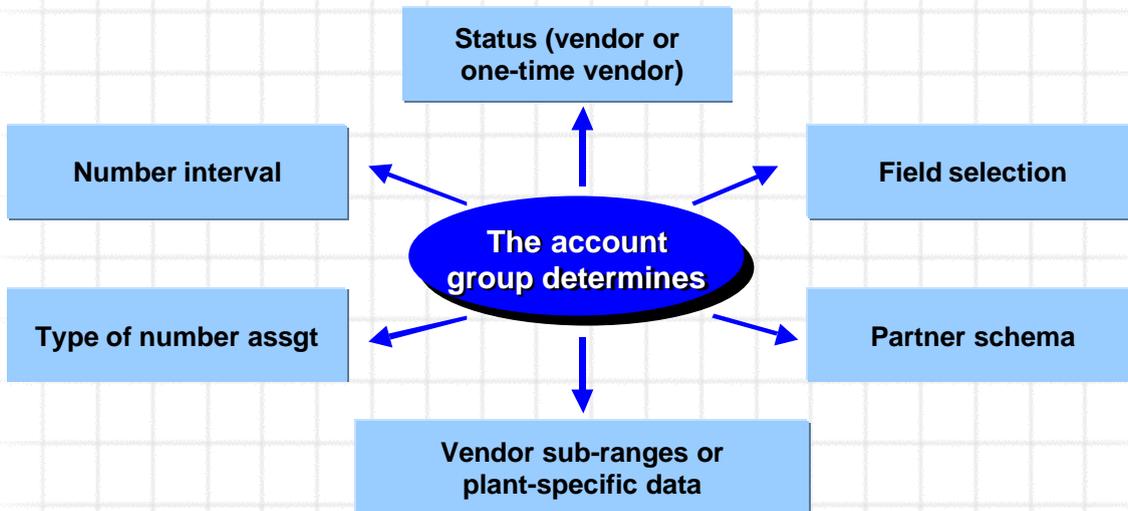
- When creating a vendor master record, you have to enter an account group. The account group has controlling characteristics.

- You can create special master records for vendors from whom you only procure a material once or very rarely. These are called one-time vendor master records and, in contrast to other master records, you can use a vendor master record for several vendors. Therefore, no vendor-specific data is stored for one-time vendors. You can control this using the relevant field selection for account groups for one-time vendors.
  When creating a purchasing document or accounting document with a one-time vendor, the system automatically goes to an additional data screen. This is where you enter specific data, such as the vendor's name, address, or bank details.

One-Time Vendor

Vendor master recd

Description
Language
Reconciliation acct
Currency

Account group
One-time X

RFQ / PO

Invoice verification

?

etails ?

Miller Ltd

Hooper & Co.

MSK Ltd

Marks & Co.

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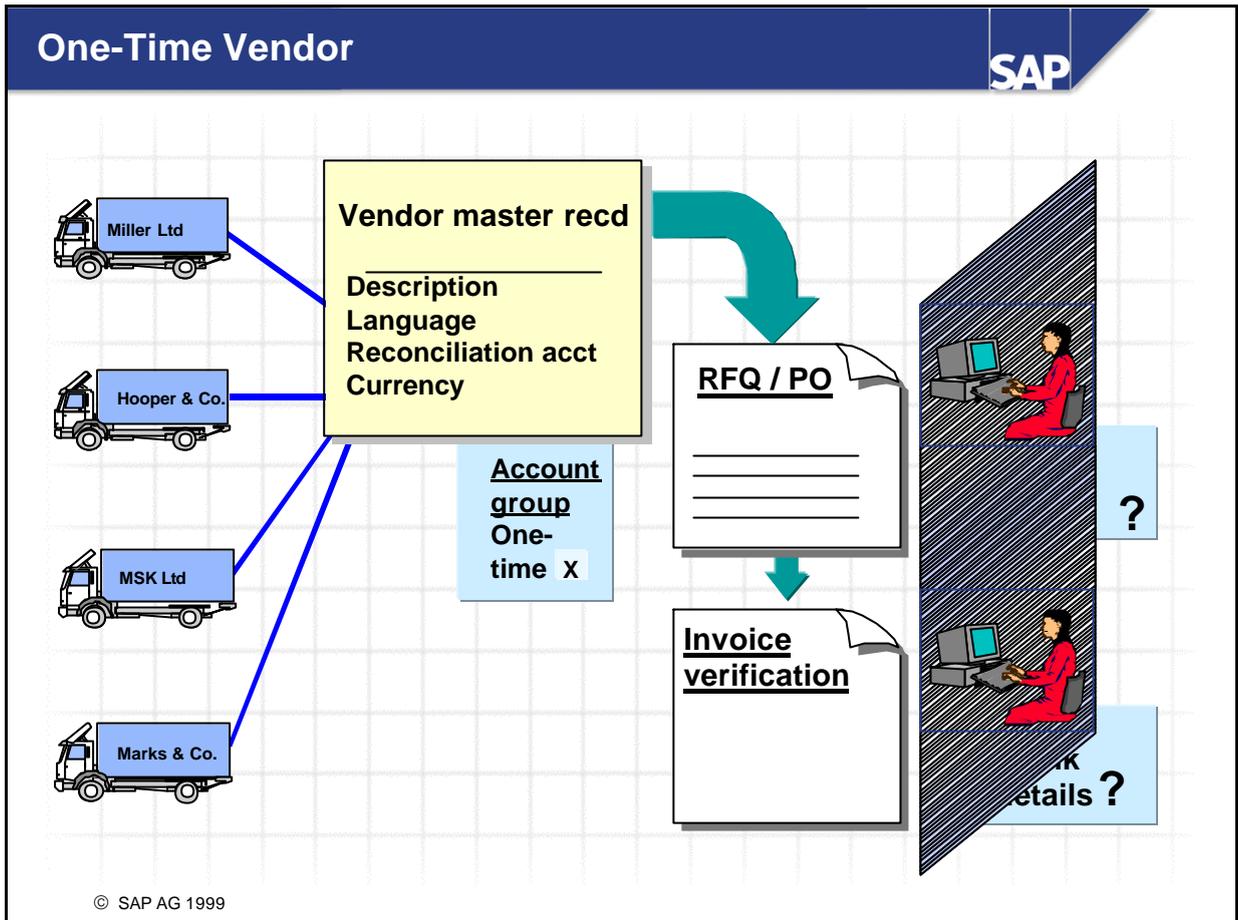
- You can use a single one-time vendor master record to cover a number of vendors. You normally use one-time master records for "one-time" vendors.

Reconciliation Account for Vendor Master Record
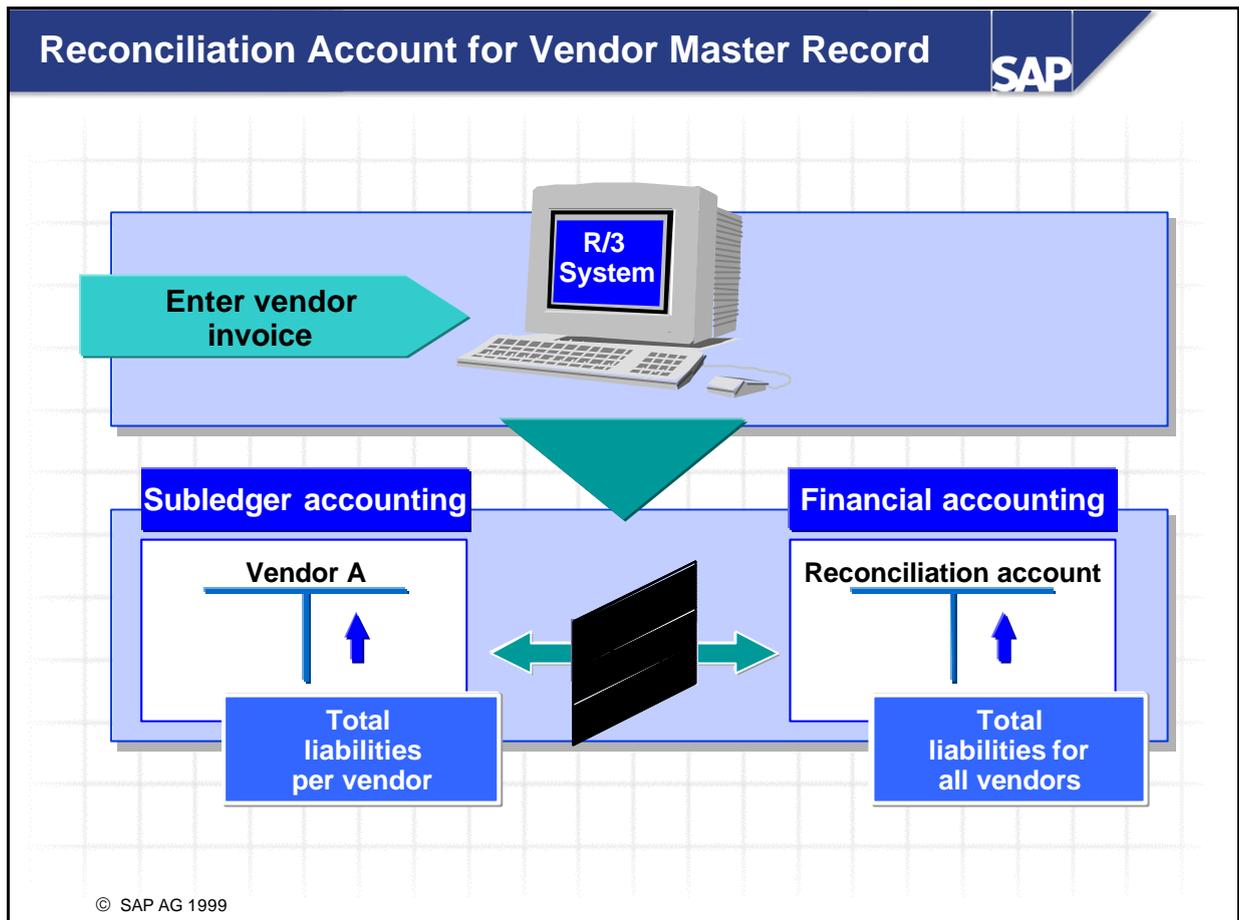
- When you create a vendor master record, you need a unique number for the vendor. Depending on the account group, the system assigns this automatically or the person responsible assigns it manually. The vendor number is also used as the subledger number in Financial Accounting. In subledger accounting, the total liabilities are updated per vendor.

- When you create a vendor master record, you have to maintain a reconciliation account. The reconciliation account is a G/L account in G/L accounting. It maps a company's liabilities towards several vendors in G/L accounting.

- When entering invoices, you enter the vendor, and the system uses the reconciliation account from the vendor master record.

Purchasing Data in the Vendor Master Record

SAP

Purchasing data

PO currency
Terms of payment
Incoterms
...

Purchasing organization

Vendor

Automatic PO
...

Info rec.

Pc.
%
Conditions
$

Pur. order

Optimized purchasing
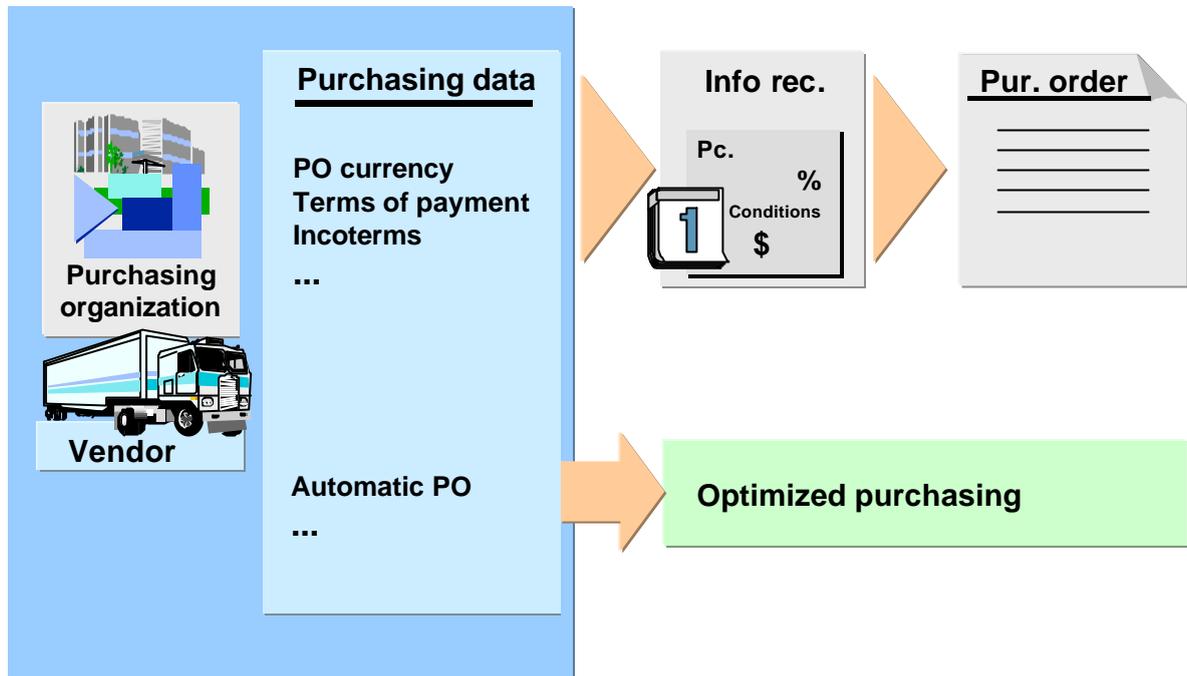
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- Vendor master records contain information on the vendors (external suppliers) of an enterprise.

- From the *Purchasing* view, a vendor master record has the organizational levels "client" and "purchasing organization". Control parameters for purchasing operations are defined at the purchasing organization level.

- Accounting data in the vendor master record is defined at the company code level.

- Data that applies to a purchasing organization can be maintained differently for a specific plant. Such data includes the *Automatic PO allowed* indicator.

Order recipient

Vendor

Invoicing party

Supplier of goods
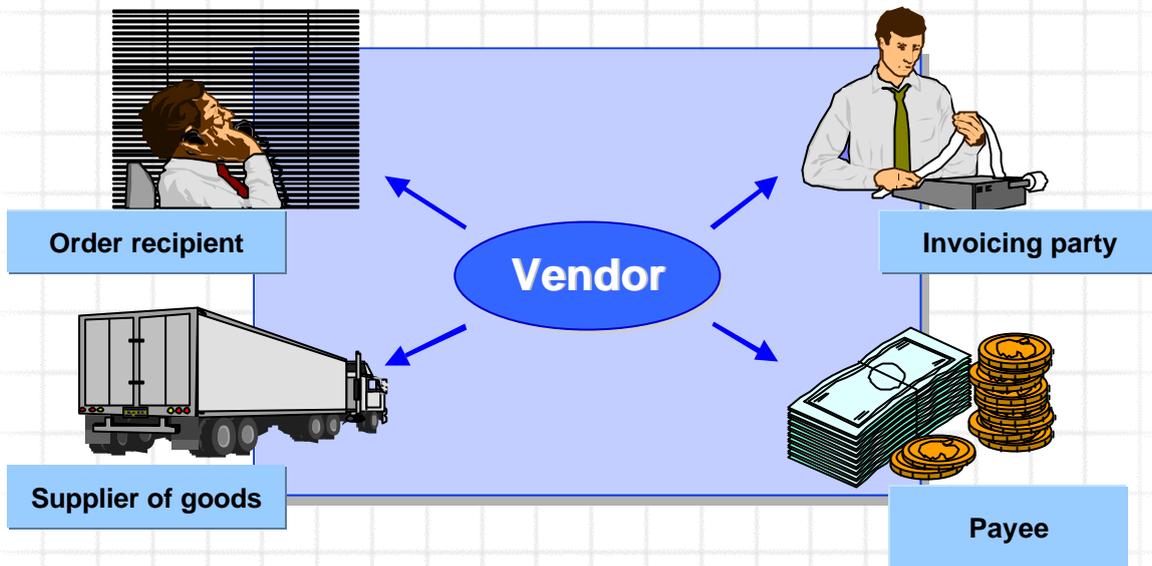
Payee

© SAP AG 1999

- The vendor can have various functions in its interaction with your company. For example, during the procurement transaction the vendor is the order recipient, then the supplier of goods, the invoicing party, and finally, the payee.

- By maintaining partner roles in the vendor master record, you can distribute one or more of these roles among different vendor master records.

Creating a Vendor Master Record with Reference

SAP

Reference → Address data   Control data

X

Copy → Blank   Control data
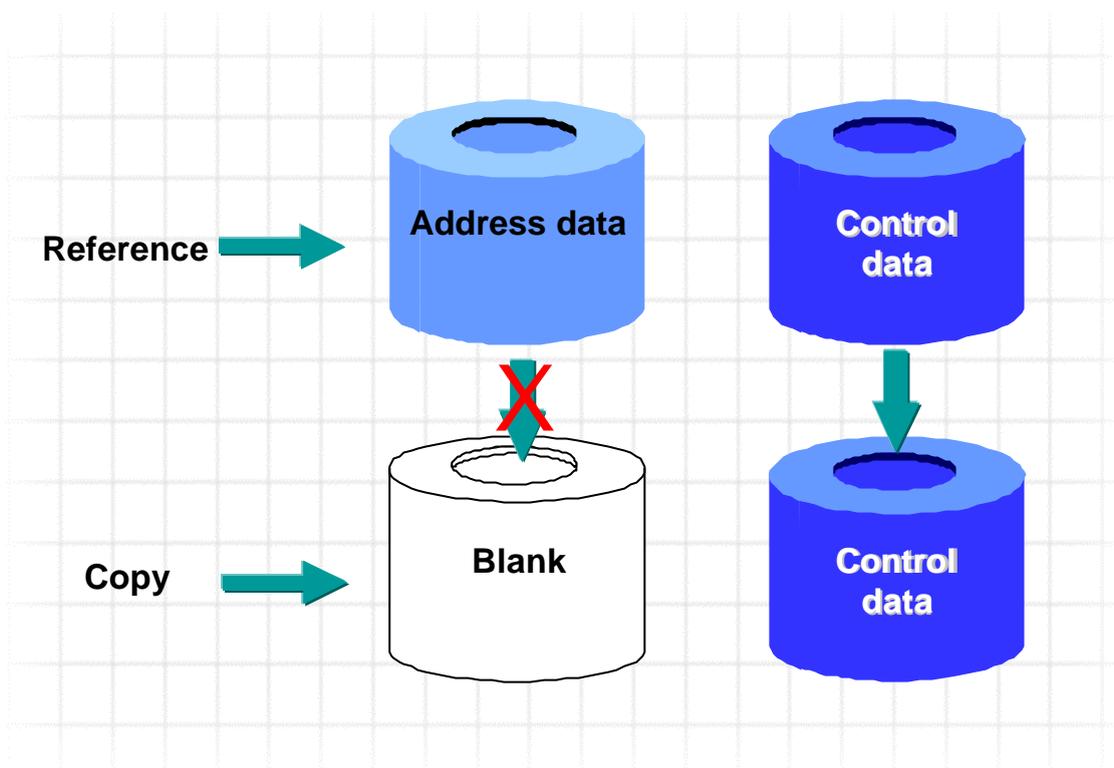
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- To help you create a vendor master record, you can use an existing vendor as a reference. The system prompts you to maintain the data (for example, address). The control data is copied from the reference, but you can overwrite it.

- You can block the vendor master record (for example, for vendors who deliver products of poor quality). Once you have set the block indicator, you can no longer place purchase orders with this vendor.

- Note: In the source list, you can block a vendor for a single material.

Exercises
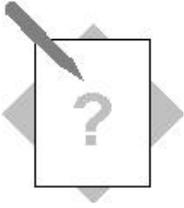
Unit: Master Data

Topic: Vendor Master Record
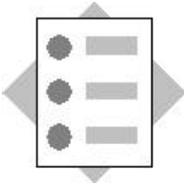
At the conclusion of this exercise, you will be able to:

- Create and maintain vendor master records
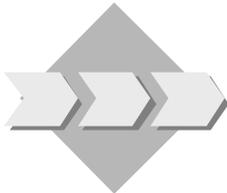
Your company has a business relationship with a new vendor. To enable you to order from this vendor, you have to create a new vendor master record in the R/3 system.

V-1   Organizational levels

For which organizational levels do you enter data in the vendor master record? Which menu paths do you need in Purchasing to create or call up a vendor master record? What is the difference between the various options for creating or calling up the vendor master record?

Organizational levels:_____

Menu paths:_____

_____

_____

V-2 Create vendor master record

You already have the Purchasing and Accounting data for a new vendor. From the perspective of head office, create a vendor master record **T-K12B##** for the organizational levels company code **1000** and purchasing organization **1000**. Assign it to account group **LIEF**.

(Default values for address data)

Form of address:	**Company**
Name:	**Rasch Gr.##**
	KFZ-Zubehör
Search term:	**LO020-##**
Street:	**Daimlerstrasse 127**
Postal code:	**69134**
City:	**Heidelberg**
Country:	**DE**
Region:	**08 (Baden-Württemberg)**
Language:	**English**

Note that you do not have to enter anything in the views below:

Control, General Payment Transactions, Accounting Correspondence, Financial Accounting, Partner Functions

Account Management (Accounting)

The reconciliation account in G/L accounting has the description "**Trade Payables – domestic**". Use F4 input help to determine the number of the reconciliation account and enter this in the relevant field.

Number of reconciliation account:_____

Payment transactions (Accounting)

Automatic payment transactions can be carried out by **check** or **bank transfer**.

<u>Purchasing data</u>

The purchase order currency used for the vendor is **UNI**. Purchasing has agreed on the following conditions of payment: If we pay the invoice within 14 days, the vendor grants a discount of 3 %, and if we pay within 30 days, 2 % is deducted. The invoice has to be settled within 45 days. In this case, there is no cash discount. Use F4 input help to determine the relevant payment conditions.

Payment conditions:_____

The freight and shipping conditions are **FOB Mannheim**. Maintain the incoterms accordingly. In the field provided, enter a contact person and telephone number for the vendor's Purchasing department.

After you enter the data, save your entries.

V-3 Change vendor master record

The payment conditions for vendor **T-K12B##** agreed by Purchasing are also valid for accounting transactions. Enter the relevant payment conditions key on the **Payment Transactions Accounting** screen.

You have also arranged with the vendor that purchase requistions can automatically be converted into purchase orders for some materials. To enable the system to convert these automatically, you have to set the required indicator in the vendor master record. Change the control data on the **Purchasing screen** of the vendor master record accordingly.

(Note: For automatic PO, you must also set a flag in the purchasing view of the material master.)

Entry in field:_____

V-4 Optional: Add to list of favorites

Add to your list of favorites the most important transactions for working with vendor master records.

Material Master Data

Basic data
Materials planning
Stocks in plant/storage loc.
Accounting
Storage
Warehouse Mgmt

Material master record

Purchasing
S&D
Work scheduling
Quality management
Forecasting
Classification

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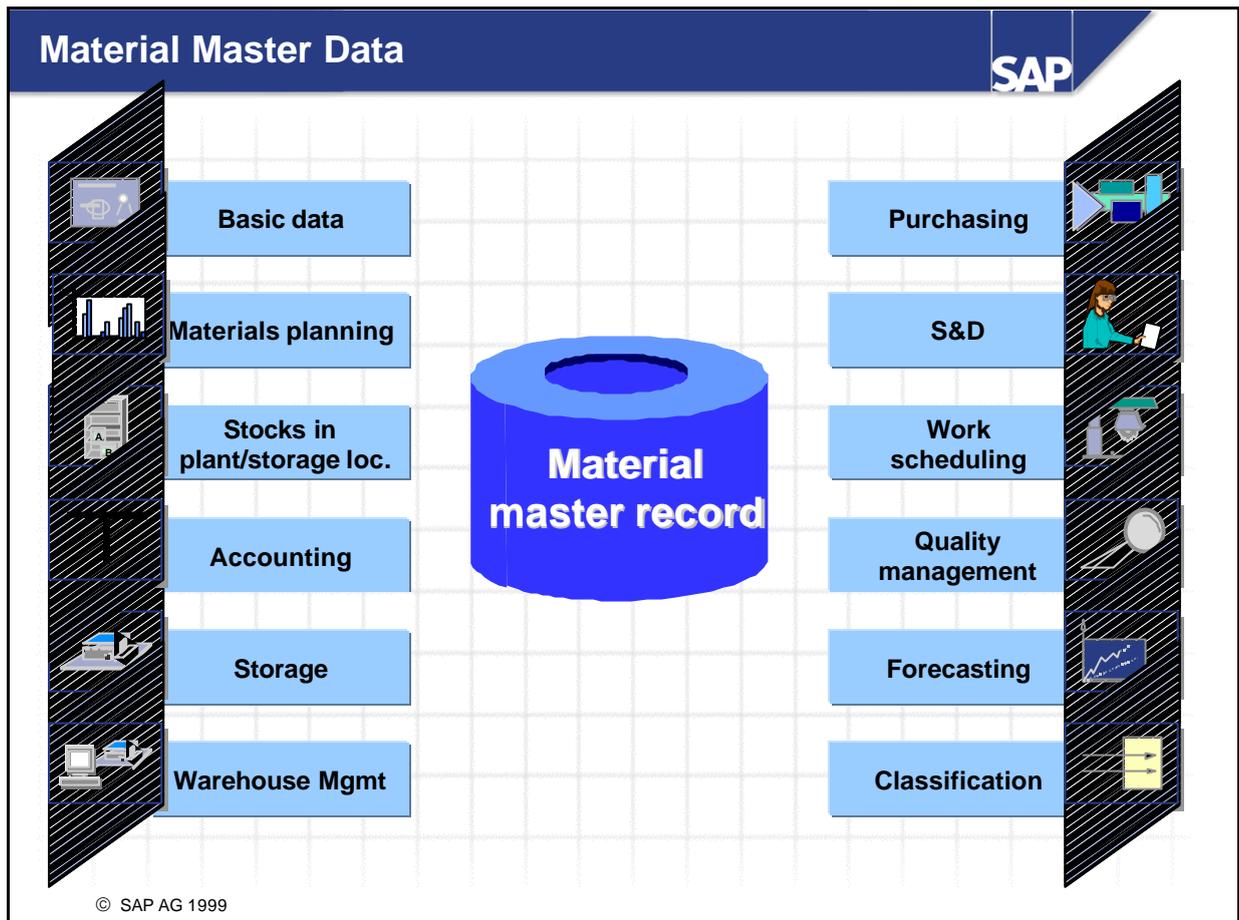
- The material master record is a company's main source of material-specific data. It is used by all components in the R/3 Logistics System.

- The integration of all material data in a single database object prevents the problem of data redundancy. Every area, such as Purchasing, Inventory Management, Materials Planning, and Invoice Verification can use the data stored.

- The data contained in the material master record is required for many functions within the R/3 Logistics System, for example:

  • Purchasing data for ordering

  • Inventory management data for posting goods movements and managing physical inventory

  • Accounting data for material valuation

  • MRP data for Material Requirements Planning

- Since materials are processed by various user departments within a company and each department stores different information for the materials, the material master is subdivided into information grouped by user departments. Each user department has a different view of the material master record and is responsible for maintaining the data to support its function.

- The data maintained within a view may be valid for more than one organizational level.

Data that is valid for the whole company:
For example, material no., material short text, material group, base and alternative units of measure, ...

Data that is valid within one plant:
For example, purchasing data, MRP data, forecasting data, work scheduling data, ...

Data that is valid for one storage location:
For example, storage bin description, picking area, ...

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- Some material data is valid for all organizational levels, while some is only valid for certain levels. The material master is designed to reflect the structure of your enterprise so that you can manage the material data in your enterprise centrally, without overloading your datasets with redundant information.

- Data at client level: General material data that is valid for the whole company is stored at client level.

- Data at plant level: All data that is valid within a plant, and for all storage locations in it, is stored at plant level.

- Data at storage location level: All data that is valid for a particular storage location is stored at storage location level.

Material

(Industry sector)
(Material type)
(Reference)

Views
- Basic data
- Purchasing

- Storage
- Accounting

Organizational
levels
- Plant
- Storage location
- ...
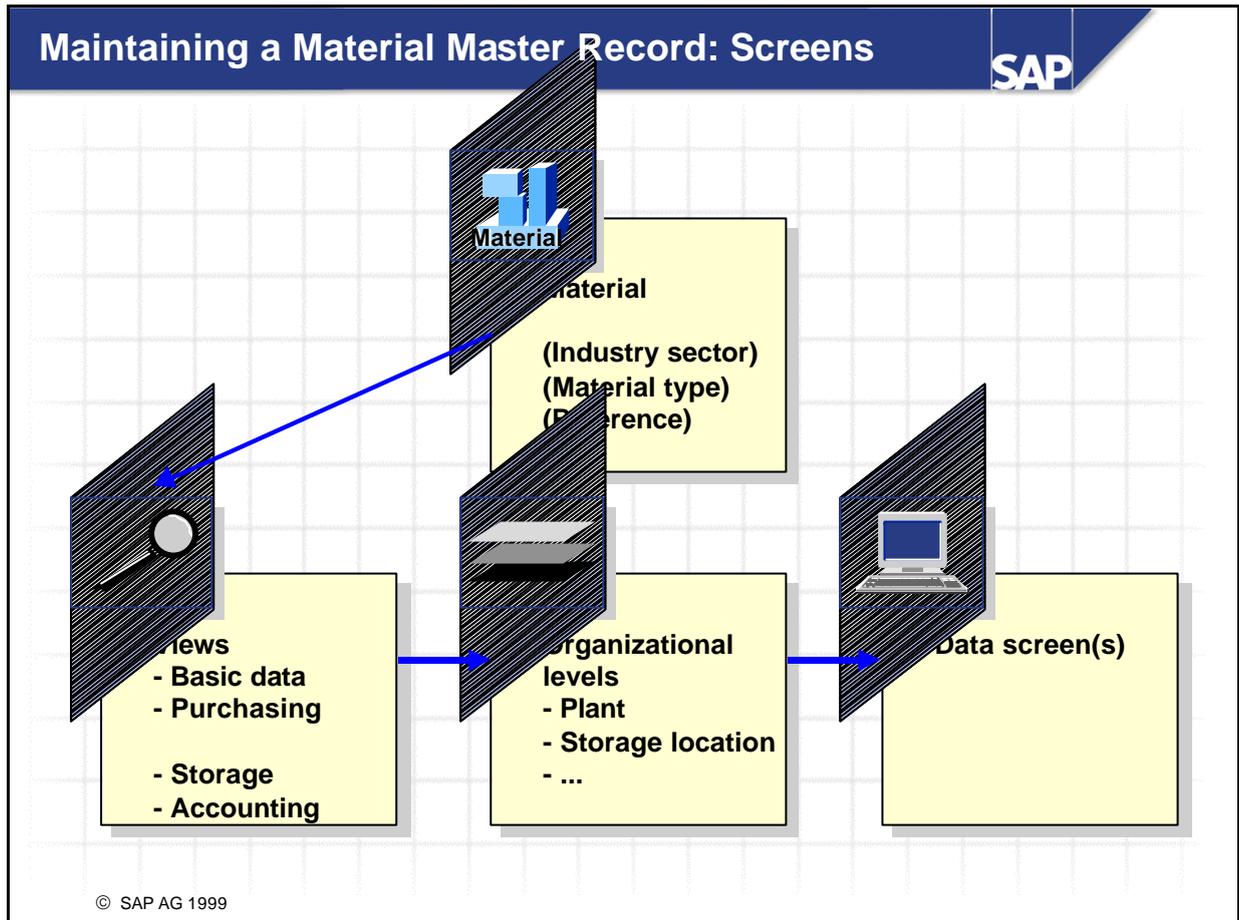
Data screen(s)

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- When editing material master data, you go through a number of screens.
  From the initial screen, you go to two successive dialog boxes. In the first dialog box, you specify the views you want to process. In the second, you specify the relevant organizational levels. You then go to the data screens.

- You can change the standard screen sequence by changing the default values.

- Some screens are not integrated in the standard screen sequence. You can only access these screens by specifically choosing them from the menu bar.

SAP

| Material number	Material	• **18 characters (can be alphanumeric)** ■ **Internal / external / mixed number ranges (number assignment)**
Material type	Material type	• **4 characters (alphanumeric is possible)** → **Important control functions**
Industry sector	Industry sector	• **1 character (alphanumeric is possible)** → **Controls the line of industry of the material master**

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- You create a record in the material master for each material that your company uses. Each material master record has its own unique material number.

- The type of material number assignment can be internal or external. You can use User Exits to change material numbers as required.

- The material type summarizes all materials with the same propertie s. It controls things such as screen setup, screen sequence, procurement type or number assignment

- The branch indicates what line of industry is assigned to the material. It also controls screen setup and screen sequence.

Material Type

Raw materials
Operating supplies
Semi-finished products
Finished products

Control

Number assignment

Procurement type

User departments

Field selection

Account determination

. . .
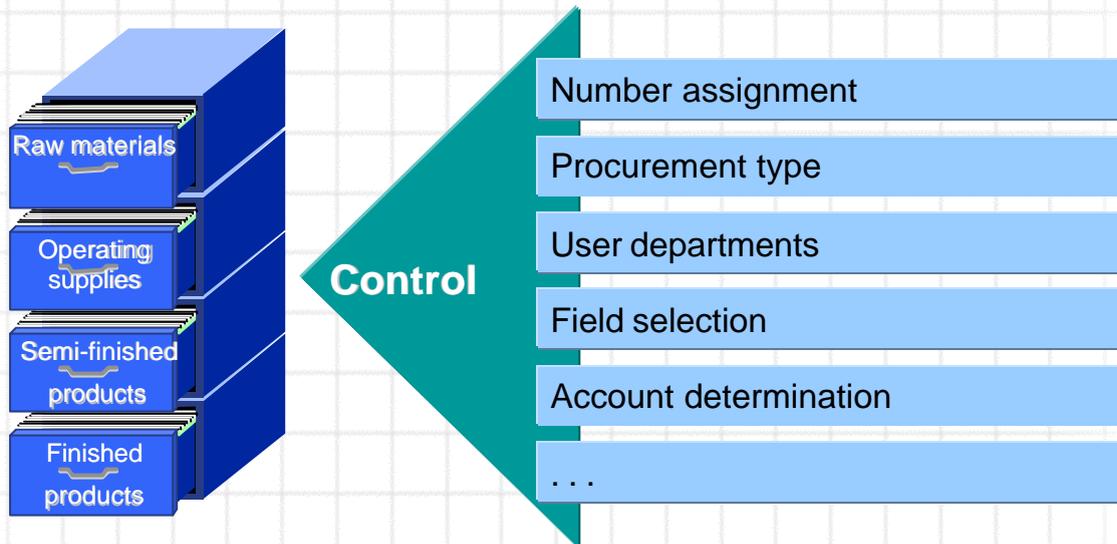
© SAP AG 1999

- You can assign materials with the same characteristics to the same material type. Material types include raw materials, semi-finished products, and finished products, for example.

  The material type controls:

  - The type of number assignment (internal or external).

  - The permitted number range interval.

  - Which screens are displayed and in which order.

  - Which user-department-specific data (view) is suggested for entry.

  - Which procurement type is permitted for a material; that is, whether the material is produced in-house, procured externally, or whether both options are allowed.

- Along with the plant, the material type determines a material's inventory management requirement; that is, whether the system updates quantity changes in the material master record or updates changes in value in the stock accounts in Financial Accounting.

- The material type also determines which accounts are posted when a material is posted to stock or leaves the warehouse.

- Various material types are provided in the standard SAP R/3 System. If your company needs additional material types, you can define these in Customizing according to your requirements.

Chemical industry

Plant eng./constr.

Mech.engineering

Raw materials

Operating sppls

Control

Screen selection

Field selection
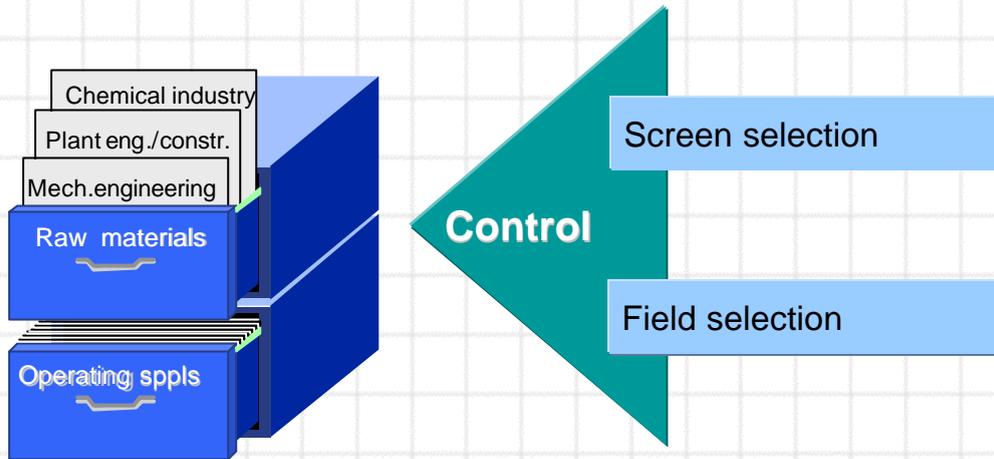
- Like the material type, the industry sector has a control function in the R/3 System.
  When you create a material master record, the industry sector defines:

  - Which screens are displayed and in which order

  - Which industry-specific fields are displayed on each screen

- The industry sector you assign to a material cannot be changed later.

- In Customizing, you can define new industry sectors and maintain the field reference for field selection control according to your company-specific requirements.

Data Screens in Material Master Maintenance

Initial level

Material

Main work area

s...ning   ...P   F...ting   A...ting

Additional data level

Texts

Units of measure

Additional EANs

Document data

Consumption

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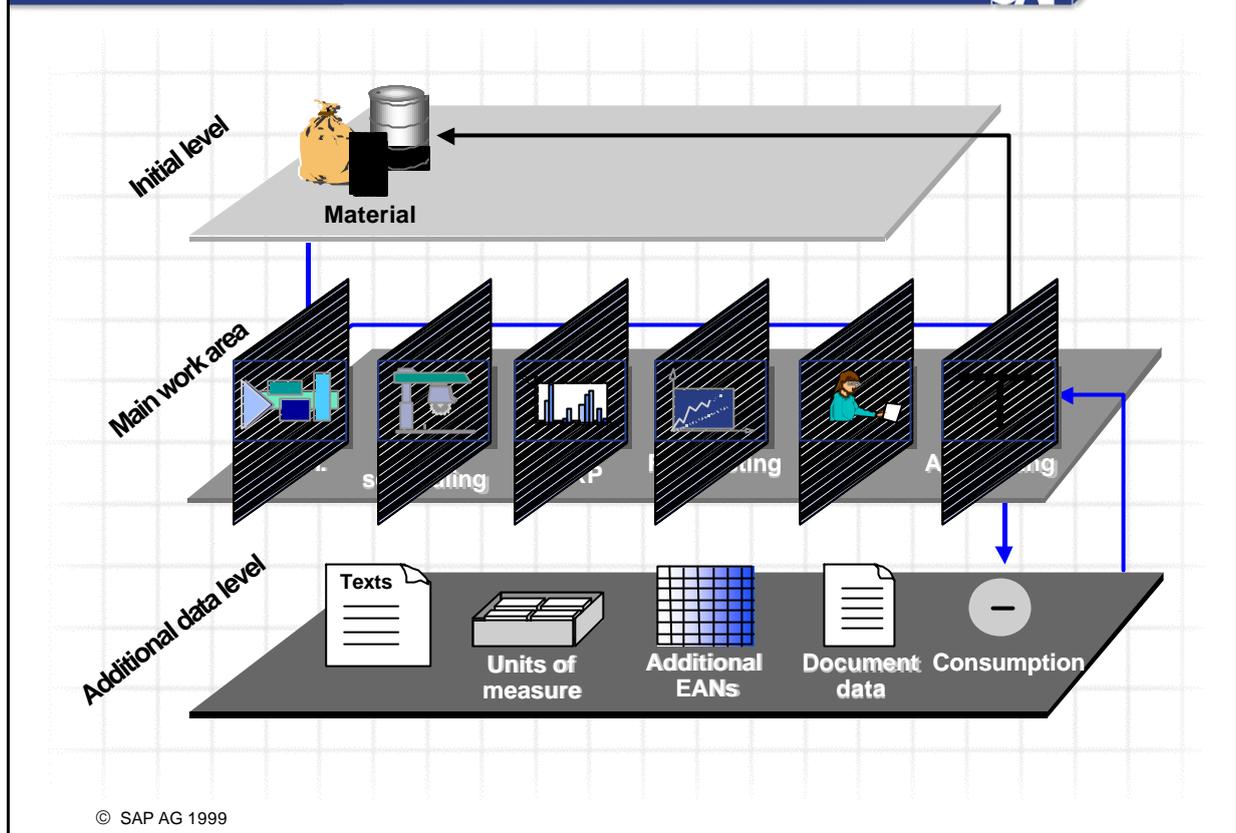
- The data screens used in processing material master records can be subdivided into the following types of screens:

  - Main work level
   These are the screens for each user-department, such as basic data, materials planning, and so on.

  - Additional data level
    These are screens you use to maintain additional information, such as units of measure, material descriptions, consumption values, and forecasting data.

- Most data in the material master record can be maintained directly by the user. But some information is automatically updated by the system. When you enter goods movements, for example, the system updates the stock and consumption data. Via the *Information on material* icon, you can call up statistical information (for example, the date on which the data was first created and when it was last changed).

- Some data in the material master is only used for information purposes (for example, description, size, and dimensions).

- Other types of material data have a controlling function in an application. For example, the MRP type controls the MRP procedure, and the price control indicator determines which material valuation procedure is used.

Units of Measure

SAP

Base unit of measure: piece

4 16 72

| Carton | Crate | Palette |
| (Unit of issue) | (Purchasing unit) | (Sales unit of measure) |

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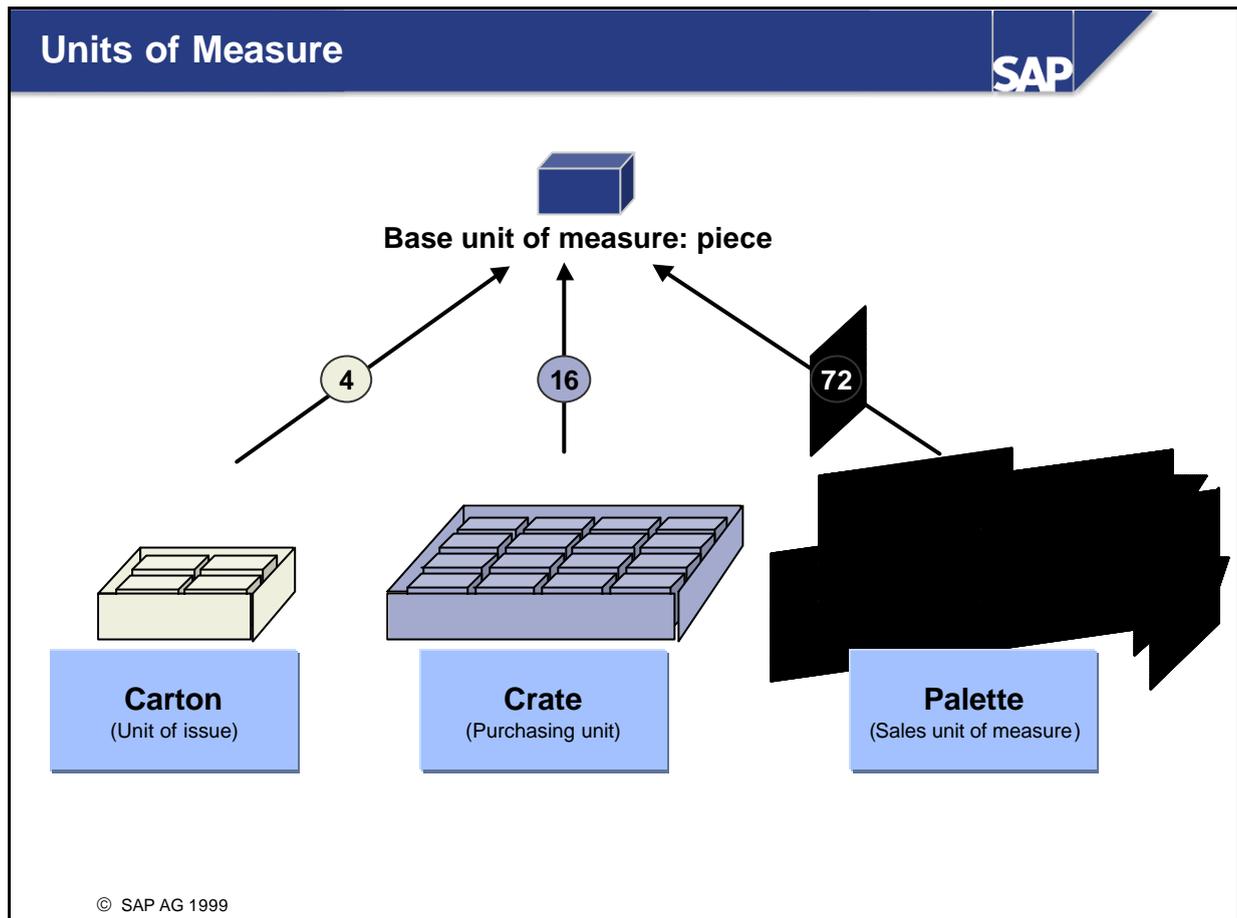
- In addition to the base unit of measure that the system uses for stock-keeping and to execute all its calculations, other departments can use their own units of measure. For example, purchasing can use another unit of measure to sales and distribution or to the warehouse.

- All units of measure in the SAP System, in addition to the base unit of measure, are grouped together under the title '**Alternative units of measure**'. There are the following alternative units of measure:

  - **Base unit of measure:**

    Stock-keeping unit. All other units of measure that you use, are converted to the base unit of measure. If there is no standard formula for converting an alternative unit of measure to the base unit of measure, you must enter the conversion factor for the units of measure in the material master.

  - **Purchasing unit**:

    Unit of measure used for ordering the material. This is the default unit displayed in purchasing functions.

  - **Sales unit**:

    Unit of measure used for selling the material. This is the default unit displayed in the sales order. You can change this unit in the sales order.

  - **Unit of issue**:

    Unit of measure for issuing the material from stock. You use this unit for goods issue and stock movement functions.

- The engineering/design department usually uses the base unit of measure.

Purchasing Data in the Material Master Record

Purchasing data

- Order unit
- Tolerances
- Reminder levels
- ...

- Purchasing group
- PO text
- ...

- Automatic PO
- Source list require-
  ment
- Quota arrangement
  usage

Material

Plant

Info rec.

Pc.

%

Conditions

$

Pur. order

Optimized purchasing
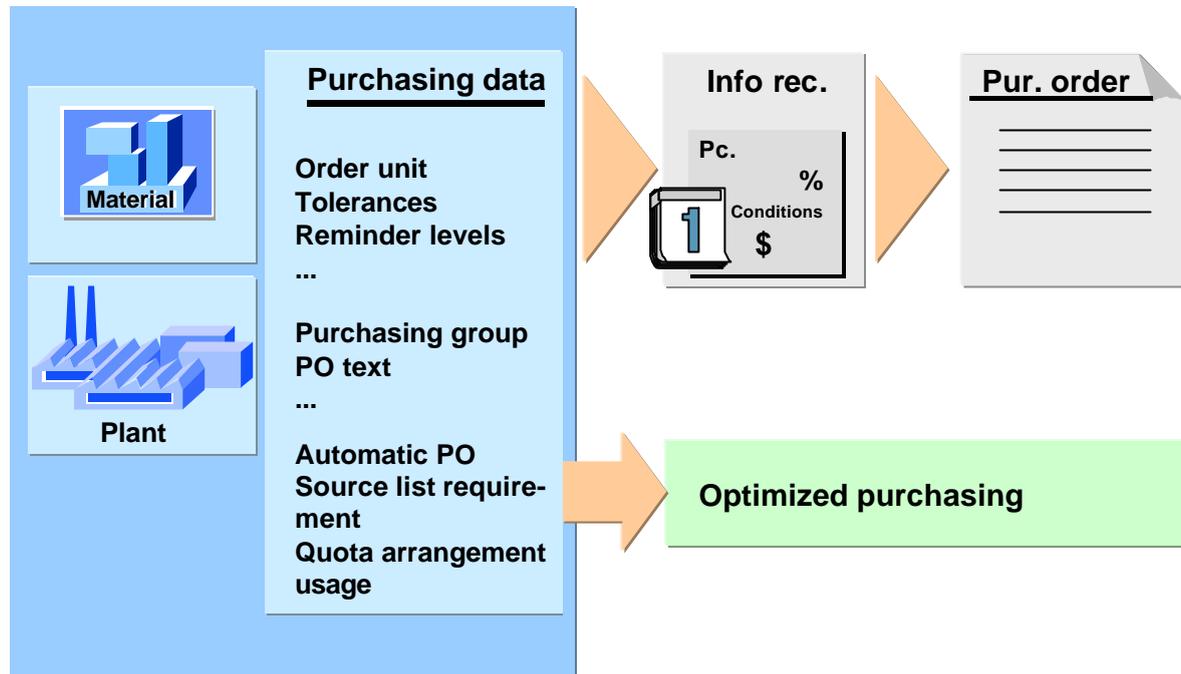
- Material master records contain descriptions of all the articles and parts that an enterprise procures, manufactures or stores. To the enterprise, the material master record represents the central source of information on a specific material. It is used by all components of the SAP *Logistics System.*

- All the information necessary for the administration of a material is stored in its master record. Since different user departments of an enterprise work with a material, and each one needs to store different information relating to it, the material master record contains separate data blocks for each department. Each department thus has its own view of a material master record and is responsible for the correctness of the data within its block.

- From the *Purchasing* view, a material master record has the organizational levels "client" and "plant". At client level, you can specify the purchase order unit, under- and over-delivery tolerances and reminder levels.

- The *Source list requiremen*t, *Quota arrangement usage* and *Automatic PO allowed* indicators are set at plant level.

Valuation Class

Material type

Valuation class 1 → 300000

Valuation class 2 → 300100

Accounting 1

Valuation class

Material master

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- You can use the valuation class to combine materials for assigning G/L accounts so that you do not have to manage a separate stock account for each material.

- You maintain the valuation class in the Accounting view of the material master record. The valuation class allowed for a material depends on the material type, and can be configured in Customizing.

- In automatic account determination, the R/3 System works with valuation classes. The valuation class is used to determine which stock account is to be updated upon goods movements.

Material Valuation Procedures

Material valuation

Price control
(in material master)

"S"
Standard price

"V"
Moving average price

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- Valuation of goods receipts depends on the price control procedure you set in the material master record. In the R/3 System, material valuation can be carried out according to the moving average price procedure (V price) or the standard price procedure (S price).

- In the standard price procedure (price control "S"), the system carries out all stock postings at a price defined in the material master. Variances are posted to price difference accounts.

- In the moving average price procedure (price control "V"), the system valuates goods receipts with the purchase order price and goods issues with the current moving average price. The system automatically calculates the latter upon every goods movement by dividing the total value by the total stock quantity. Differences between the purchase order price and the invoice are posted directly to the relevant stock account if there is sufficient stock coverage.

Extending the Material Master Record: Example

- Once a department has created data for a material, a material master record is created for it in the database. If someone from another department then wants to enter data, he or she has to extend (add) the information from his or her department. The system also extends a material master record when data for a material is saved for other organizational levels.

- You can add the missing views or organizational levels to the material master by choosing the transaction *Create material master record.*.

- You can only change the data for views and organizational levels that have already been maintained by choosing the transaction *Change material master*.

- Any changes (creation or change) you make to data in the material master record are saved in a change document. This means that you can check the change history at any time.

- You can also activate engineering change management for materials.

Entry Aids in Material Master Maintenance

Settings

Reference material

Profiles

Collective entry of storage location data

Mass maintenance

Material master maintenance

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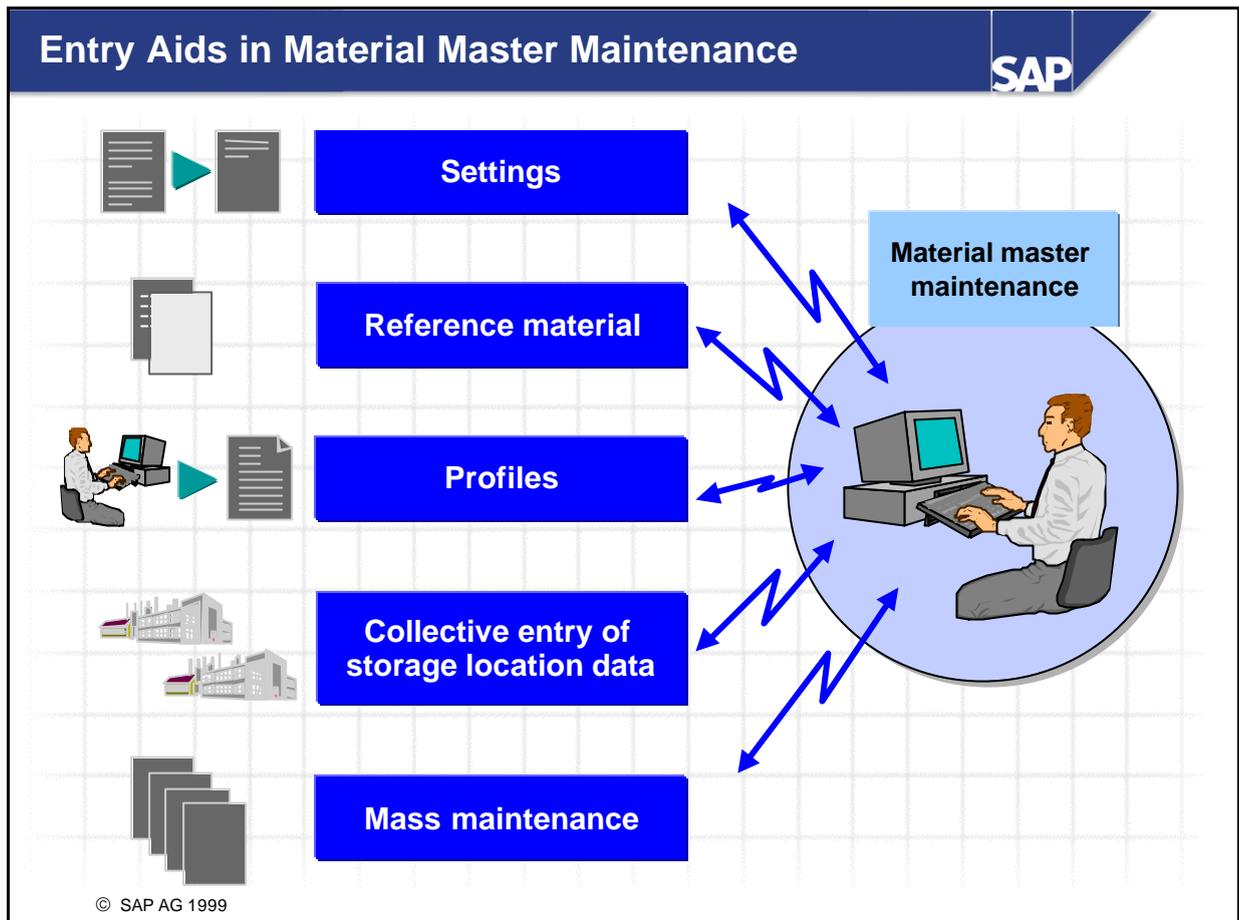
The following entry aids facilitate material master maintenence:

- Settings: Quicker data entry by presetting the organizational levels and views most often used. These default values are user-specific, and you can overwrite them.

- Reference material: Quicker data entry by copying the relevant data from existing material master records.

- Profiles: Quicker data entry by copying data from the materials planning or forecast profile to the relevant views.

- Collective entry of storage location data: Creation of several storage locations in one step significantly reduces data entry time.

- Mass maintenance: Changes data in several material master records in one procedure.

Material Master Defaults

- ● **To access material master data efficiently, you may:**

  - ■ **Predefine the industry sector**

  - ■ **Predefine the selection of your material master views**

  - ■ **Predefine the selection of your organization levels**

- ● **To promote more efficient and accurate entry of MRP / forecast data you can predefine multiple MRP / forecast profiles:**

  - ■ **Default values for MRP / forecast data fields**

  - ■ **Rules for MRP / forecast data field entry**

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- ■ The MRP profile allows users to set default values for MRP data fields while defining whether the value can be changed during material master maintenance.

- ■ If a change is made to a default value in the MRP profile and the field can not be maintained during material master maintenance, the system will automatically change the field value in all material masters linked to that specific MRP profile.

Materials List

| Numbers | ▶ | |
In plants	▶	
Of material type	▶	Material
For user	▶	

■ This function allows you to create materials lists according to specific, combinable selection criteria:

- List of material numbers

- List of all materials that have been created in a certain plant

- List of all materials of a certain material type

- List of all materials of a certain material group

- List of all materials that have been created by a specific user in a material master record.
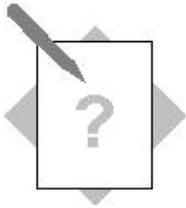
Exercises

Unit: Master Data

Topic: Material Master Record
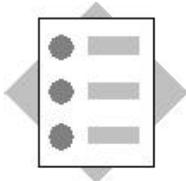
At the conclusion of this exercise, you will be able to:

- Create and maintain material master records
- Explain the impact of organizational levels on the material master record
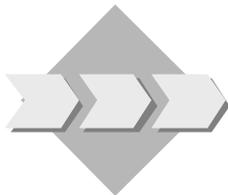
You are responsible for creating and maintaining material master records in your company. Create a material master record for a new headlamp.

1-1   Create material master record

In coordination with the other departments involved, you create a material master record for raw materials. The material is to be used in plant **1000** first. Therefore, you have to maintain several views of the material master record.

Initial screen:

Material:	**T-RM2##**
Ind. sector:	**Mech.engineering**
Material type:	**Raw material**

Select view(s):

Choose the views **Basic Data 1, Purchasing, Purchase Order Text, and General Plant Data/Storage 1**.

Organizational levels:

Plant:	**1000** (Hamburg)
SLoc.:	**0001** (Material store)

Basic data:

The material description is **headlamp extra bright-##**.
Piece is the base unit of measure for the headlamp. The headlamp is assigned to material group **003 lighting**. The gross weight is **4 kg** and the net weight **3.8 kg**.

Because you use the headlamp in more than one country, you can also maintain the material description in another language.

You can enter other short texts in the additional data by choosing *[Additional data].*

Purchasing:

The purchasing group **T##** is responsible for procuring the headlamp. Urging letters about undelivered goods should be sent after 10, 20, and 30 days. Under or overdeliveries are not accepted. Choose the relevant purchasing value key. It takes **1 day** to process goods receipts for this material.

Purchase order text:

Maintain the text below: **"The delivered material must meet our technical specification number 65432".**
You can also enter the purchase order text in another language.

When you create a purchase order, the system proposes the language that is used in the vendor master record. The material short text and the purchase order text from the material master record are transferred and printed in the language used in the purchase order.

Storage 1:

The headlamp is to be stored in storage location 0001, storage bin **BL-01**.

Once you have entered all the data, save the material master record.

1-2 Display material

Display the material master record. Which views are proposed for you to display?

_____

_____

1-3 Extend material master record

The accounting data for material **T-RM2##** is passed on to you later. Maintain this data for plant **1000.**
The material is assigned to the valuation class **raw materials 1** and is valuated using the **moving average price** procedure. The valuation price is **80 UNI**.

1-4 Copy material master record

Material **T-RM2##** is also to be used in plant **1200**, storage location **0001**. Create a new material master record for this plant. Use the data from material **T-RM2##** in plant **1000** and storage location **0001** as a reference.
Maintain the views **Basic Data 1, Purchasing, Purchase Order Text, Accounting 1, and General Plant Data/Storage 1.** Check that all the data has been copied correctly and save your entries.

You have to go through each view at least once before saving it to make sure that all the data has been copied from the reference document.

1-5 Change material master record

Change the purchasing and accounting data for material **T-RM2##** in plant **1200**. The changes should take effect immediately.
In plant 1200, the system should always propose that the material be posted to quality inspection stock when it is received. It is also assigned to the valuation class **3001** in this plant, and is valuated with the **standard price of 80 UNI**. Save your entries.

1-6 Display change documents for a material

Find out when the accounting data for material T-RM2## in plant 1200 was last changed.

Date: _____

1-7 Enter material data for several storage locations

You store material **T-RM2##** in plant **1200** in several storage locations. Enter the additional storage locations via collective entry.

SLoc	Bin
0002	**BL-02**
0003	**From-10**

To do so, use the transaction *Enter storage locations* from the *Others* menu in the *Material master record* application area.

1-8 Materials list

Check whether your material is actually available for plants **1000** and **1200** by displaying the materials list for **T-RM2##** and the aforementioned plants. It is particularly important that you check whether the valuation data is consistent with the information from the previous exercises.

Try to limit as much as possible the information you specify in the materials list, so that the system does not have to search too many data records.

1-9 Optional: Add to list of favorites

Add to your list of favorites the most important transactions for working with material master records.

Extending a Material
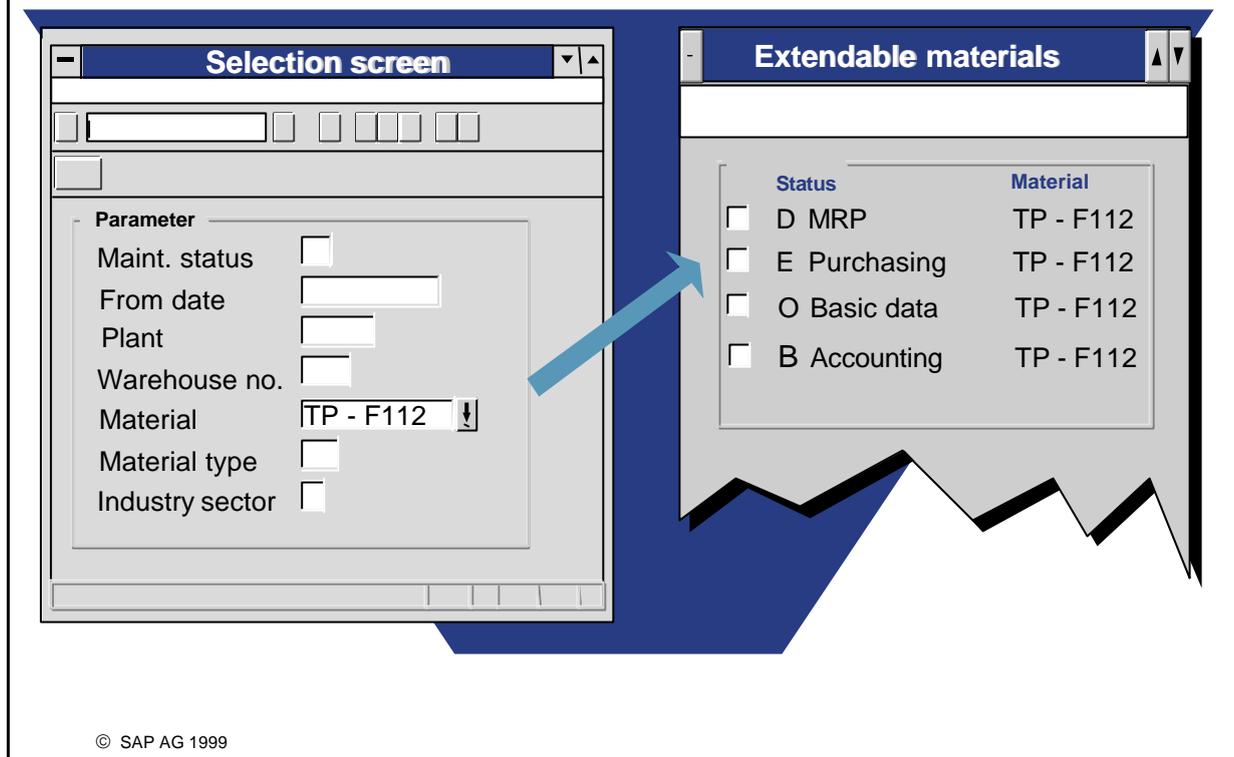
- This function allows you to extend the material master record by further views.
- The following questions can be answered:
  - Which departments have to extend a material master record?
  - Which material master records does a single department have to extend?
- Important maintenance statuses:

Department:	Maint. status
Work scheduling	A
Accounting	B
MRP	D
Purchasing	E
Production resources/tools	F
Basic data	K
Costing	G
Classification	C

- If **additional views** are added to the existing master record then you can also work with the function *create material.*

1. Set deletion flag ▶ Client

▶ Plant

▶ Storage location

2. Reorganization ▶

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- You can delete materials by setting a deletion flag either in the material master record or by using a proposal list.

- The deletion flag can be planned for the future and must then be activated at the correct time.

- All flagged records are deleted by a reorganizational program run, as long as these are no longer to be used, for example, as a BOM header.

- Material master deletion consists of three steps:
  1) The material master is flagged for deletion
  2) The material master is selected for reorganization processing
  3) Reorganization processing is executed

  System checks are performed during reorganization to ensure the material can be deleted and archived with no impact on other R/3 processes.

SAP

Database

1. Archive

Sequential file

Tables
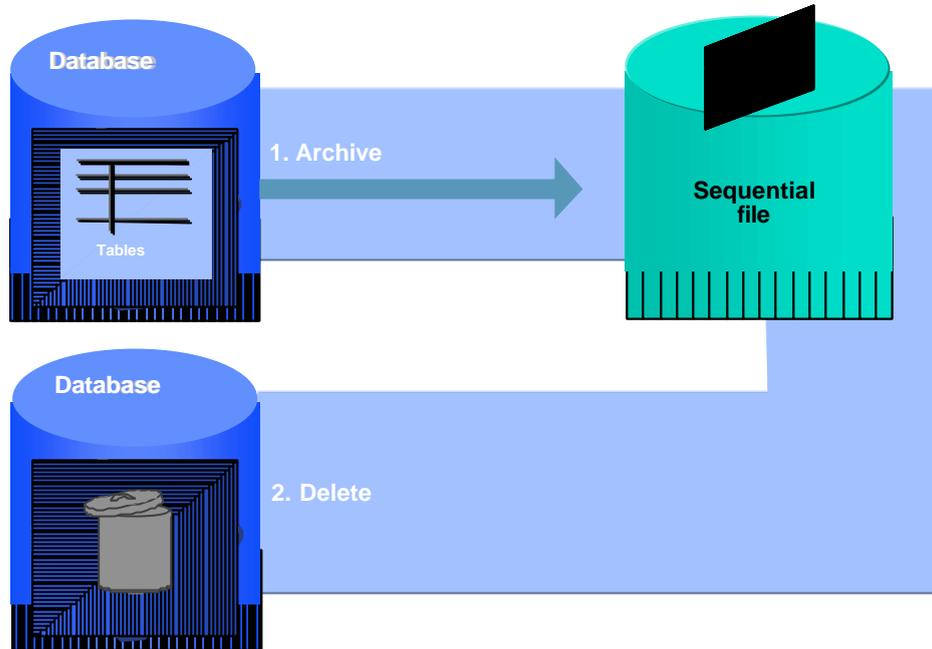
Database

2. Delete

- You can archive material master records.
- The data is stored in a sequential file (archive file).
- Archived data can be deleted from the database during each deletion program or reorganization.
- Archived material master records can be displayed, but they cannot be retrieved.
- Archiving and reorganization are handled in detail in the administration courses.

Authorization Groups for the Material Master

SAP

Material 4711

Material 4712

Authorization:

Material Master

Cur. chng = (0000 - 0100)

Display = (0000 - 5000)

Data field:

Authorization group: 150

Data field:

Authorization group: 50

Cur. chng

Display

Cur. chng

STOP
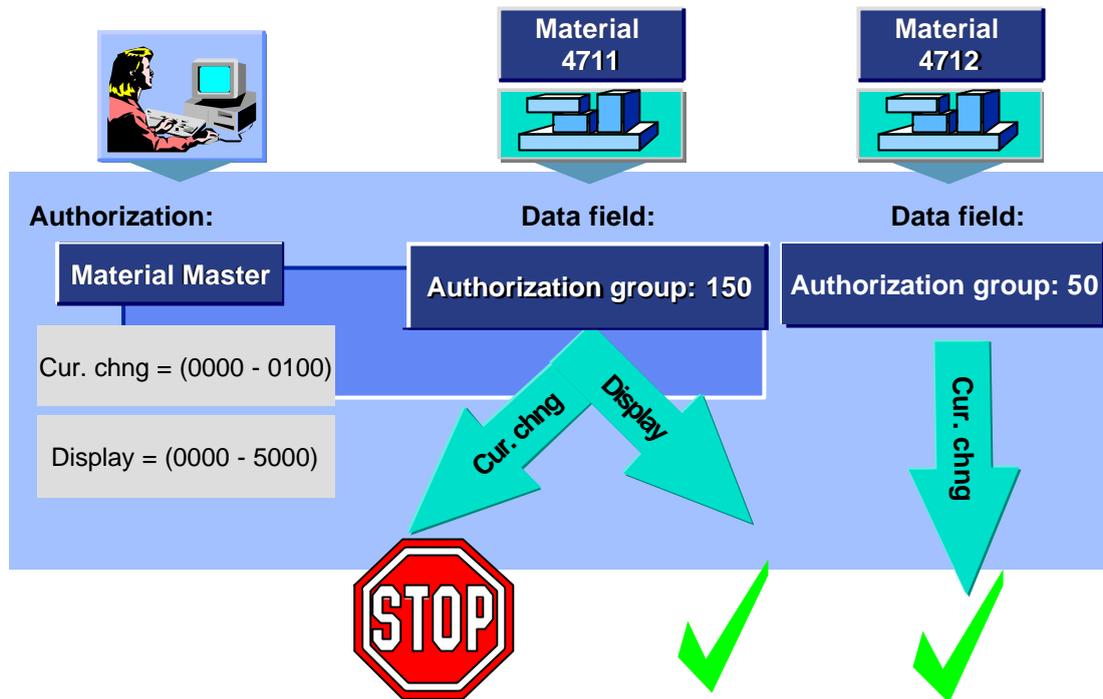
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- Setting up user master records and authorizations is dealt with in a separate course on this subject.
- If you have the appropriate authorization, you can display and check authorization objects in *Customizing*.

Exercises

Unit: Master Data

Topic: Display and Create a Material Master (optional)
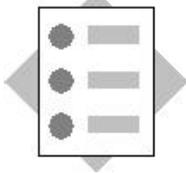
After completing this topic, you will be able to:

- Create and change data for a material from an engineering/design, purchasing, storage, and accounting perspective

- List the organizational levels relevant for maintaining the material master record
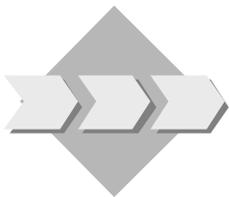
In our enterprise, material master maintenance is decentralized, i.e. each user department is responsible for creating its own data for a material. The project team is testing how it can manage this using the R/3 System material master maintenance function.

2-1 Displaying a Material

The company shown in our training system has two production plants with the numbers 1000 and 2000. The material with the description "HD Rear Shock Absorber" is used in both plants. Material master records have already been created. Find out the following information on this material.

2-1-1 From the Material menu, choose Display - Display current. On the initial screen, you need to enter a key identifying the material you require. What aid can you use if you do not know this key?

How do you do this?

You know the material description.

_____

_____

_____

_____

What is the key of the material you require?

_____

You want to display the data for the views Basic Data1, Purchasing, and Accounting1. Choose the views concerned. First choose plant 1000.

_____

2-1-2   The first data screen contains the basic data for this material. Write down the values contained in the following fields:

Base unit of measure   _____

Material group   _____

Gross weight   _____

Division   _____

How can you find out what the value in the Division field means?

_____

_____

_____

Meaning: _____

How can you display the definition and attributes of the Material group field?

_____

_____

_____

2-1-3   By choosing Enter, you can access the next data screen of the views selected by you for this material. It contains purchasing data.

To which plant does this data apply?

Plant: _____

Enter the corresponding values for the material in the following table. (For the time being, enter values only for plant 1000.)

	Plant 1000	Plant 2000
Purchasing group		
Reminder 3		
GR processing time		

2-1-4   You want to view the data for this material for plant 2000.

How do you access the dialog box for entering the organizational level?

_____

_____

Do the values on the Basic Data screen differ from those determined in part 2-1-2 of this exercise?

_____

Is a plant specified on the Basic Data screen?

_____

Is a plant specified on the Purchasing screen? What does this mean?

_____

Enter the corresponding values for plant 2000 in the table contained in part 2-1-3 of this exercise. Compare the values for plants 1000 and 2000.

Consider/discuss the following questions in particular:

Which of these data fields are plant-specific?

_____

_____

Can you tell from the table whether the other fields are not plant-specific?

_____

_____

What possibilities do you have of finding this out nevertheless?

_____

_____

2-1-5 Choose 'Information on Materials' on the Material master screen.

Have the views for this material been maintained by one person or by more than one person (centrally or decentrally)? How can you tell this?

_____

_____

2-1-6 You require information on the stock quantities of this material.

From a data screen choose

Environment ® Stock overview

_____

2-2 User-Defined Settings (Helps in Material Master Maintenance)

You can define default settings for the industry sector, views, and organizational levels for creating, changing, and displaying a material master record.
What settings would you make if:

2-2-1 approximately 70% of the material master records to be created by you are for mechanical engineering,

_____

2-2-2 you normally maintain the views Purchasing, MRP1, 2 and Accounting1,

_____

2-2-3 you are responsible for material master maintenance in plant 1000.

_____

Make the corresponding default settings and check them using an appropriate example.

2-3 Creating a Material

A new material is to be used in plant 1000 of the company. Data must be entered for this material for the views Basic Data1, Purchasing, MRP1, 2 and Accounting1. The material belongs to the industry sector mechanical engineering.

2-3-1 Choose the create material function for a semifinished product. The material has the number M01-## (## = your group number).

Access the Select View(s) dialog box.

Which views are selected?

_____

Select all of the views above.

You want to make sure that the material is created for plant 1000 and storage location 0001.

To do this, choose the Organizational Levels dialog box.

Which values are proposed?

_____

2-3-2 When creating the material master record, take the following requirements into account:

Write down the names of the fields in which you make an entry.

The material is known at your company as "Spiral Casing ##" (## = your group number).

Field: _____

It is managed in stock as a piece.

Field: _____

Assign the material to the material group 00201 (Casing)

Field: _____

Also enter the description in another language (for example, in German "Spiralgehaeuse"). How do you do this?

_____

_____

_____

On the Purchasing screen, enter 0## as the key for the purchasing group.

Field: _____

Enter a purchasing value key defining the following reminders and tolerances:

- Reminders after 10, 20, and 30 days

- Underdelivery/overdelivery tolerances of 5% each

Field: _____

The goods receipt processing time is 3 days.

Field: _____

The material is a critical part.

Field: _____

Automatic material requirements planning (MRP) is not supported for this material. Enter an appropriate MRP type on the MRP screen.

Field: _____

Type: _____

Enter a valid valuation class on the Accounting screen. How do you determine the valuation classes allowed?

_____

_____

Valuation class: _____

The material is valuated using the standard price procedure.

The valuation price is UNI 10 per piece.

Field	Entry

This material is issued in cartons. You can maintain the unit of issue on the Storage screen. You did not select this view when starting to create the material master record. How can you access this screen?

_____

Enter the unit of issue.

Key for carton: _____

A carton contains 10 pieces. How do you enter the conversion factor?

_____

_____

What message appears when you finish creating your material master record?

_____

_____

2-4   Create purchasing data and accounting data for this material for plant 2000.

Enter the key for your purchasing group.

Can you change the purchasing value key? Why?

_____

_____

The goods receipt processing time is 2 days.

Enter a valid valuation class.

Field: _____

In plant 2000, the material is valuated using the moving average price procedure. The valuation price is £4 per piece.

Field	Entry
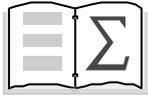
You are now able to:

- **Create and maintain material and vendor master records**

- **Explain the impact of organizational levels on the material and vendor masters**

Solutions

Unit: Master Data

Topic: Vendor Master Record

V-1 Organizational levels

(Logistics ® Materials Management ® Purchasing) ® Master Data ® Vendor

Organizational levels: *Client, company code, and purchasing organization*

Menu path: a) *® Central ® Create*   b) *® Purchasing ® Create*

V-2 Create vendor master record

(Logistics ® Materials Management ® Purchasing) ® Master Data ® Vendor ® Central ® Create

Vendor	*T-K12B##*
Company code	*1000*
Purchasing organization	*1000*
Account group	*LIEF*

Address	
Address data	*See default values*

Control, payment transactions	*Input not required*

Account Management (Accounting)	
Reconciliation account	*160000*

Payment transactions Accounting	
Payment methods	*SU*

Accounting correspondence	*Input not required*

Purchasing data	
Order currency	*UNI*
Terms of payment	*0002*
Incoterms	*FOB Mannheim*
Salesperson	*(Any)*
Phone no.	*(Any)*

V-3   **Change vendor master record**

(Logistics ® Materials Management ® Purchasing) ® Master Data ® Vendor ® Central ® Change

Vendor	*T-K12B##*
Company code	*1000*
Purchasing organization	*1000*

Company code data	☒ *Payment transactions*
Purchasing organization data	☒ *Purchasing data*

Payment transactions Accounting	
Payment conditions	*0002*

Purchasing data	
Automatically generated purchase orders	☑

Solutions

Unit: Master Data

Topic: Material Master Record

1-1 **Create material master record**

Logistics ® Materials Management ® Material Master ® Material ® Create (general) ® Immediately

Material	*T-RM2##*
Industry sector	*Mech.engineering*
Material type	*Raw material*

Select view(s)	*Basic Data 1, Purchasing, Purchase order text, General plant data/ Storage1*
Organizational levels	*Plant 1000 (Hamburg) Storage location 0001(Material store)*

Basic data	
Material description	Headlamp extra bright**-##**.
Base unit of measure	*Pc*
Material group	*003*
Gross weight	*4*
Net weight	*3.8*
Unit of weight	*kg*

® Additional data

Short text in other language (for example, German)	*Scheinwerfer Extrahell-##.*

Purchasing	
Purchasing group	*T##*
Purchasing value key	*1*
GR processing time	*1*

PO text	
English	*The delivered...*
® □ [Create text]® German	
German	Das gelieferte…

Plant data/Storage 1	
Storage bin	*BL-01*

1-2 Display material

Logistics ® Materials Management ® Material Master ® Material
® Display ® Display current

The system proposes the views below:
Basic Data (1 and 2), Purchasing views (Purchasing, Foreign Trade: Import, Purchase Order Text), General Plant Data/Storage (1 and 2), Plant Stock, Storage Location Stock

1-3 Extend material master record

Logistics ® Materials Management ® Material Master ® Material
® Create (general) ® Immediately

Material	*T-RM2##*
Industry sector	*Mech.engineering*
Material type	*Raw material*

Select view(s)	*Accounting1*
Organizational levels	*Plant 1000 (Hamburg)*

Accounting 1	
Valuation class	*3000 raw materials 1*
Price control	*V*
Moving ave. price	*80*

1-4   Copy material master record

® Material Master ® Material ® Create (general) ® Immediately

Material	*T-RM2##*
Industry sector	*Mech.engineering*
Material type	*Raw material*
Reference	*T-RM2##*

Select view(s)	*Basic Data 1, Purchasing, Purchase Order Text, Accounting 1 General Plant Data/ Storage1*

Organizational levels	*Plant 1200 (Dresden) Storage location 0001(Material store)*
Reference	*Plant 1000 (Hamburg) Storage location 0001(Material store)*

You have to go through each screen, choosing <ENTER> on each one, to make sure that all the data from the reference document has been copied. Save your material master record.

1-5   Change material master record

® Material Master ® Material ® Change® Immediately

Material	*T-RM2##*

Views	*Purchasing, Accounting1*
Organizational levels	*1200 (Dresden)*

Purchasing	
Post to insp. stock	☑

Accounting 1	
Valuation class	*3001 (raw materials 2)*
Price control	*S*
Standard price	*80*

1-**6**   **Display change documents for a material**

® Material Master ® Material ® Display changes
® Active changes

Material	*T-RM2##*
Plant	*1200*

To display the change documents, double click or choose the **[Magnifying glass]** icon.

1-7   **Enter material data for several storage locations**

® Material Master ® Other ® Enter storage locations

Material	*T-RM2##*
Plant	*1200*

Storage location	**Bin**
0002	*BL-02*
0003	*From-10*

1-8   **Materials list**

® Material Master ® Other ® Materials list

Material	*T-RM2##*
Plant	*1000 to 1200*

Solutions

Unit: Material master record

Topic: Display and Create a Material Master (optional)

2-1   Displaying a Material

    2-1-1   From the Material menu, choose Display → Display current

        Use search help "Material Number/Material Discription" (key M)

        Procedure:

- Press the icon with the arrow pointing downwards   or

- Press the F4 function key   or

- Press the right mouse key and choose Possible entries   or

- Enter '=m.hd' in the Material field (The entry 'hd' determines the materials whose description begins with 'hd.')

Depending on the procedure used or on a previously made selection, one of the following appears:

- Search help M (Enter the material description 'hd' and choose the material.)

- Another search help (Choose Other search help to switch to the Search Help Selection dialog box. Now choose search help M, enter the material description 'hd,' and choose the material.)

- Search Help Selection dialog box (Choose search help M, enter the material description 'hd,' and choose the material.)

- Selection of the materials found using the search help (Choose the material.)

Choose the material with the material description "HD Rear Shock Absorber".

What is the key of the material you require?

Material number: 1300-260

You want to display the data for the views Basic Data1, Purchasing, and Accounting1. Choose the views concerned. First choose plant 1000.

Select the views stated. Do not select other views. Enter plant 1000 as the organizational level.

2-1-2 The first data screen contains the basic data for this material. Write down the values contained in the following fields:

Base unit of measure	EA
Material group	001
Gross weight	2 KG
Division	02 (motorbikes)

How can you find out what the value in the Division field means?

- Press the icon with the arrow pointing downwards   or
- Press the F4 function key   or
- Press the right mouse key and choose "Possible entries"

Meaning: motorbikes

How can you display the definition and attributes of the Material group field?

- Press the icon with the question mark   or
- Press the F1 function key   or
- Press the right mouse key and choose Help

The help appears for the current field (present position of the cursor). By choosing Technical info, you can display information on the attributes of the field.

2-1-3 By choosing Enter you can access the next data screen of the views selected by you for this material. It contains purchasing data.

To which plant does this data apply?

Plant: 1000

Enter the corresponding values for the material in the following table. (For the time being, enter values only for plant 1000!)

	Plant 1000	Plant 2000
Purchasing group	001	001
Reminder 3	30	30
GR processing time	1	0

2-1-4 You want to view the data for this material for plant 2000. How do you access the dialog box for entering the organizational level?

Edit ® Organizational Levels

or Button: "Organizational Levels"

Do the values on the Basic Data screen differ from those determined in part 2-1-2 of this exercise?

No. Basic data is not plant-specific.

Is a plant specified on the Basic Data screen?

No. Basic data is not plant-specific.

Is a plant specified on the Purchasing screen? What does this mean?

Yes. Some purchasing data is plant-specific.

Enter the corresponding values for plant 2000 in the table contained in part 2-1-3 of this exercise. Compare the values for plants 1000 and 2000.

Consider/discuss the following questions in particular:

Which of these data fields are plant-specific?

Can you tell from the table whether the other fields are not plant-specific?

What possibilities do you have of finding this out nevertheless?

The purchasing group and the goods receipt processing time are plant-specific. The purchasing value key is managed at client level. You can only tell this from the table if the data is different in each of the plants. However, you can also obtain the required information as follows:

- Technical info: Data at client level is managed in table MARA, while data at plant level is managed in table MARC.

- If you do not specify a plant in the Organizational Levels dialog box, only the data at the higher level (client) is displayed. All other data is at the more specific level (plant).

- If a view allows a field to have different values for different organizational units (for example, for different plants), the data is managed at this level (at plant level in this case).

2-1-5 Choose 'Information on Materials' on the Material master screen.

They have been maintained decentrally. The different views have been created by different users.

2-1-6 You require information on the stock quantities of this material.

From a data screen choose

Environment ® Stock overview.

The stocks in the plants are displayed.

2-2 User-Defined Settings (Helps in Material Master Maintenance)

From one of the initial screens for displaying, changing, or creating a material master record, choose:

Defaults ® Industry sector	***Industry sector: Mechanical Engineering***
Defaults ® Views	***Select the above views.***
Defaults ® Org. levels	***Specify plant 1000 under Organizational levels and under Copy from.***

2-3 Creating a Material

2-3-1 Which views are selected?

The user-defined views that have been stored as defaults.

Select all of the views above.

You want to make sure that the material is created for plant 1000 and storage location 0001.

To do this, choose the Organizational Levels dialog box.

Which values are proposed?

The user-defined organizational units that have been stored as defaults.

2-3-2 When creating the material master record, take the following requirements into account: Write down the names of the fields in which you make an entry.

The material is known at your company as "Spiral Casing ##" (## = your group number).

Field: Material description (Basic Data view)

It is managed in stock as a piece.

Field: Base unit of measure EA (Basic Data view)

Assign the material to the material group 00201 (Casing).

Field: Material group (Basic Data- or Purchasing view)

Also enter the description in another language. (for example, in German "Spiralgehaeuse") How do you do this?

At the button bar in material master you find 'Additional Data'; choose "Descriptions". The language must be identified by the language indicator. (The language indicator for English is EN, and for German DE.)

On the Purchasing screen, enter 0## as the key for the purchasing group.

Field: Purchasing group

Entry: 0##

Enter a purchasing value key defining the following reminders and tolerances:

Field: Purchasing value key

Entry: 4 (Purchasing view)

The goods receipt processing time is 3 days.

Field: GR processing time

Entry: 3 (Purchasing view)

The material is a critical part.

Field: Critical part

Entry   X (Purchasing view)

Automatic material requirements planning (MRP) is not supported for this material. Enter an appropriate MRP type on the MRP screen.

MRP type   ND (no planning)

Enter a valid valuation class on the Accounting screen. How do you determine the valuation classes allowed?

- Press the icon with the arrow pointing downwards   or

- Press the F4 function key   or

- Press the right mouse key and choose Possible entries

Valuation class "7900" (semifinished products)

The material is valuated using the standard price procedure.

The valuation price is UNI 10 per piece.

Field	Entry
Price control	S
Price unit	1
Standard price	10

(Accounting view)

This material is issued in cartons. You can maintain the unit of issue on the Plant data / stor.1 screen. You did not select this view when starting to create the material master record. How can you access this screen?

Choose register Plant data / stor.1-view.

Enter the unit of issue.

Key for carton: CAR

A carton contains 10 pieces. How do you enter the conversion factor?

Dialog box appears automatically or by choosing

Additional Data ® Units of measure.

1 CAR	10 EA

What message appears when you finish creating your material master record?

'Last data screen reached.
You are about to exit. Do you want to save your data for this material first?'.

2-3 Create purchasing data and accounting data for this material for plant 2000

Can you change the purchasing value key? Why?

No. The purchasing value key is not at plant level and has already been created for plant 1000.
(If you want to change the purchasing value key, you have to start the transaction mm02 change material after creating this material for plant 2000).

Enter a valid valuation class.

Entry: 7900 (semifinished products)

In plant 2000, the material is valuated using the moving average price procedure. The valuation price is £4 per piece.

Field	Entry
Price control	V
Price unit	1
Standard price	4

(Accounting view)

:-)

Procurement of Stock Material

SAP

Contents:

- **Request for Quotation / Quotation Processing**
- **Purchasing Info Records**
- **Purchase Order Processing**
- **Goods Receipts into Quality Inspection**
- **Invoices with Unplanned Delivery Costs**

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**At the conclusion of this unit, you will be able to:**

- **Generate requests for quotation (RFQ) and enter and compare quotations**

- **Create a purchase order with reference to a quotation**

- **Post a goods receipt into quality inspection stock and release quality inspection stock for production**

- **Post an invoice with unplanned delivery costs**

- **Maintain purchasing info records in the R/3 System**

- **Valuate materials using the standard price and moving average price procedures**

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Procurement of Stock Material: Business Scenario

- **Your company is procuring various materials for the first time. You have to test the R/3 System's ability to deal with RFQs and quotations for these materials and its ability to determine the current market price.**

- **You are a member of the project team, testing how the R/3 System manages various conditions, freight costs, and material valuation procedures.**

Procurement Environment

8 Payment

1 Requirement determination

Requisition

2 Source determination

7 Invoice Verification

Vendor invoice · Purch.order 10 20 30 · ?

Procurement

6 Goods receipt

3 Vendor selection

Purch.order 10 20 30

5 Purchase order monitoring

4 Order processing

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Purchasing

Purchase requisition → Source of supply → RFQ → Vendor A / Vendor B / Vendor C → Quotation → Purchase order / Rejection letter

Master data

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- After establishing that a material or service is required, the Purchasing department needs to convert the purchase requisition into a purchase order. The R/3 System can support the Purchasing department using the requests for quotation in the source determination.

- First, you enter a request for quotation for the relevant material or the required service. You can enter the request for quotation manually or with reference to a purchase requisition. The second option has the advantage that the information already in the purchase requisition is copied directly to the request for quotation. Then you allocate the required vendors to the request for quotation. The system determines the address from the data in the respective vendor master record.

- You send the RFQs to the chosen vendors, who then send their quotations or rejection letters. You enter the quotations along with the conditions and delivery dates they contain with reference to the corresponding RFQ.

- You can determine the most favorable items or quotation by means of a quotation comparison.

- You also have the option of saving as purchasing info records the conditions of quotations in which you are interested.

Function Process: Creating RFQs

SAP

1 Initial screen

> Quot.deadline
> Purch. org.
> Purch. group

2 Header detail screen

> Collective

3 Item overview screen

> Material
> Qty
> Deadline

Item detail screen

> ....

4 Header: Vend.address

> Vendor-
> numbers or
> data for
> one-time vendor

Exit

Save

RFQs for several vendors

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- You can either enter RFQs with or without reference to a purchase requisition, another RFQ, or an outline agreement.

- You maintain the organizational levels and the deadline for submission of quotations on the initial screen.

- After you have filled out the initial screen, you enter the items for the RFQ.
  You can enter an RFQ for vendors with a master record or for one-time vendors. With a one-time vendor, you must enter the address in the RFQ.

RFQ campaign = common collective number

| RFQ 1	RFQ 2	RFQ 3
Vendor A	Vendor B	Vendor C
Material 1	Material 1	Material 1
Material 2	Material 2	Material 2
Material 3	Material 3	Material 3
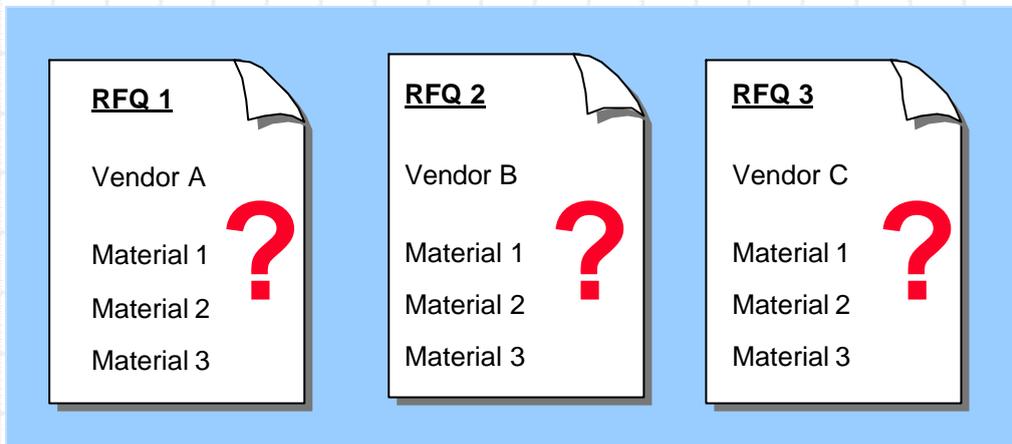
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- You can link a number of RFQs that belong together with the help of the collective number. You enter the collective number in the header data of the RFQ and can use it to select your RFQs and quotations (for example, for the price comparison or other analyses).

- The collective number can have a maximum of ten characters and can be alphanumeric.

Quotation Processing

SAP

1. **Enter price and conditions**

Vendor A	Vendor B	Vendor C
Quotation for RFQ 1	Quotation for RFQ 2	Quotation for RFQ 3
Item 10	Item 10	Item 10
Gross price: 400/t	Gross price: 400/t	Gross price: 500/t
Discount: 50 UNI	Surcharge: 20%	Fixed costs: 40 UNI

2. **Compare quotation with price comparison list**

Steel 2 t

Price

350/t	480/t	520/t	450/t

Quotation 1 Quotation 2 Quotation 3 Mean value quotation

Market price

3. **Create info record or reject quotation**

Purchase order

Piece % UNI
1

Info record

Rejection letter

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- The quotation contains a vendor's prices and conditions for the materials or services specified in the RFQ. In the R/3 *Purchasing* component, RFQs and quotations are a single document. You enter the prices and conditions stated by the vendor in the original RFQ.

- You can compare quotation data by using the quotation price comparison list. The quotation price comparison list shows the most reasonable vendor for each item individually and for all items.

- You can save quotation data in which you are interested in a purchasing info record. The info record can be generated automatically if you set a valid info update indicator when you maintain quotations.

- You can create a purchase order with reference to a quotation.

- You can set a rejection indicator for quotation items in which you are not interested. This allows the system to issue rejection letters.

- The mean value of the quotations can be saved as the market price in the quotation price comparison list. The market price is used as the basis for valuating the price level of a vendor and is called up for vendor evaluation.

Conditions		
Key	Description	Amount
PB00	Gross price	10.00 UNI
FRA1	Freight	5.0%
RA00	Discount from net	8.0%
ZOB1	Abs. customs duty	3.00 UNI

Quotation

Purch.ord.

Outline agreement

Info recd
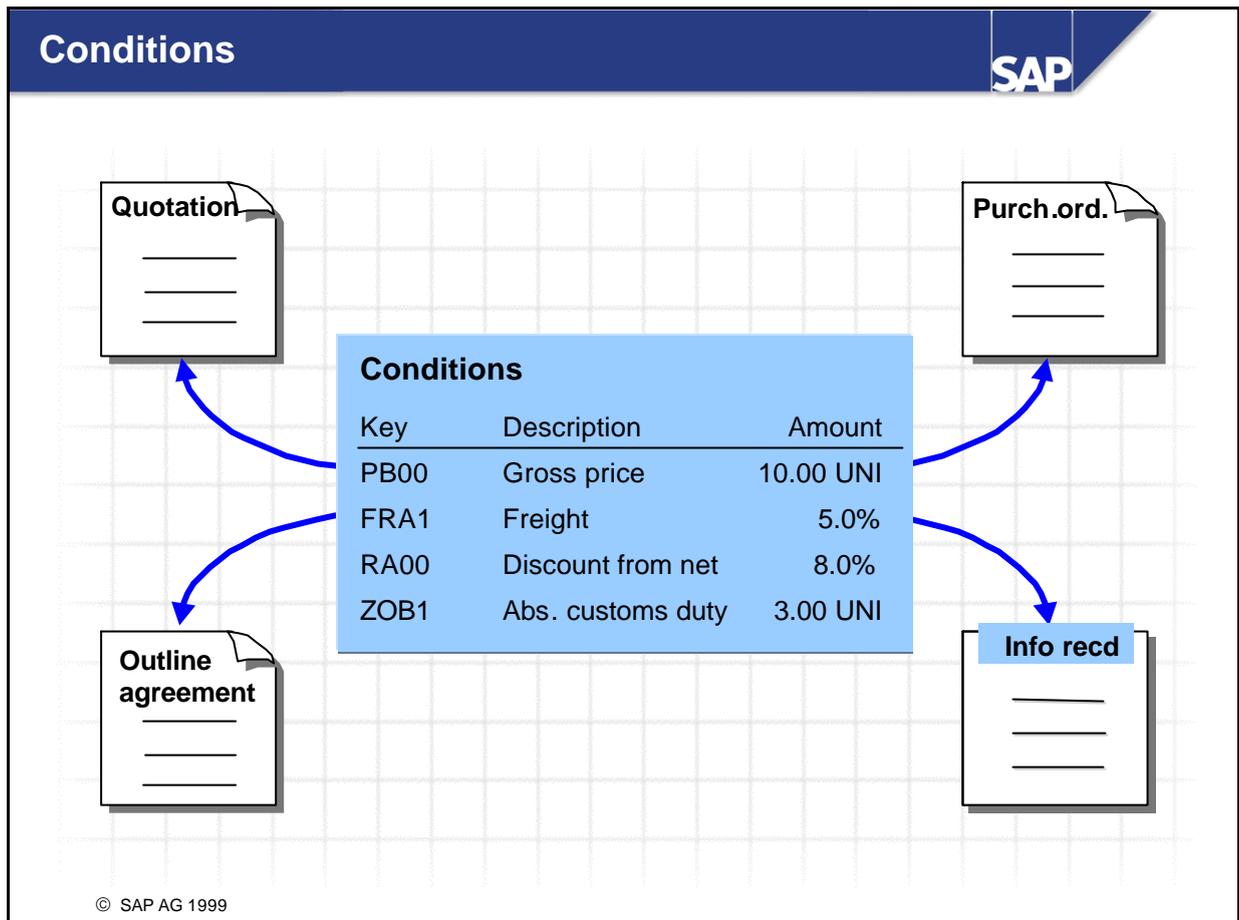
■ Conditions are used in purchase orders to determine price.

■ The following types of conditions are used in Purchasing:

- Conditions in a contract apply to all contract release orders created with reference to this contract.

- Conditions in a purchasing info record apply to all purchase order items that contain the material and vendor contained in the purchasing info record.

- Extended conditions are only included in the purchase order if they meet certain criteria. For example, you can use extended conditions to define vendor discounts or include discounts for a material type. Extended conditions are more flexible than conditions in info records or contracts in that you can define which criteria must be met if the conditions are to apply to purchase orders.

Purchasing Info Records

Info record 5300000816

Vendor: 1234
Material: A21
PurchOrg: 3000

_____

Conditions
Price/UoM 6 UNI / kg
Freight   2%
Discount   4%

Last purchase order
4500006398

Screw A21

Vendor 1234
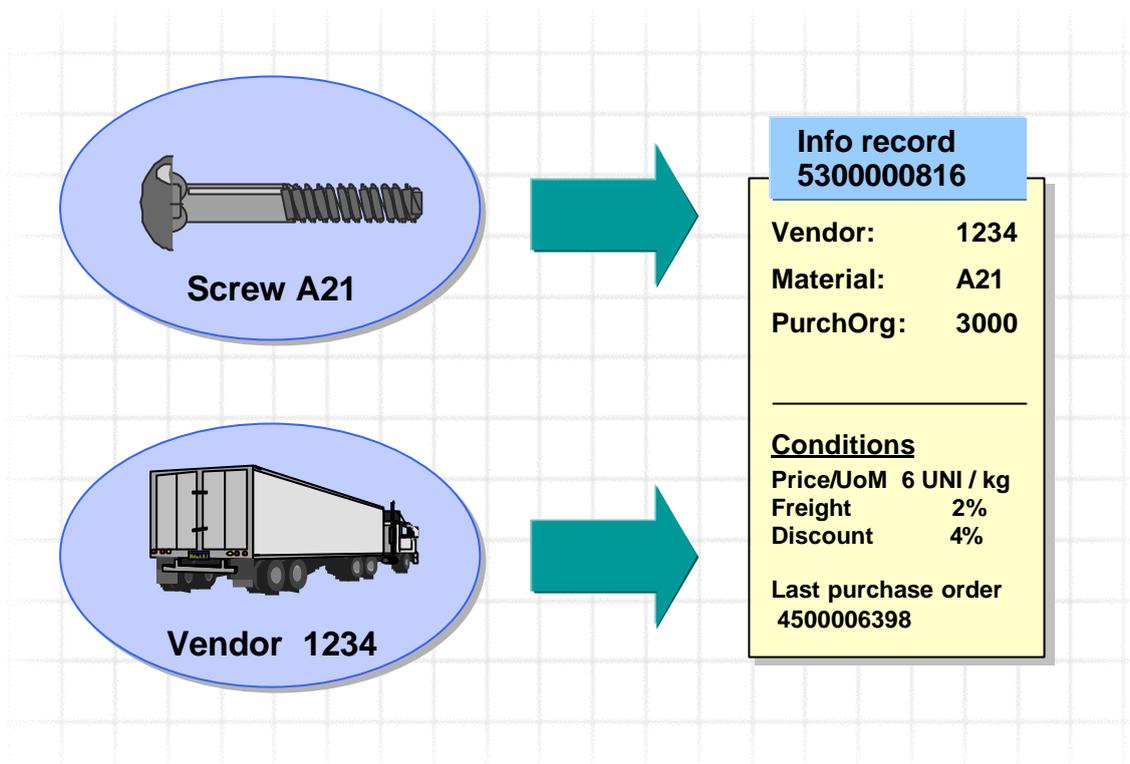
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- Purchasing info records contain concise information on a vendor and the material you procure from this vendor.

- The purchasing info record is an important source of information for the buyer, enabling him or her to determine via list displays which vendors offer a particular material, or which materials can be procured from a particular vendor.

- You can store and maintain the following data in info records:

  • Current and future prices and conditions (for example, freight and discounts)

  • Delivery data (for example, planned delivery time and tolerances)

  • Vendor data (for example, contacts)

  • Texts.

- When you create purchasing documents (for example, purchase orders or contracts), the system displays data maintained in info records as default values.

Options for Maintaining Info Records

Manual

Quotation
10 _____
20 _____
30 _____

Purchase order
10 _____
20 _____
30 _____

Outline agreement
10 _____
20 _____
30 _____

Info record 5300000816

Vendor: 1234
Material: A21
PurchOrg: 3000

_____

Conditions
Price/UoM 6 UNI / kg
Freight   2%
Discount   4%

Last purchase order
 4500006398

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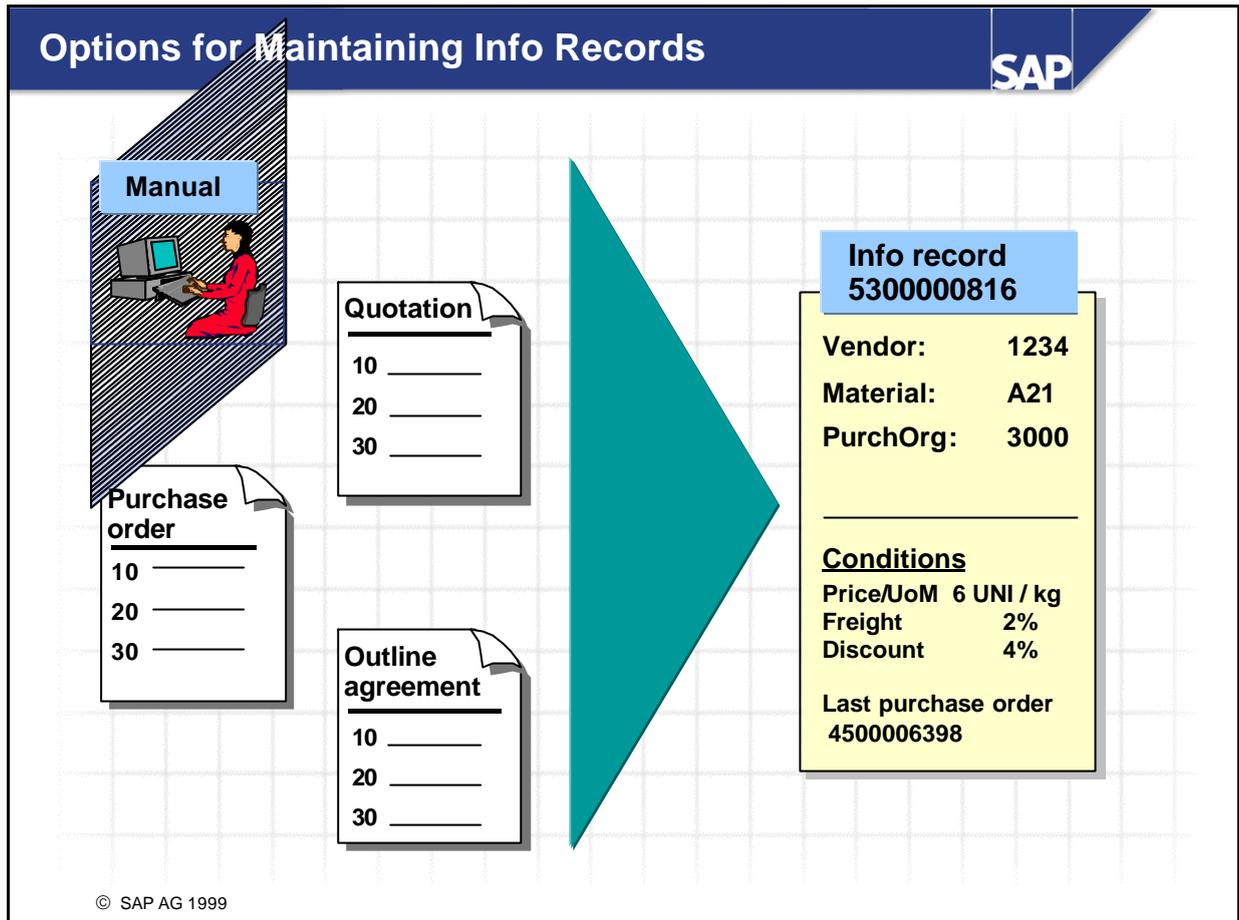
- You can maintain info records manually or automatically from quotations, purchase orders, or outline agreements.

Info Update Indicator: Quotation, Outline Agmnt

SAP

Contract

Quotation

1 pc M-01
= UNI 500

Discount   4 %

[?] InfoUpdate

At purch. org.
or
purch. org./plant
level

Update

Info record

Vendor: 1234
Material: M-01
PurchOrg: 1000
Plant: ?

Conditions
Price/Un UNI 500 /pc
Discount   4%

Last purchase order
4500006398

Info update indicator

	No update
A	Update with or without plant
B	Update with plant (if plant not prohibited)
C	Update without plant (if plant not prohibited)

+ Customizing

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Exercises

Unit: Procurement of Stock Material

Topic: Request for Quotation/Quotation Processing
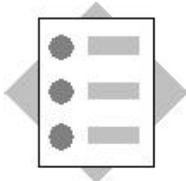
At the conclusion of this exercise, you will be able to:

- Create requests for quotation (RFQ) for regular customers and one-time vendors

- Maintain and compare quotations in the system

- Display and print RFQs and quotations
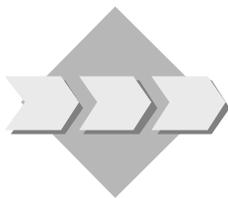
To get the best purchase price for your headlamp, you send RFQs to several vendors. Of these vendors, there is one vendor with whom you have had no dealings before.

1-1   Create RFQs

Create RFQs for a base quantity of 100 pieces of the material **T-RM2##** from the following vendors: You enter the RFQs under the collective number **GR##**.

You have heard of a prospective new vendor, with whom you have never had any business dealings (one-time vendor). You send an RFQ for the headlamps to see how efficient this vendor is. You send another RFQ to your previous main vendor T-K12A##. You also create an RFQ for vendor T-K12B##.

Use the following information:

Date of RFQ:	**Current date**
Quotation deadline:	**Current date + 2 weeks**
Purchasing organization:	**1000**
Purchasing group:	LO020-## (**T##)**
Delivery date:	**Current date + 1 month**
Plant:	*(No plant)*

If you create an RFQ for a particular plant, and reference the quotation when you create the purchase order, you can no longer change the plant that is specified in the purchase order. In the RFQ, you should therefore only specify a plant if you do not intend to procure the item for other plants.

On the screen for the vendor address:

Vendor 1: **1950 (one-time vendor)**

Enter any address for the one-time vendor.

Example: Company
             Schmidt Beleuchtungswerke GmbH
             Himmelsgasse 7
             67346 Speyer

RFQ number:

Vendor 2: **T-K12A##   (Motolux GmbH Gr.##)**

RFQ number:

Vendor 3: **T-K12B##   (Rasch Gr.##)**

RFQ number:

1-2   Display and print RFQ

Display the RFQ for your main vendor **T-K12A##** as a printout (message) on your screen. Print the RFQ. You can also print your other two RFQs if you wish.

1-3   Enter quotations

You have received the quotations for your RFQs. Maintain the quotations in the system.

Make sure that the info update indicator "C" is set on the detail screen for the quotation items.

This ensures that an info record is created for each quotation. If an info record already exists for an item, you update the info record based on the quotation conditions.

One-time vendor:

Material costs: 79 UNI/pc
Conditions: Discount from gross price (RA01) 3 %
   Absolute freight (FRB1) 100 UNI
Delivery date: [Current date + 6 weeks]

Vendor T-K12A## (Motolux GmbH Gr.##):

Material price: 90 UNI/pc
Conditions: Discount on gross price (RA01) 15 %
Delivery date: [Current date + 1 month]

Vendor T-K12B## (Rasch Gr.##):

Material costs: 82 UNI/pc
Conditions: Discount on gross price (RA01) 10 %
Delivery date: [Current date + 1 month]

1-4 Compare prices

1-4-1 Compare the prices of the quotations to determine the most reasonable supplier.
Select the quotations for comparison via the collective number **GR##** and purchasing organization **1000**.
Display the mean value quotation using the quotation price comparison list and choose the effective price.

Determine the most reasonable quotation.

Vendor:_____ Effective price:_____

1-4-2 Vendor T-K12A## has just informed you that due to demand the delivery time is 6 weeks rather than 1 month. Change the quotation. To do this, go directly from the price comparison list to the quotation and maintain the delivery date.

1-4-3 Once you have checked the quotations again, set the rejection indicator for the two quotations you do not want to include.

1-5 Print rejection letters

Send one of the two rejection letters. Look at the letter on the screen before you print it out. Is the letter marked as a rejection letter? If it is not, re-check the rejection indicator as in exercise 1-4.
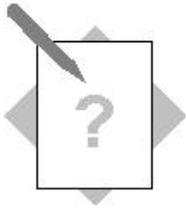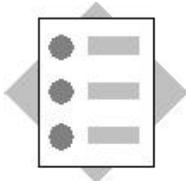
Exercises

Unit: Procurement of Stock Material

Topic: Purchase Order

At the conclusion of this exercise, you will be able to:

- Create a purchase order with reference to a quotation

You want to order the headlamp from the most reasonable vendor. To minimize data-entry time, you reference the vendor's quotation when you create the purchase order.

2-1 **Purchase order with reference to RFQ**

For plants **1000** (Hamburg) and **1200** (Dresden), you need **100 pieces** of the material **T-RM2##, headlamp extra bright-##**.

With reference to the most reasonable quotation, create a purchase order for the purchasing organization **IDES (1000)** and plant **1000** (Hamburg). The system proposes all the data contained in the quotation, such as the quantities and conditions.

Add a second item for 100 pieces of the same material for plant **1200** (Dresden). The other data is the same as that used for item 10 (standard taillight).

Make sure that the info update indicator is set for both order items.

Save your purchase order.

PO number:

2-2 **Determine status of message**

Display the purchase order and determine whether the purchase order has already been issued as a message. If the message has not yet been sent, print the document and then check the status of the message again.

2-3   Change purchase order

The sales employee responsible has informed you by phone that the price has been reduced further. The **gross price** for material **T-RM2##** is **80 UNI** for this purchase order. The remaining conditions are unchanged. Change your purchase order accordingly.

2-4   Display purchase order

Display the purchase order and answer the following questions.

2-4-1   Which user created the purchase order?

Created by: _____

2-4-2   Which user changed the order item?

Changed by: _____

2-4-3   When were the order items changed?

Changed on: _____

2-4-4   What has been changed?

_____

2-4-5   Where in the system is the RFQ number linked with the purchase order items stored?

_____

2-4-6   Is there a purchase order history for both items?

Give reasons for the result.

_____

_____

2-5   Display changed purchase order as a message

Display a printout (message) on your screen of the change to the purchase order. Is the message flagged as a change message, and are the changes listed in the document?

SAP

General data
Vendor data (reminder data, vendor's material no….)
Origin data
Order unit (conversion...)
*Internal info record memo*
Administrative data
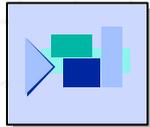
Purchasing organization data
Control (delivery time, minimum quantity ...)
Prices & conditions (gross price, discount, freight ...)
*Statistics* (Price history, PO statistics ...)
Texts (purchase order text ...)
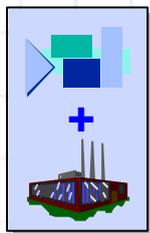
Purchasing organization / plant data
Control (delivery time, minimum quantity ...)
Prices & conditions (gross price, discount, freight ...)
Statistics (Price history, PO statistics ...)
Texts (purchase order text ...)

Purchasing info record

Ⓒ SAP AG 1999

- A purchasing info record contains general data that is valid for every purchasing organization or every plant.

- It also contains data (for example, prices and conditions) that is only valid for the relevant purchasing organization or relevant plant. You configure whether conditions are permitted at plant level.

- When you create a purchase order, the system searches for an info record for the purchasing organization/plant combination. If there is no such info record, the system searches for the purchasing organization only.

- In the standard system, the following type of texts are set in the purchasing info record:

  • Internal info memo record: this is an internal comment that is copied to the purchase order item. This text is not printed out.

  • PO text in the purchasing info record: this is used to describe the PO item. It is copied to the purchase order item and printed out.

 You can configure other types of text.
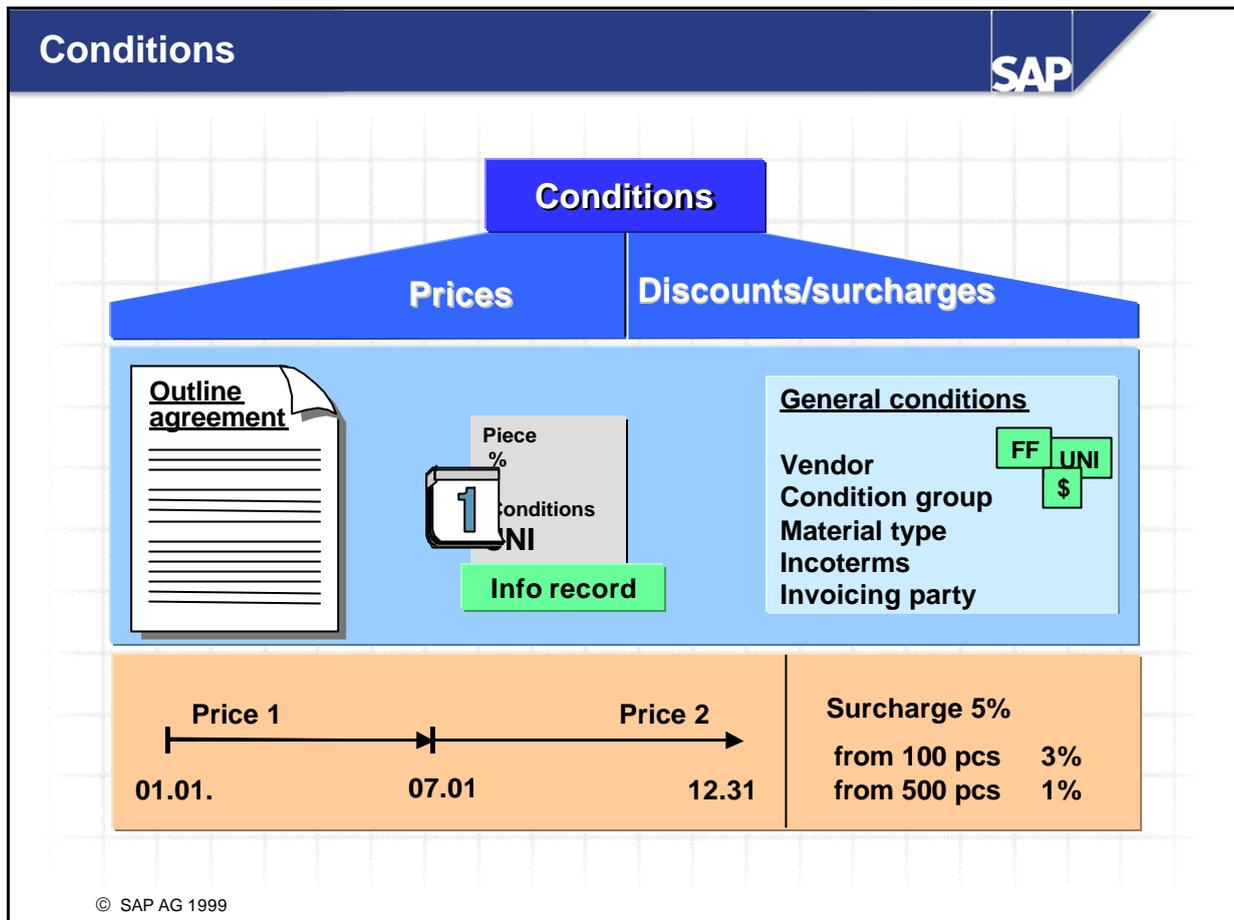
Conditions

- Conditions are stipulations agreed with vendors concerning prices, discounts and surcharges, and so on. The effective net price in purchase orders is determined on the basis of these conditions.

- You can maintain conditions when you create quotations, info records, outline agreements, and purchase orders.

- Conditions in info records, contracts, and extended conditions are time-dependent conditions. Conditions in purchase orders are time-independent conditions.

- Time-dependent conditions are also available for quotations and scheduling agreements if you set the time-dependent conditions indicator for the document type in Customizing.

- Extended conditions provide you with the option of specifying time-dependent conditions independently of outline agreements and info records.

- Time-dependent conditions can be restricted to a certain period of validity.

- If, for example, a vendor's prices vary according to quantity, you can enter the pricing data in the form of a price/quantity scale.

- You can enter conditions in the document header or in the item details. Item conditions apply to one item only. Header conditions apply to all the items in the document.

Updating an Info Record Automatically

Quotation
No. 6000014

1 pc M-10 = 500 UNI
Discount 4 %

☐ Info update

Purch. order
No. 4500006398

1 pc M-10 = 500 UNI

... Info update

**Info record
5300000816**

Vendor: 1234
Material: M-10
PurchOrg.: 1000

_____

Conditions
Price/Un UNI 500/pc
Discount 4%

Last purchase order
4500006398
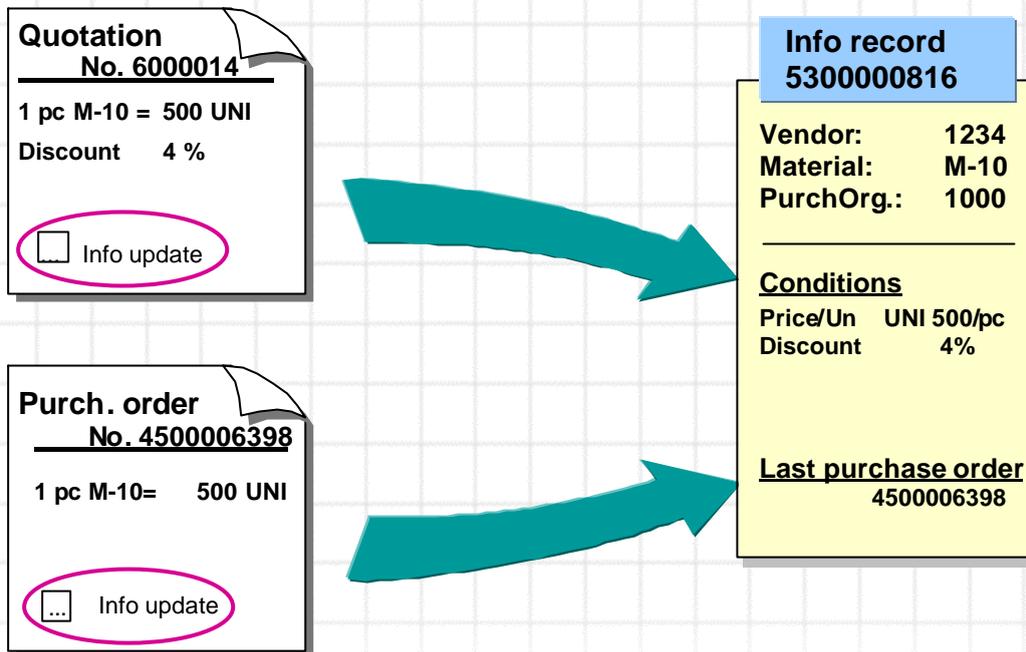
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- When you create or change quotations, contracts, and purchase orders, you can use the info update indicator to define that the info record is to be created or updated.
- The system copies the conditions from the quotations to the info record.
- The document number from a purchase order or contract release order is updated as the last purchasing document.
- If no info record exists for the combination of vendor, material, and organizational level when you create or change a contract, the system creates an info record with the conditions from the contract.

Info Update Indicator: Purchase Order (ME21N)

SAP

Purch. ord.

1 pc M-01
= UNI 600

? InfoUpdate

At purch. org.
or
purch. org./plant
level

Update

Info record

Vendor: 1234
Material: M-01
PurchOrg: 1000
Plant: ?

Conditions
Price/Un UNI 500 /pc
Discount 4%

Last purchase order
4500006398

Info update indicator

  No update
  Update

+

Customizing: Define control of conditions at plant level

  Conditions allowed with or w/o plant
+ Only plant-based conditions allowed
– No plant-based conditions allowed
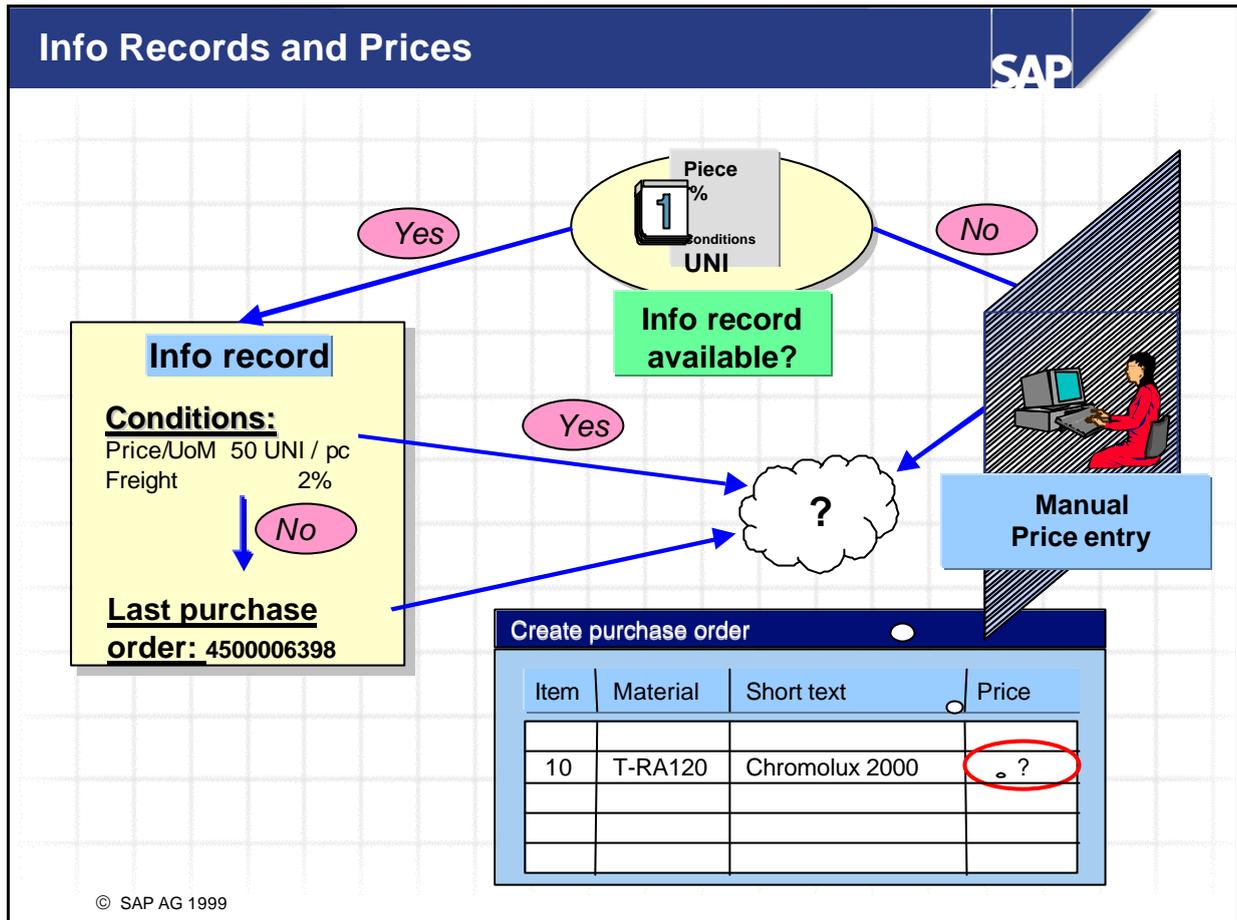
Info Records and Prices

Purchasing info records determine the prices suggested in purchasing documents in two ways:

■ Conditions:
Conditions are included if they have been maintained for an info record manually or from a quotation.

■ Last purchase order:
If an info record does not contain any conditions, the system reads the number of the last purchasing document in the info record and then suggests the price from this document. In the default values for buyers (Customizing), you can define how the system handles conditions from the last purchase order.

You can define that the conditions from the last purchase order:

● Are always copied

● Are not copied when the price is entered manually

● Are never copied
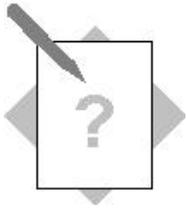
Exercises

Unit: Procurement of Stock Material
Topic: Info Records
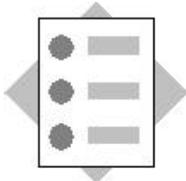
At the conclusion of this exercise, you will be able to:

- Create, change, and analyze info records
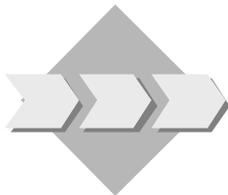
To help you determine sources of supply and determine prices, you can store information for specific material-vendor relationships in the system. Depending on the vendor and the purchasing organization, you can enter conditions, such as freight costs, discounts, planned delivery times, and delivery conditions.

3-1   Display info record

The system automatically updated the relevant info records because you set the info update indicator when you maintained your quotations and created the purchase order.

Display the info record that was created for material **T-RM2##** and vendor **T-K12B##** for purchasing organization **1000**.

3-1-1   When and by whom was the info record created?

_____

3-1-2   What is the info record number?

_____

3-1-3   Do conditions exist for this info record?

_____

3-1-4   What is the number of the last purchase order?

_____

3-1-5   Compare the conditions in the info record with those in the last purchase order. How are the conditions in the info record obtained?

_____

3-2   Info record list display

Display all info records that are stored in the system for material **T-RM2##** and purchasing organization **1000**. While doing so, determine the effective prices from the quotations and purchase order.

Vendor			
Origin of price			
Effective price			

Why was no info record created for the one-time vendor?

3-3   Change info record

The vendor **T-K12A##** sends you new purchasing data and conditions for material **T-RM2##**. Change the info record for this vendor and this material in accordance with this data.

The average delivery time (planned delivery time) is **10 days**. In addition, the vendor accepts only purchase orders for quantities above the minimum quantity of **50 pieces**.

As of today, the conditions will change as follows:

Validity period: **1 year**

Gross price: **85 UNI**

Discount from gross (RA01): **15% from 50 pieces upwards**

18% from 200 pieces upwards

3-4   Questions

Finally, answer the questions below:

You want to order 20 pieces of the material **T-RM2##** from the vendor **T-K12A##**. Is this possible? What message does the system issue?

_____

What net price would you have to pay per piece if you wanted to order the following quantities of material **T-RM2##** from vendor **T-K12A##**?

20 pieces	50 pieces	150 pieces	320 pieces

Valuated Goods Receipts

GR area

101 → Unrestricted-use stock

101 X

101 S

Quality inspection stock

Blocked stock
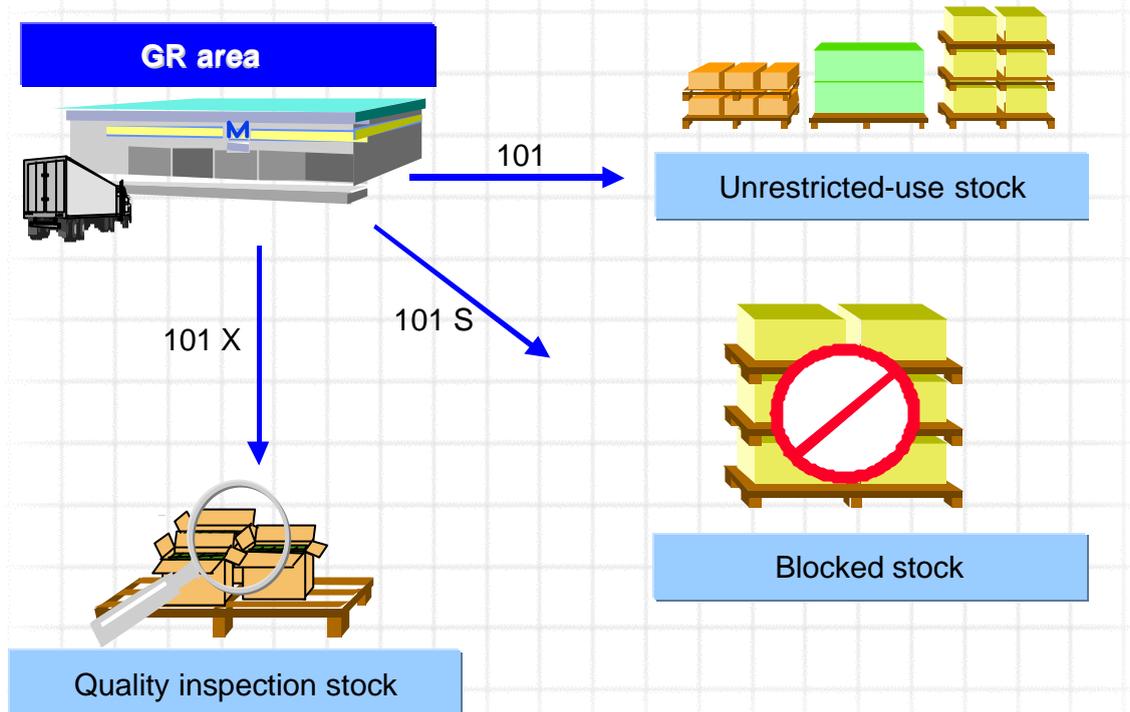
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- For goods receipts, you decide the stock type to which a quantity is posted. The stock type is relevant for determining the stock available in Materials Planning and is used for withdrawals in Inventory Management.

- You can post a goods receipt for the warehouse into three stock types:

  • Unrestricted-use stock (no usage restrictions).

  • Quality inspection stock (available from an MRP perspective, but no withdrawals are possible).

  • Blocked stock (not usually available from an MRP perspective and no withdrawals are possible).

- In the purchase order, you can plan in advance whether the material is to be posted to quality inspection stock. When the goods are received, you decide the stock type to which the material is posted.

- You always use movement type 101 to post goods receipts for a purchase order into valuated stock. A stock indicator you can enter on the item screen for goods receipt processing enables you to differentiate between different stock types.

- For valuated goods receipts, the system creates an accounting document, as well as a material document. At the same time, it updates the purchase order history.

Transfer Postings

Quality inspection stock

322
321

350   349

Unrestricted-use stock

344
343
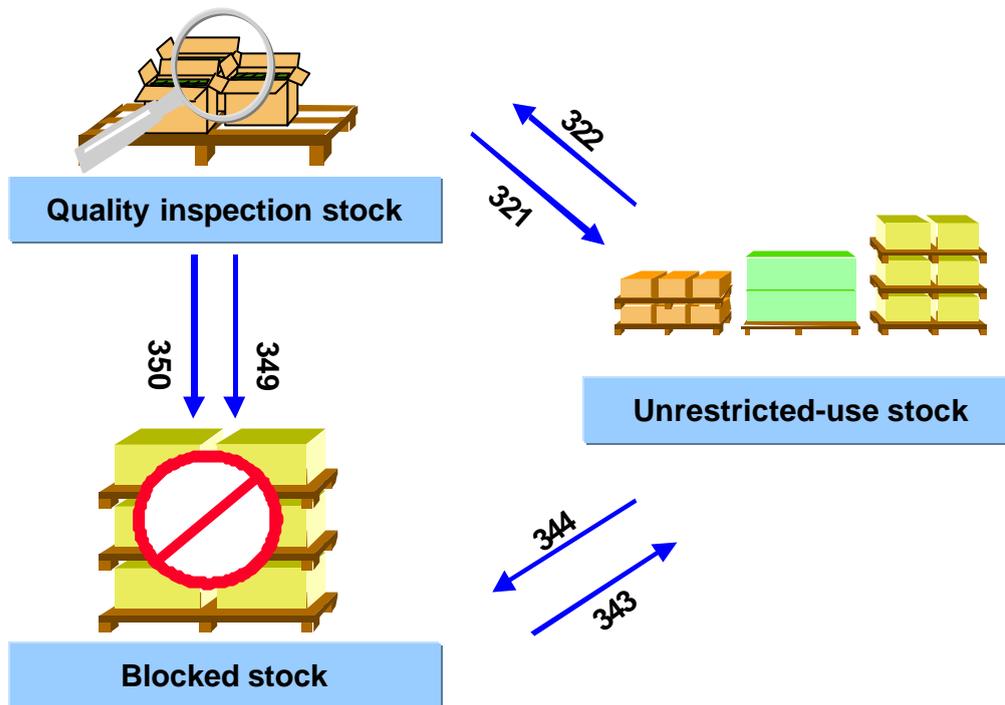
Blocked stock

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- You can only post withdrawals for consumption from unrestricted-use stock. From quality inspection stock and blocked stock, you can only withdraw a sample, scrap a quantity, or post an inventory difference.

- If you want to withdraw goods from blocked stock or quality inspection stock, you have to carry out a transfer posting into unrestricted-use stock first. This also applies to stock transfers.

- When you carry out a transfer posting, the stock type, batch number, or material number is changed. A transfer posting may also involve an actual physical stock transfer.

- The system creates a material document so that the transaction can be entered. The system only creates accounting documents if a change in valuation is involved (for example, stock transfer from plant to plant).

- You use the movement type to control the stock types involved in the transfer.

Documents for Goods Movements

Warehouse

Goods movements

Receipts

Withdrawals

Material document

Accounting document

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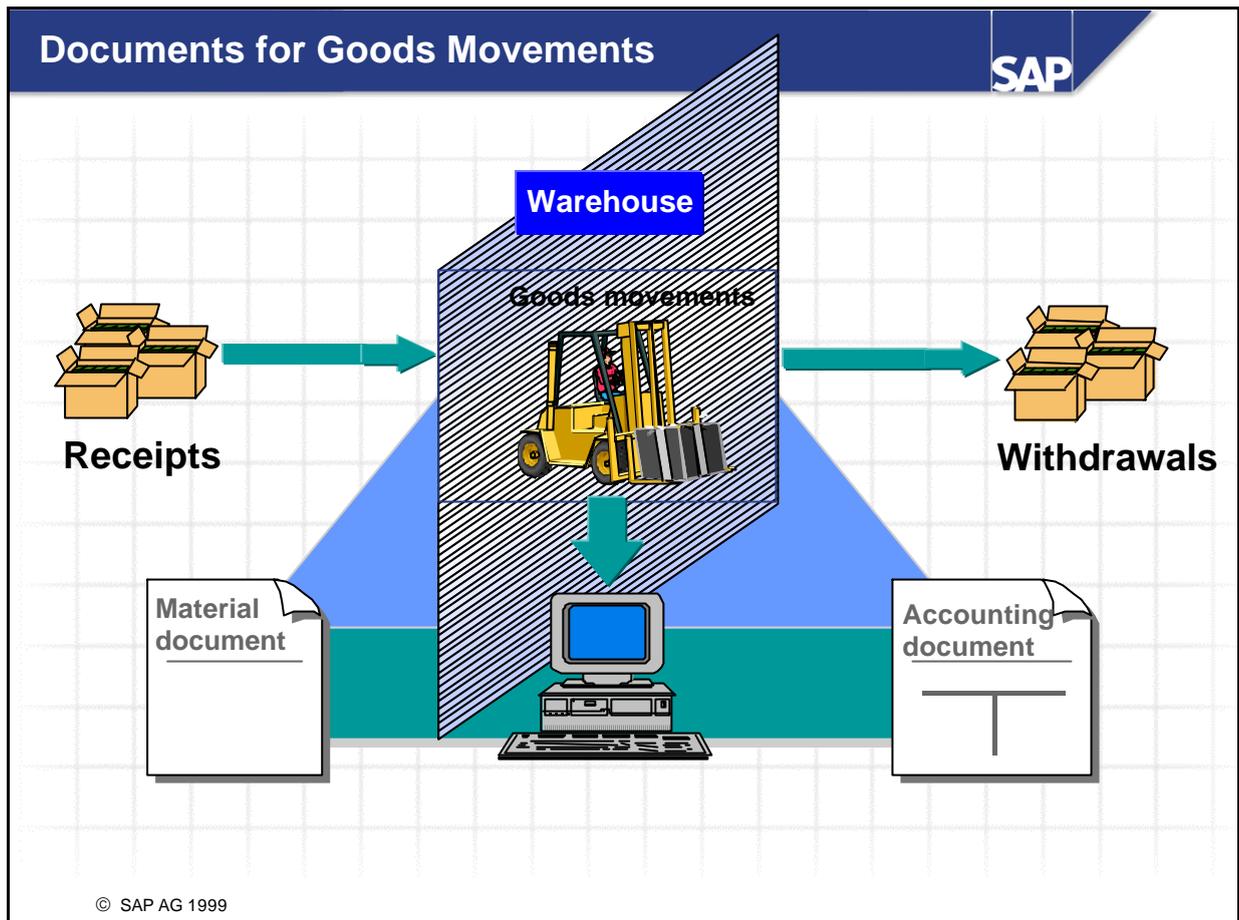
- The document principle also applies in IT-based Inventory Management. A document is proof that a transaction involving stock changes has taken place. It is stored in the system.

- A material document is created in the R/3 System as proof of a transaction involving stock changes.

- If the goods movement is relevant to valuation, the system creates at least one accounting document in addition to the material document.

- Goods movements (goods receipts, goods issues, or transfer postings) are relevant to valuation when your company's Accounting department is affected by them. For example, a goods receipt posting of a raw material usually results in an increase in the stock value of your current assets. If the raw material is only transferred within one plant, no postings are made in Financial Accounting.

- As soon as a goods movement is posted, the quantities, material, movement type, and organizational level can no longer be changed. You can only make changes to some text fields. If you want to correct errors, you have to create a new document. You have to cancel/reverse the incorrect document beforehand.

Material and Accounting Documents

SAP

Material document	

Document header

Material document 49000757
Date 04 July, 1999
Name Miller

Document items

	Qty	Material	Plnt	MvT
001	10 L	Paint	1000	101
002	25 pcs	Aluminium	1000	101

Accounting document	

Document header

Accounting document
4900000642
Date 04 July, 1999
Currency

Document items

|	Account	Short text	UNI
001	300010	Stock	75+
002	300000	Stock	1000+
003	. . .		

The material and accounting documents for a goods movement are created simultaneously.

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- The material document consists of a document header and at least one item. The header information includes the posting date and the name of the person who created the document. At item level, the material document records the quantity, the material, and the storage location to which the material is posted in the associated plant.

- The accounting document records the effects of goods movements on the accounts. The document header contains general data, such as the document date, posting date, posting period, and document currency. The G/L account numbers and the associated amount posted are recorded at item level.

- The material and accounting documents are independent documents. You can identify the material document by the material document number and the material document year. The accounting document can be clearly identified by the company code, accounting document number, and fiscal year. The company code in which the accounting document is posted is taken from the plant in which the goods movement takes place.

Effects of a Goods Receipt

Delivery

Goods receipt

Purchase order and PO history updated

Material master — Stock and value updated

Acctg document

Material document — Movement documentation

Notification of goods receipt (optional)

GR slip

Hard copy (optional)

QM — Creation of an inspection lot to trigger a quality inspection

Transfer request to warehouse management (if active)

WM

Stock and consumption accounts updated

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■ The diagram once again shows an overview of all the key effects of a goods receipt referencing a purchase order.

Stock Overview

		Client 400
Client		4600 pieces

Company code	Co. code 2000	Co. code 1000
	2500 pieces	2100 pieces

Plant	Plant 1000	Plant 1100
	1200 pieces	900 pieces

Storage location	SLoc 0001	SLoc 0002
	300 pieces	600 pieces

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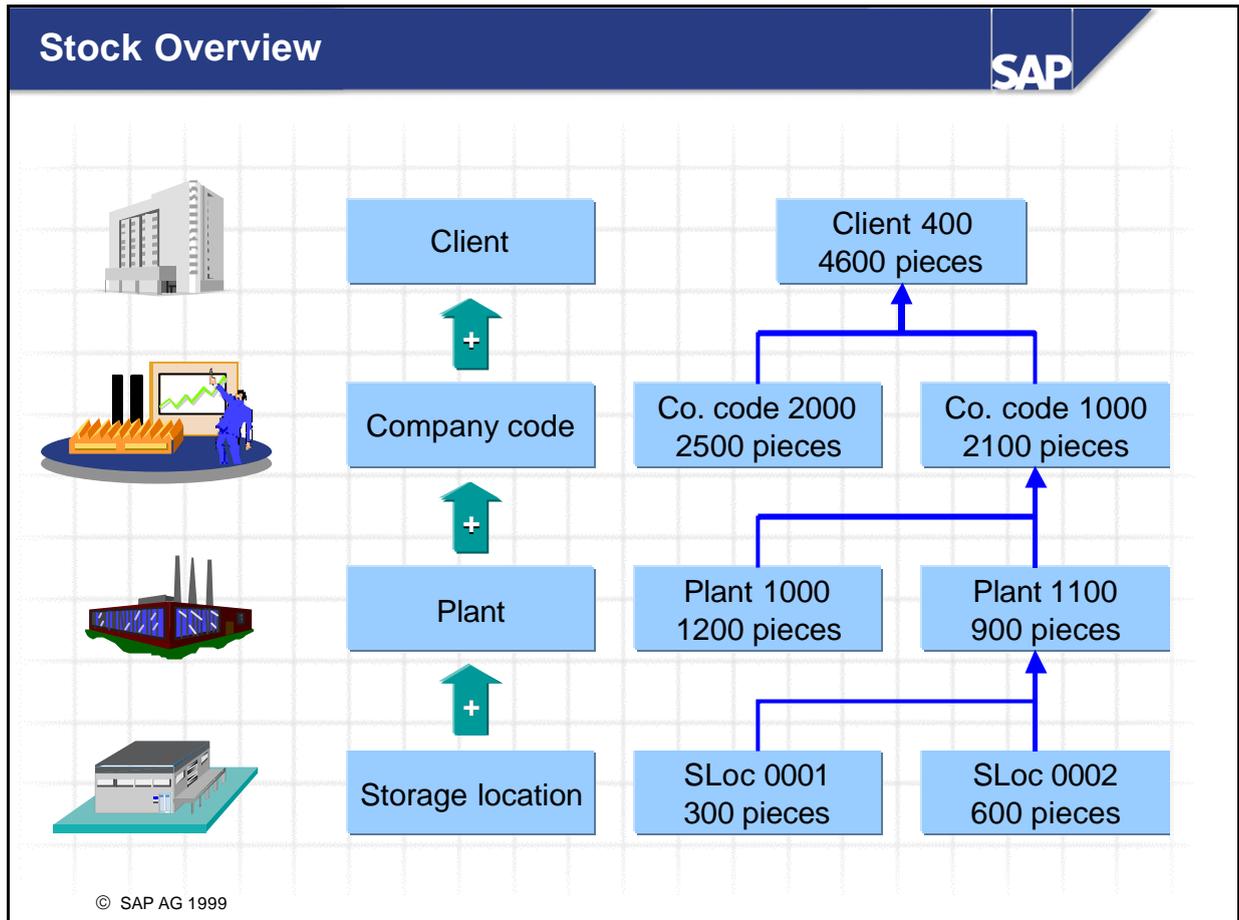
- The material stocks are displayed in the stock overview for each individual organizational level. Quantities posted for a particular stock type are totaled for each organizational unit.

- You can display the stock overview for batches/valuation types and special stocks (for example, consignment material), as well as for the client, company code, plant, and storage location.

- The stock overview is a static display of stocks. This means that you can only view the current stock situation. You cannot see future planned goods receipts and goods issues in this list. But you can call up additional information functions via the menu bar.

- There are several display versions for stock overviews, which vary in the way the stock types are listed and in the order they appear. In Customizing for Inventory Management, the system administrator defines which stocks are displayed in each column and the order in which they are displayed.

Valuation Area

SAP

Valuation area

Company code

Plant

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- The valuation area is the organizational level at which material is valuated. Plant and company code are two possible valuation areas in the R/3 System.

- When stock is valuated at plant level, you can valuate a material in different plants at different prices.

- When you valuate stock at company code level, the valuation price of a material is the same in all of a company's plants (that is, in a company code).

- SAP recommends that you valuate material at plant level. Valuation at plant level is mandatory if you want to use either of the Production Planning or Product Cost Accounting components, or if your system is a Retail system.

- **Caution:** Defining the valuation level in Customizing is a fundamental setting, and is very difficult to reverse.

Valuation Class

SAP

Material type
Valuation class 1
Valuation class 2

Accounting 1

Valuation class

Material master

300000

300100

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- You can use the valuation class to combine materials for assigning G/L accounts so that you do not have to manage a separate stock account for each material.

- You maintain the valuation class in the Accounting view of the material master record. The valuation class allowed for a material depends on the material type, and can be configured in Customizing.

- In automatic account determination, the R/3 System works with valuation classes. The valuation class is used to determine which stock account is to be updated upon goods movements.

Material Valuation Procedures

Material valuation

Price control (in material master)

"S" Standard price

"V" Moving average price

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- Valuation of goods receipts depends on the price control procedure you set in the material master record. In the R/3 System, material valuation can be carried out according to the moving average price procedure (V price) or the standard price procedure (S price).

- In the standard price procedure (price control "S"), the system carries out all stock postings at a price defined in the material master. Variances are posted to price difference accounts.

- In the moving average price procedure (price control "V"), the system valuates goods receipts with the purchase order price and goods issues with the current moving average price. The system automatically calculates the latter upon every goods movement by dividing the total value by the total stock quantity. Differences between the purchase order price and the invoice are posted directly to the relevant stock account if there is sufficient stock coverage.

Valuation of Goods Receipts

SAP

V (Moving average price) = value / quantity

Stock account		GR/IR	
250			250

Amount from purchase order

Accounting 1

Price control ☐

Material master

S (Standard price) = fixed

Stock account		GR/IR	
200			250

Standard price * quantity   **Amount from purchase order**

Price difference	
50	

- You set the material valuation procedure you want to use in the accounting view of the material master record. In the R/3 System, you can carry out material valuation using the standard price procedure or moving average price procedure.

- Irrespective of the valuation procedure set in the material master record, the system increases the stock quantity by the relevant goods receipt quantity when you post a goods receipt into stock.

Example: Posting at Standard Price (1)

Material Master Record: Valuation Data

	Transaction	Stock	Total value	Standard price	Moving ave. price
(1)	Initial situation	100	200.00	2.00	2.00

Financial Accounting: Account Movements

Stock account	GR/IR clearing account	Vendor
(1) 200		

Income from price differences	Expenditure from price differences
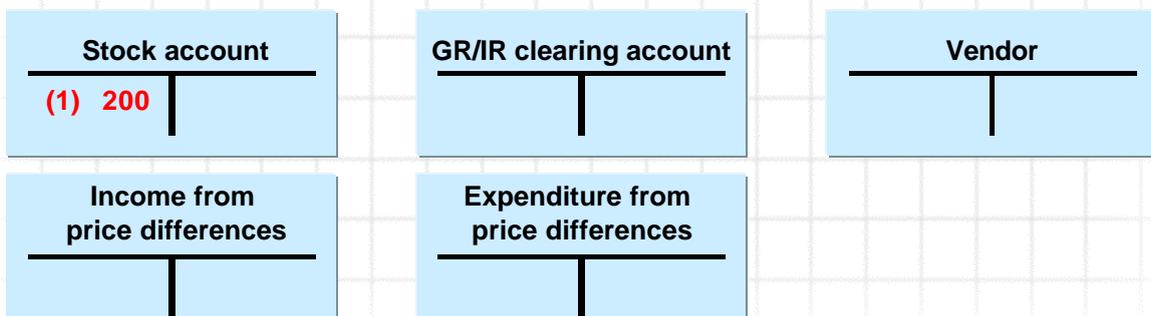
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- The initial stock quantity and value are displayed in the "Initial situation" column.

- For statistical purposes, the system also calculates the moving average price for materials that are valuated at the standard price. This means that you can spot major differences between the current procurement price and the standard price and react accordingly.

- The system calculates the total stock value of materials with standard price control as follows: total value = standard price (per base unit of measure) * total stock.

Example: Posting at Standard Price (2)

SAP

Material Master Record: Valuation Data

	Transaction	Stock	Total value	Standard price	Moving ave. price
(1)	Initial situation	100	200.00	2.00	2.00
(2)	GR for PO: 100 at 2.40	200	400.00	2.00	2.20

Financial Accounting: Account Movements

Stock account
(1) 200
(2) 200

GR/IR clearing account
240 (2)

Vendor

Income from price differences

Expenditure from price differences
(2) 40
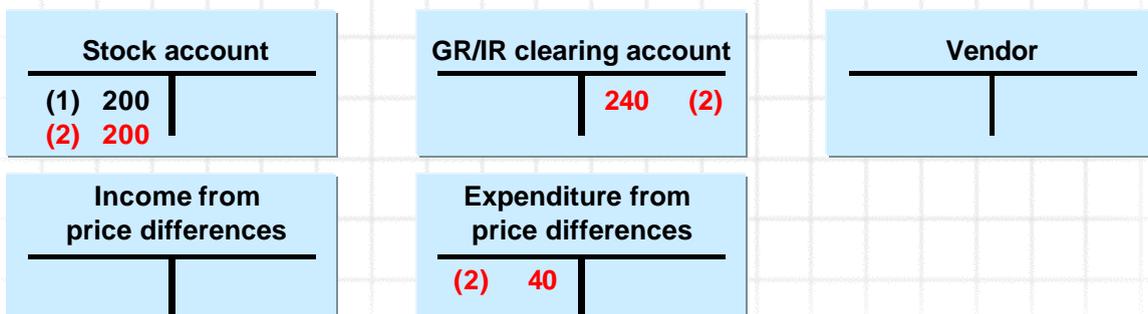
© SAP AG 1999

- The system updates the stock value and the stock quantity with the standard price.

- It updates the GR/IR clearing account with the purchase order price.

- It posts the difference between the purchase order price and the standard price to the price difference account.

Example: Posting at Standard Price (3)

Material Master Record: Valuation Data

	Transaction	Stock	Total value	Standard price	Moving ave. price
(1)	Initial situation	100	200.00	2.00	2.00
(2)	GR for PO: 100 at 2.40	200	400.00	2.00	2.20
(3)	IR for PO: 100 at 2.20	200	400.00	2.00	2.10

Financial Accounting: Account Movements

Stock account
(1) 200
(2) 200

GR/IR clearing account
(3) 240 | 240 (2)

Vendor
| 220 (3)

Income from price differences
| 20 (3)

Expenditure from price differences
(2) 40 |

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- The system clears the GR/IR clearing account with the purchase order price.

- It updates the vendor account with the invoice price.

- It posts the difference between the purchase order price and the invoice price to the "income from price differences" account. It does not change the total stock value.

Example: Posting at Moving Average Price (1)

Material Master Record: Valuation Data

	Transaction	Stock	Total value	Standard price	Moving ave. price
(1)	**Initial situation**	**100**	**200.00**	**2.00**	**2.00**

Financial Accounting: Account Movements

Stock account	GR/IR clearing account	Vendor
(1) 200		

■ The initial stock quantity and value are displayed in the "Initial situation" column.

Example: Posting at Moving Average Price (2)

SAP

Material Master Record: Valuation Data

	Transaction	Stock	Total value	Standard price	Moving ave. price
(1)	Initial situation	100	200.00	2.00	2.00
(2)	GR for PO: 100 at 2.40	200	440.00	2.00	2.20

Financial Accounting: Account Movements

Stock account	GR/IR clearing account	Vendor
(1) 200 (2) 240	240 (2)	

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- The system updates the stock value, stock account, and GR/IR clearing account with the purchase order price.
- It recalculates the moving average price on the basis of the new stock value.
- Moving average price (per base unit of measure) = total value / total stock

Example: Posting at Moving Average Price (3)

SAP

Material Master Record: Valuation Data

	Transaction	Stock	Total value	Standard price	Moving ave. price
(1)	Initial situation	100	200.00	2.00	2.00
(2)	GR for PO: 100 at 2.40	200	440.00	2.00	2.20
(3)	IR for PO: 100 at 2.20	200	420.00	2.00	2.10

Financial Accounting: Account Movements

Stock account

(1) 200   20 (3)
(2) 240

GR/IR clearing account

(3) 240   240 (2)

Vendor

220 (3)

- The system clears the GR/IR clearing account with the purchase order price and updates the vendor account with the invoice price. It posts the difference between the purchase order price and the invoice price to the stock account and recalculates the stock value based on the invoice price.

- The system redetermines the moving average price based on the new stock value.

- If the stock quantity is less than the invoice quantity, the system posts part of the difference to the "Expenditure/income from price differences" account instead of the stock account.

Exercises

Unit: Procurement of Stock Material

Topic: Stocks, Valuation, and Goods Receipt

At the conclusion of this exercise, you will be able to:

- Work with the stock overview

- Interpret current stock and valuation data in the material master

- Explain the difference between standard and moving average price in material valuation

- Outline the effects of the various valuation procedures on how accounts are updated in Financial Accounting
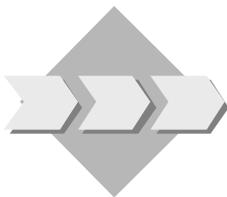
You enter the goods receipts for your purchase order. You see the effects of the various valuation procedures on how the accounts are updated in Financial Accounting and how the material valuation prices are updated.

In the exercises in this section, you should make a note of, compare, and analyze the different data for the material stocks and valuation prices.

Work through the exercises in order, using the tables on the next page to make your notes.

Tables for the Exercises

Table (1): Stock overview T-RM2##

	Plant 1000 (Hamburg)			Plant 1200 (Dresden)		
	Unrestr.-use:	Quality insp.	Open order qty	Unrestr.-use:	Quality insp.	Open order qty
Ex. 4-1 (Before GR)						
Ex. 4-9 (After GR)						
Ex. 4-11 (After trans. posting)						

Table (2): Accounting data T-RM2##, plant 1000

Price control:				
	Moving ave. price	Standard price	Total stock	Total value
Ex. 4-2 (Before GR)				
Ex. 4-4 (After GR)				

Table (3): Accounting data T-RM2##, plant 1200

Price control:				
	Moving ave. price	Standard price	Total stock	Total value
Ex. 4-2 (Before GR)				
Ex. 4-6 (After GR)				

4-1 Stock overview

Analyze the stock overview for the material **T-RM2##** in plants **1000** and **1200**. Make a note of the stocks for plants 1000 and 1200 in **table (1)** (stock overview).

4-2 Display material master record

Display the view for the plant stock and the Accounting 1 view for material **T-RM2##** for plants **1000** and **1200**.

Compare the plant stock data with the data from exercise 4-1.

Use the data from the accounting view to fill the **tables (2) and (3)** for the accounting data for plant 1000 and plant 1200.

4-3 Enter goods receipt for plant 1000

In plant **1000,** storage location **0001,** unrestricted-use stock, enter a goods receipt for the purchase order from exercise 2-1. Refer to the delivery note for other data that is required. **Ignore the goods receipt for plant 1200 (Dresden) for the time being.**

Make a note of the material document number: _____

Rasch Gr.##
Daimlerstrasse 127

69134 Heidelberg

Delivery note number: LS-B1##

IDES
Werk Hamburg
Altersdorferstrasse 15

Heidelberg, [current date]

22299 Hamburg

With reference to purchase order no. 450000xxxx we deliver the following materials:

Item	Qty	UoM	Matl no.	Description
10	100	pc	T-RM2##	Headlamp extra bright-##.

Best regards

Fast Gr.##

4-4 Display material document (1)

Display the material document that was created as a result of the goods receipt.
Choose the corresponding accounting document.
Which accounts are updated for which amount?

Itm	Account	Account short text	Amount
1			
2			

Exit the accounting document and go directly from the material document to the material master record. Choose the accounting view and add to **table (2)** the current accounting data for plant 1000.

4-5 Enter goods receipt for plant 1200

Now enter the goods receipt for plant **1200,** storage location **0001,** in accordance with the following delivery note.

Make a note of the material document number: _____

Rasch Gr.##
Daimlerstrasse 127

69134 Heidelberg

Delivery note number: LS-B2##

IDES
Werk Dresden
Pilnizerstr. 241

Heidelberg, [current date]

01069 Dresden

With reference to purchase order no. 450000xxxx we deliver the following materials:

Item	Qty	UoM	Matl no.	Description
10	100	pc	T-RM2##	Headlamp extra bright-##.

Best regards

Rasch Gr.##

4-6 Display material document (2)

Display the material document that was created as a result of the goods receipt.
Choose the corresponding accounting document.
Which accounts were posted for which amount?

Itm	Account	Account short text	Amount
1			
2			
3			

Exit the accounting document and go directly from the material document to the
material master record. Choose the accounting view and add to **table (3)** the current
accounting data for plant 1200.

4-7 Compare posting results

Look again at **tables (2) and (3)** and exercises 4-4 and 4-6. Why do both the
accounting documents and the total value of material T-RM2## differ for each
plant?

4-8 Display purchase order

Display the purchase order. Check whether the purchase order history was updated
as expected for both items.

Can you tell immediately whether the full quantity of your purchase order was
delivered?

The header details contain the *Status* tab page.

4-9   Stock overview

Analyze the stock overview for material **T-RM2##** in plants **1000** and **1200** again.
In **table (1)**, make a note of the current stocks.

Display the material document for the last goods receipt again. Where in the
material document does it tell you that goods were posted into stock in quality
inspection? Where is this information derived from?

_____

_____

4-10   Transfer material to unrestricted-use stock

Quality Inspection in plant **1200** has made a positive usage decision for material **T-RM2##**. Post the material from quality inspection stock to unrestricted-use stock.
The material remains in storage location 0001 even after it has been released.
Which movement type do you use?

Movement type: _____

Material document number: _____

4-11   Display material document for transfer posting

Display the material document.
Why is there no accounting document?

_____

_____

Check also that the system has updated the stock overview correctly. You can also
fill out table (1) if you wish.

Logistics Invoice Verification

Purch. order   **Invoice**

Invoice verification

Invoice doc.

Material
Qty
Amount
Blocking reason

Vendor   **GR/IR**

Input tax

Accounting document

Posting key
Account
Amount
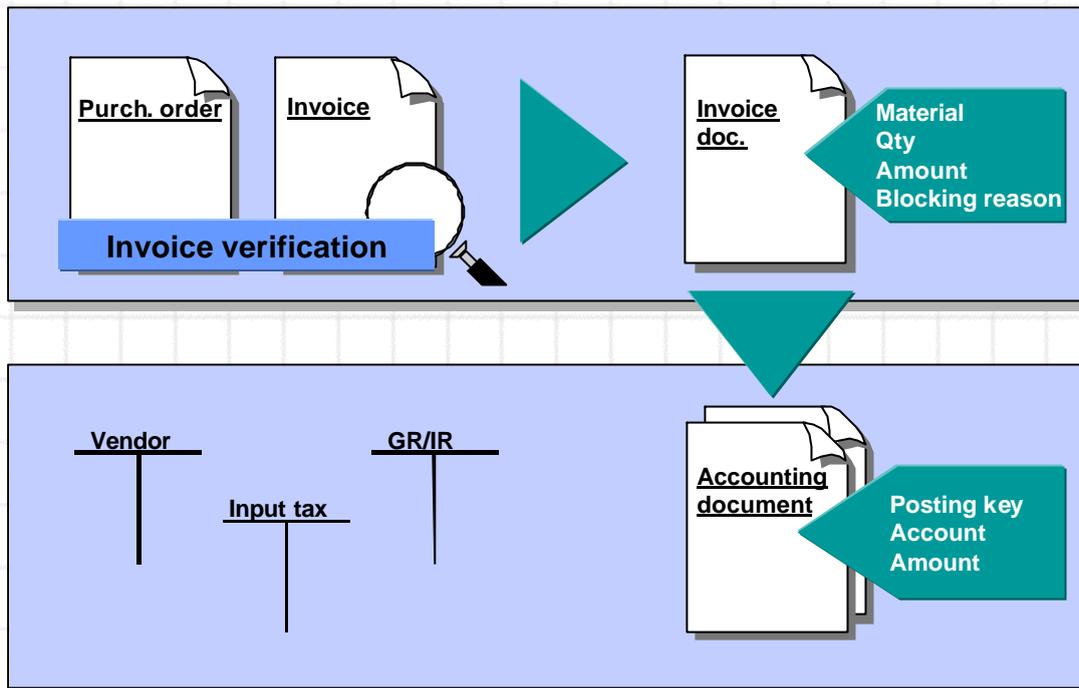
- In Logistics Invoice Verification, you generally work through a maximum of two screens to enter an invoice. You can therefore enter invoices quickly.

- Unlike conventional Invoice Verification, Logistics Invoice Verification enables you to post invoices across company codes.

- Logistics Invoice Verification creates a separate accounting document in addition to the invoice verification document. This is used in Financial Accounting to settle the invoice, but can also be processed by distributed systems or external systems.

- **Note:** For further information on Logistics Invoice Verification, refer to the Materials Management documentation on Invoice Verification: Logistics Invoice Verification.

Delivery Costs

Delivery costs

Planned

Purch.order

100 pcs = 1000 UNI
Freight = 2 UNI/pc

Invoice

100 pcs	UNI 1000
Freight	UNI 200
	UNI 1200

Unplanned

Purch.order

100 pcs = 1000 UNI

Invoice

100 pcs	UNI 1000
Freight	UNI 50
	UNI 1050

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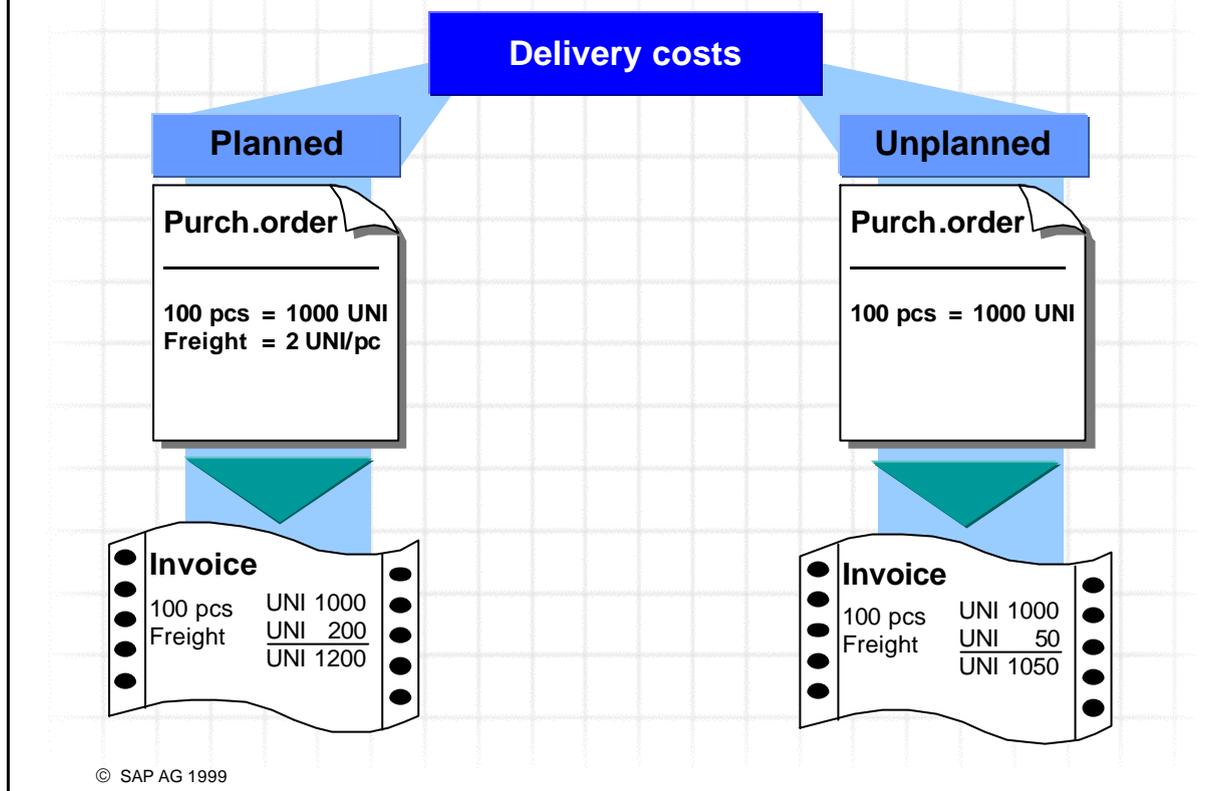
- The R/3 System differentiates between planned and unplanned delivery costs.

- You arrange planned delivery costs in advance with the vendor, a carrier, or the customs office and enter them when creating the purchase order. At goods receipt, provision accounts are posted, which are then cleared when the invoice is received.

- Unplanned delivery costs are delivery costs you do not know about when you are creating the purchase order. You do not enter these until the you receive the invoice. If required, the valuation carried out at goods receipt is corrected.

- The advantage of planned delivery costs is that they are included in the valuation of a material at goods receipt or, for purchase orders with account assignment, the system can debit the account assignment object. The system only carries out subsequent debits when the invoice is received if the delivery costs in the invoice differ from those planned.
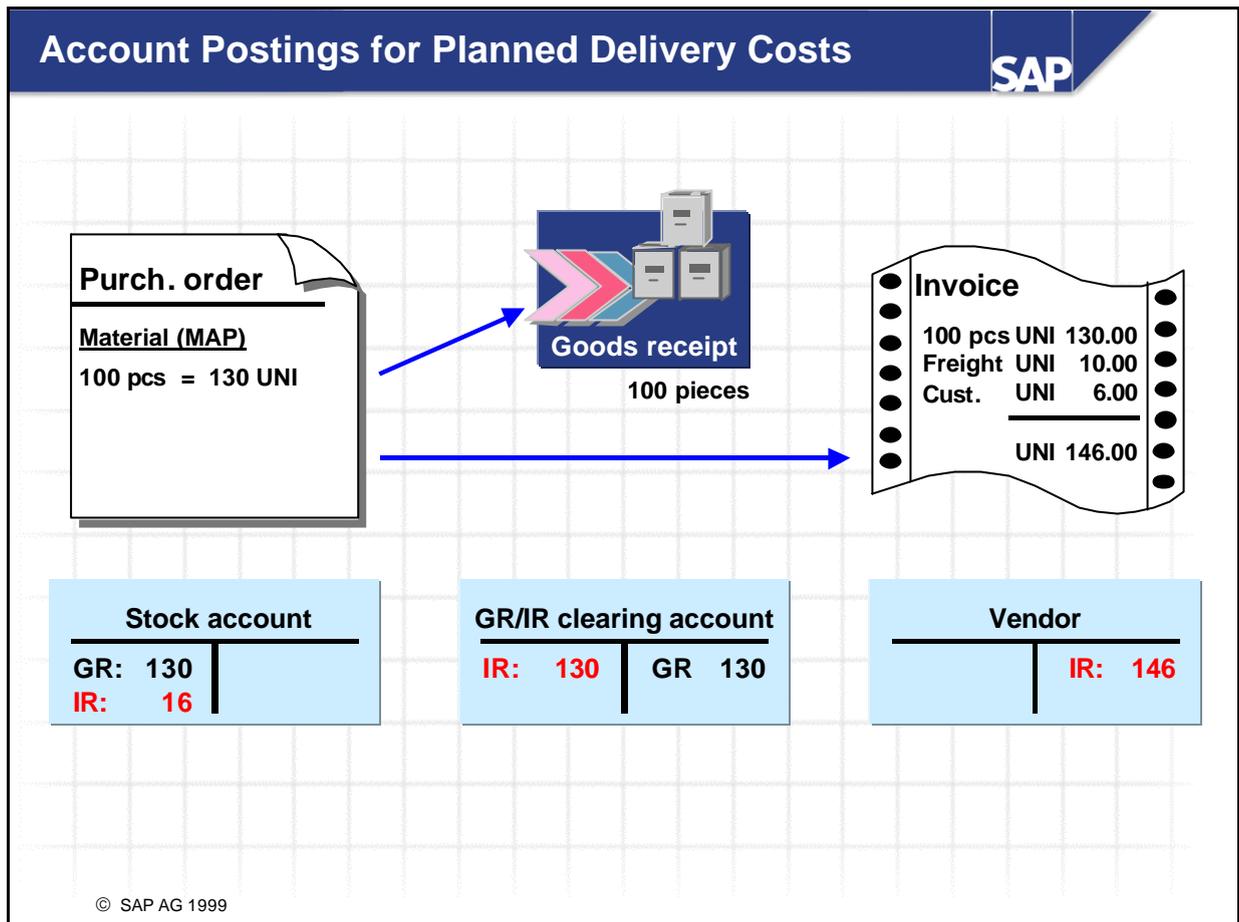
Account Postings for Planned Delivery Costs

Purch. order

Material (MAP)

100 pcs = 130 UNI

Goods receipt

100 pieces

Invoice

100 pcs UNI 130.00
Freight UNI 10.00
Cust. UNI 6.00

UNI 146.00

Stock account	
GR: 130	
IR: 16	

GR/IR clearing account	
IR: 130	GR 130

Vendor	
	IR: 146

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■ The system clears the GR/IR clearing account with the purchase order price and updates the vendor account with the invoice price.

Material with moving average price control:

- The system posts the difference between the purchase order price and the invoice price to the stock account and recalculates the stock value based on the invoice price.

- The system redetermines the moving average price based on the new stock value.

- If the stock quantity is less than the invoice quantity, the system posts part of the difference to the "Expenditure/income from price differences" account instead of the stock account.

Material with standard price control:

- The system posts the difference between the purchase order price and the invoice price to an expenditure/income from price differences account.

Exercises
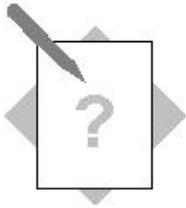
Unit: Procurement of Stock Material

Topic: Invoice Verification with Unplanned Delivery Costs
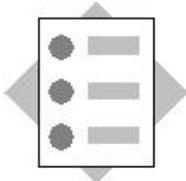
At the conclusion of this exercise, you will be able to:

- Enter invoices with unplanned delivery costs
- Explain the impact of unplanned delivery costs on material valuation
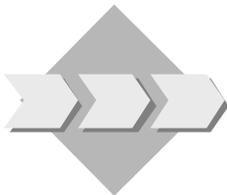
Examine the effects of the various valuation procedures on how the FI accounts and material valuation prices are updated when you enter an invoice.

5-1   Enter invoice

Use Logistics Invoice Verification to enter the invoice for the purchase order for the **headlamp extra bright -##** with vendor **T-K12B##**.
Use the following vendor invoice as a reference.

Note that freight charges are shown on the invoice. Enter these as unplanned delivery costs.

Enter unplanned delivery costs on the *Extras* tab page.

```
                                   Rasch Gr.##
                                   Daimlerstrasse 127
                                   69134 Heidelberg


                                   Invoice number:  RE-B1##

  IDES
  Central Purchasing
  Altersdorferstr. 13
  22299 Hamburg


                                   Heidelberg, [current date]


  With reference to purchase order no. 450000####, we are invoicing you for the following items:


  Itm    Qty     Matl no.      Description              Unit price   Total price


  10     100 pcs T-RM2##       Headlamp extra bright-## 72 UNI    7,200 UNI
  20     100 pcs T-RM2##       Headlamp extra bright-## 72 UNI    7,200 UNI


         Plus freight charges        200 UNI
         Subtotal 14,600 UNI
         plus 10 % tax       1,460 UNI
         Invoice amount   16,060 UNI


  The arranged payment conditions apply
```

Before you post the invoice, simulate the document and answer the questions below.

Which postings are made? Which of the postings are created as a result of the unplanned delivery costs? _____

Itm	General ledger	Acct/mat/asset/vend.	Amount
1			
2			
3			
4			
5			
6			

Post the invoice. Invoice document number:_____

5-2 Display material master record

Display the material master record for the headlamp again. Fill in the table below:

	Price control	Moving ave. price	Standard price	Total stock	Total stock
Plant 1000					
Plant 1200					

Are there any differences from the results of the goods receipt? If yes, what and why?

5-3 Display invoice document

Display the invoice document and go from there to the PO history. Find out how entering the invoice with unplanned delivery costs affects the purchase order history update.

Procurement of Stock Material: Unit Summary

SAP
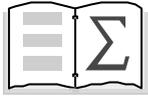
You are now able to:

- **Generate requests for quotation (RFQ) and enter and compare quotations**

- **Create a purchase order with reference to a quotation**

- **Post a goods receipt into quality inspection stock and release quality inspection stock for production**

- **Post an invoice with unplanned delivery costs**

- **Maintain purchasing info records in the R/3 System**

- **Valuate materials using the standard price and moving average price procedures**

Solutions

Unit: Procurement of Stock Material

Topic: Request for Quotation/Quotation Processing

1-1 **Create RFQs**

(Logistics ® Materials Management ® Purchasing) ® RFQ/quotation ® RFQ ® Create

RFQ date	Today's date
Quotation deadline	Today's date +2 weeks
Purch. organization	1000
Purchasing group	T##
Delivery date	Today's date + 1 month

Header data	
Collective RFQ	GR##

Item overview	
Material	T-RM2##
RFQ quantity	100 pcs

To enter the vendor addresses, proceed as follows:

® Header ® Vendor address

Enter the vendor and other data (address). Save the RFQ and make a note of the RFQ number.

Repeat this transaction for all vendors involved in the collective request for quotations.

Vendor address	
Vendor	1950
Vendor	T-K12A##
Vendor	T-K12B##

1-2 Display and print RFQ

® RFQ/quotation ® RFQ ® Messages
® Print/transmit

Purchasing document data	
Document number	*[Document number for RFQ for vendor T-K12A##]*

® Program ® Execute (or choose [*Execute*])

Select the RFQ and choose *® Goto ® Display message* (or [*Display message*])**.**

Then go back to the list of messages, select the message again, and print it by choosing *® Edit ® Output message* (or **[Output message]**).

1-3 Enter quotations

® RFQ/quotation ® Quotation ® Maintain

On the initial screen, enter the number of each RFQ and maintain the data in accordance with the information specified in the RFQs.

To set the info update indicator on the detail screen for the quotation item, choose (*® Item ® Detail; Info update: C*)

To enter the conditions, select the relevant item in the item overview and choose:
® Item ® Conditions

RFQ for vendor 1950 (one-time vendor)	
Gross price	*79 UNI/pc*
Condition type: *RA01 (Discount from gross)*	*3 %*
Condition type: *FRB1 (Absolute freight)*	*100 UNI*

Green arrow back one screen to change the delivery date in this quotation in accordance with the specifications (today's date + 6 weeks).

RFQ for vendor T-K12A## (Motolux GmbH Gr.##)	
Gross price	*90 UNI/pc*
Cond. type: *RA01 (discount from gross)*	*15 %*

RFQ for vendor T-K12B## (Rasch Gr.##):	
Gross price	*82 UNI/pc*
Condition type: *RA01 (Discount from gross)*	*10 %*

1-4 Compare prices

1-4-1 *® RFQ/quotation ® Quotation ® Price comparison*

Quotation price comparison list	
Purchasing organization	*1000*
Collective RFQ	*GR##*
☑	Mean value quotation
☑	Determine effective price

Determine the most reasonable quotation and make a note of the vendor and the effective price.

Vendor: *T-K12B##*

Effective price: *71.59 UNI*

1-4-2 You can go to a quotation directly from the quotation price comparison list.

Select the quotation and choose

® Edit ® Maintain quotation
(or choose **[Maintain quotation]** or double-click the quotation)

Change the delivery date to the current date + 6 weeks and save. (You automatically return to the quotation price comparison list.)

1-4-3 You can set the rejection indicator in the item overview for each item or on the detail screen for an item. Go directly from the quotation price comparison list to the quotations. Do not forget to save the changes.

1-5 Print rejection letters

Same procedure as exercise 1-2.

Solutions

Unit: Procurement of Stock Material

Topic: Purchase Order

2-1 Purchase order with reference to RFQ

(Logistics ® Materials Management ® Purchasing)
Purchase order ® Create ® Vendor/supplying plant known

Create a purchase order with reference to the most reasonable quotation. Select *Document Overview On*. Choose the *Selection Variant* icon and select *Requests for Quotations*. Enter your purchasing group to find your RFQs. Select the appropriate RFQ and drag it to the shopping cart above the PO Header. You can reference the same RFQ item for both purchase order items. You then have to enter the plant for each item (item 10, plant 1000; item 20, plant 1200).

Check whether the info update indicator is set for both items (***Item detail ® Material data****).*

2-2 Determine status of message

® Purchase order ® Display

Use the document overview for your purchase orders. To display the required document, double-click.

To find our whether your purchase order has already been sent as a message, refer to the *Header data* under *Status*. For more detailed information on message processing, choose
*® Goto ® Messages (*or choose **[Messages]**)*.*

To display the purchase order as a message, choose
® Purchase order ® Messages ® Print/Transmit.

In the overview, select your document and choose **[Issue message]**

2-3 **Change purchase order**

® Purchase order ® Change

Choose the purchase order from the document overview by double-clicking it.

Change to 80 UNI the gross price of both items in the conditions (item detail) and save.

2-4 **Display purchase order**

2-4-1 In the title bar, you can see which user created the purchase order.

2-4-2 to 2-4-4
If you need more information on the changes made to the order items, select the required items and choose *® Environment ® Item changes*.

For information on the next item you have selected, choose [*Next item*] (or *® Goto ® Next item*).

2-4-5 The RFQ number is stored in the item overview.

2-4-6 Since there have been no other transactions for this purchase order, none of the items have a purchase order history. No goods receipts or invoices have been entered for this purchase order item.

2-5 **Display changed purchase order as a message**

On the screen output, the document is flagged as a change document. The vendor is informed which information has changed for each item.

Solutions

Unit: Procurement of Stock Material

Topic: Info Records

3-1 Display info record

(Logistics ® Materials Management ® Purchasing)
® Master data ® Info record ® Display

Vendor	*T-K12B##*
Material	*T-RM2##*
Purch. organization	*1000*

3-1-1 *® Extras ® Administrative data*

3-1-2 [*General data*] pushbutton, info record number: …

3-1-3 Conditions exist. You can display them by choosing **[Conditions]** (or *® Extras ® Conditions*).

3-1-4 To display the number of the last purchase order, go to the *Purchasing Organization Data 2* view and choose (*® Goto ® PurchasingOrgData 2*) in the *Purchasing document* field.

3-1-5 *The conditions in the info record are obtained from the vendor's quotation, not from the purchase order.*

3-2 Info record list display

® Master data ® Info record ® List displays ® By material

Enter the number of the material and the purchasing organization 1000 on the selection screen. Run the report.

Vendor	*T-K12A##*	*T-K12B##*	*T-K12B##*
Origin of price	*Quotation*	*Purchase order*	*Quotation*
Effective price	*73.44 UNI*	*69.84 UNI*	*71.59 UNI*

The system does not create an info record because the one-time vendor master record is only a collective master record that is used for various one-time vendors.

3-3   Change info record

® Master data ® Info record ® Change

Vendor	*T-K12A##*
Material	*T-RM2##*
Purch. org.	*1000*

Purchasing organization data 1	
Planned delivery time	*10 days*
Minimum quantity	*50 pcs*

Conditions	
Validity	*Current date*
To	*Current date + 1 year*
Condition type	Amount
PB00 gross price	*85 UNI*
RA01 % discount from gross	*15 %*

To maintain the discount scale, select the condition type RA01 and choose *® Goto ® Scales* (or choose **[*Scales*]**).

Scales for % discount from gross (RA01)	
Scale qty	Amount
50 pcs	*15 %*
200 pcs	*18 %*

3-4 Questions

If you create a purchase order for 20 pieces of material T-RM2## from vendor T-K12A##, the system issues the message below.

"Quantity is less than the minimum purchase order quantity of 50 pieces in the info record."

However, you can still save the purchase order.

Net price per piece of material T-RM2## based on the order quantity:

20 pieces	50 pieces	150 pieces	320 pieces
85 UNI	*72.25 UNI*	*72.25 UNI*	*69.70 UNI*

Solutions

Unit: Procurement of Stock Material

Topic: Stocks, Valuation, and Goods Receipt

Please turn the page

Tables for the Exercises

Table (1): Stock overview T-RM2##

	Plant 1000 (Hamburg)			Plant 1200 (Dresden)		
	Unrestr.-use	Quality insp.	Open order qty	Unrestr.-use	Quality insp.	Open order qty
Ex. 4-1 (Before GR)	*0*	*0*	*100*	*0*	*0*	*100*
Ex. 4-9 (After GR)	*100*	*0*	*0*	*0*	*100*	*0*
Ex. 4-11 (After transf. posting)	*100*	*0*	*0*	*100*	*0*	*0*

Table (2): Accounting data T-RM2##, plant 1000

Price control:	*Moving average price*			
	Moving ave. price	Standard price	Total stock	Total value
Ex. 4-2 (Before GR)	*80*	*0*	*0 pcs*	*0*
Ex. 4-4 (After GR)	*72*	*0*	*100 pcs*	*7200*

Table (3): Accounting data T-RM2##, plant 1200

Price control:	*Standard price*			
	Moving ave. price	Standard price	Total stock	Total value
Ex. 4-2 (Before GR)	*0*	*80*	*0 pcs*	*0*
Ex. 4-6 (After GR)	*72*	*80*	*100 pcs*	*8000*

4-1   Stock overview

(Logistics ® Materials Management ® Inventory Management)
Environment ® Stock ® Stock Overview

On the selection screen, first enter material number T-RM2## and plants 1000 and
1200.
Accept the presettings and carry out the report. In table (1), make a note of the stock
values.

4-2   Display material master record

From the stock overview, you can go to the material master record by placing the
cursor on the line for plant 1000 or plant 1200 and choosing ***® Extras ® Display
material.***

Make a note of the price control procedure, moving average price, standard price,
total stock, and total value for plant 1000 (table 2) and plant 1200 (table 3).

4-3   Enter goods receipt for plant 1000

*® Goods Movement ® Goods Receipt ® For Purchase Order ® PO Number
Known*

Choose your PO number via F4 help or enter it manually. Copy only the first item
from the purchase order. Under *Header data*, tab page *General*, enter the document
date and the delivery note number. In the item overview, line 1, enter the storage
location 0001.

4-4   Display material document (1)

Switch from the goods receipt entry screen to the display mode. Choose your
material document from the document overview.
The *Docmt Info (Header data)* tab page contains the [***FI documents***] button,
which you choose to go to the accounting document.

Itm	Account	Account short text	Amount
1	*300000*	*Raw materials 1*	*7200*
2	*191100*	*GR/IR clearing account ext.*	*7200 (-)*

To go to the material master record, choose ***Environment ® Stock***. In table (2), make a note of the values that have changed in Financial Accounting.

4-5   Enter goods receipt for plant 1200

Same procedure as exercise 4-3.

4-6   Display material document (2)

Same procedure as exercise 4-4.

In table (3), make a note of the values that have changed in Financial Accounting.

Itm	Account	Account short text	Amount
1	*300010*	*Raw materials 2*	*8000*
2	*191100*	*GR/IR clearing account ext.*	*7200 (-)*
3	*281000*	*Amount from price diff. ext.*	*800 (-)*

4-7   Compare posting results

In plant 1000, the material is valuated using the moving average price control procedure. The stock value increases by the product of the goods receipt quantity and the price of the purchase order item.
The new moving average price is calculated as follows:

Moving average price = stock value /stock quantity

In plant 1200, the material is subject to standard price control. The stock value therefore increases by the product of the goods receipt quantity and the standard price in the material master.

The GR/IR clearing account is posted with the amount of the expected liabilities (GR quantity x purchase order price) for both items.

For materials managed with the standard price control procedure, the system posts the difference from (GR quantity x standard price) and (GR quantity x purchase order price) to a price difference account.

4-8   Display purchase order

(Logistics ® Materials Management ® Purchasing) Purchase order ® Display

Item detail – Tab page: *Purchase order history*

Header detail – Tab page: *Status*

4-9   Stock overview

(Logistics ® Materials Management ® Inventory Management)
Environment ® Stock ® Stock Overview

On the selection screen, first enter material number T-RM2## and plants 1000 and 1200. Otherwise, accept the presettings and carry out the report. In table (1), make a note of the stock values.

The item overview in the material document tells you to which stock the material is posted.

The "Stock in quality inspection" flag for the second item (plant 1200) is derived from the purchase order. Since the "Quality inspection" indicator is set in the Purchasing data in the material master for material T-RM2##, plant 1200, the system copies it as a default value to the purchase order.

4-10   Transfer material to unrestricted-use stock

(Logistics ® Materials Management ® Inventory Management)
® Goods Movement ® Transfer Posting
® Movement type ® Transfer posting ® Stock to stock ® QI to unrestricted

(You can also enter the number 321 directly in the *Movement type* field.)
Enter 1200 in the *Plant* field.

Enter transfer posting	
Material	*T-RA2##*
Qty	*100*
Storage location	*0001*

4-11   Display material document for transfer posting

The system does not create an accounting document for this transfer posting because the material is transferred within the same valuation area (plant). Quality inspection stock is already part of the plant's valuated stock.

Solutions

Unit: Procurement of Stock Material

Topic: Invoice Verification with Unplanned Delivery Costs

5-1   **Enter invoice**

Logistics ® Materials Management ® Invoice Verification ® Logistics Invoice Verification ® Document entry ® Enter invoice

Basic data tab page	
Document date	*Current date*
Reference	*RE-B1##*
Amount	*16060*
Tax amount	*1460*

Extras tab page	
Unplanned delivery costs	*200*

Choose your purchase order number for vendor T-K12B## via F4 help or enter it directly.

Simulate the postings and make a note of the accounts and amounts.

Itm	General ledger	Acct/mat/asset/vend.	Amount
1	*T-K12B##*	*Rasch Gr.##*	*16060*
2	*191100*	*GR/IR clearing (external)*	*7200*
3	*300000*	*Raw materials1*	*100*
4	*191100*	*GR/IR clearing (external)*	*7200*
5	*231000*	*Expend. from price diff. ext.*	*100*
6	*154000*	*Incoming tax*	*1460*

Postings 3 and 5 are caused by unplanned freight charges. The stock account Raw materials 1 is debited as a result of posting 3 because the material is valuated using the moving average price control procedure in plant 1000.
In plant 1200, the material is valuated using the standard price control procedure.

The stock account is not debited as a result of unplanned delivery costs. But an expenditure account for price differences is posted.

Post the invoice.

5-2 Display material master record

Logistics ® Materials Management ® Material Master ® Material ® Display ® Display current

(View: *Accounting 1*)

	Price control	Moving ave. price	Standard price	Total stock	Total value
Plant 1000	Moving average price	73	0	100 pcs	7300
Plant 1200	Standard price	73	80	100 pcs	8000

The system has adjusted the moving average price and the total value (in plant 1000 only) since the goods receipt was posted. (Increase in total value. See explanation for exercise 5-1)

The total value and the standard price in plant 1200 are unchanged.

5-3 Display invoice document

Display the invoice document and go from there to the purchase order history (or call up the purchase order directly).

® Display invoice document

Select the item and choose **[PO history]**.

Due to unplanned freight charges there are variances in the purchase order history because an extra 100 UNI were posted for each item when the invoice was entered.

Procurement of Consumable Material

SAP

Contents:

- **Purchase Requisitions**
- **Purchase Order Processing**
- **Goods Receipt**
- **Invoice Verification**
- **Blanket Purchase Orders**
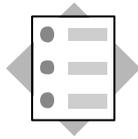
At the conclusion of this unit, you will be able to:

- **Describe the differences between the procurement of stock material and consumable material**

- **Create purchase requistitions manually and analyze them**

- **Convert purchase requisitions into purchase orders**

- **Use blanket purchase orders**

Procurement of Consum. Matl: Business Scenario

- **Your company wants to procure certain materials (for example, office supplies) directly for the respective cost center. These materials are not subject to Inventory Management.**

- **As a member of the project team, you will evaluate the processing of consumable material within SAP R/3.**

Procurement for stock or consumption

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Account Assignment Objects

Purchasing document

1 _____
2 _____
3 _____

Acct assgmt cat.

Assigned to

A: Asset

K: Cost center

P: Project

F: Order

C: Sales order

. . . .
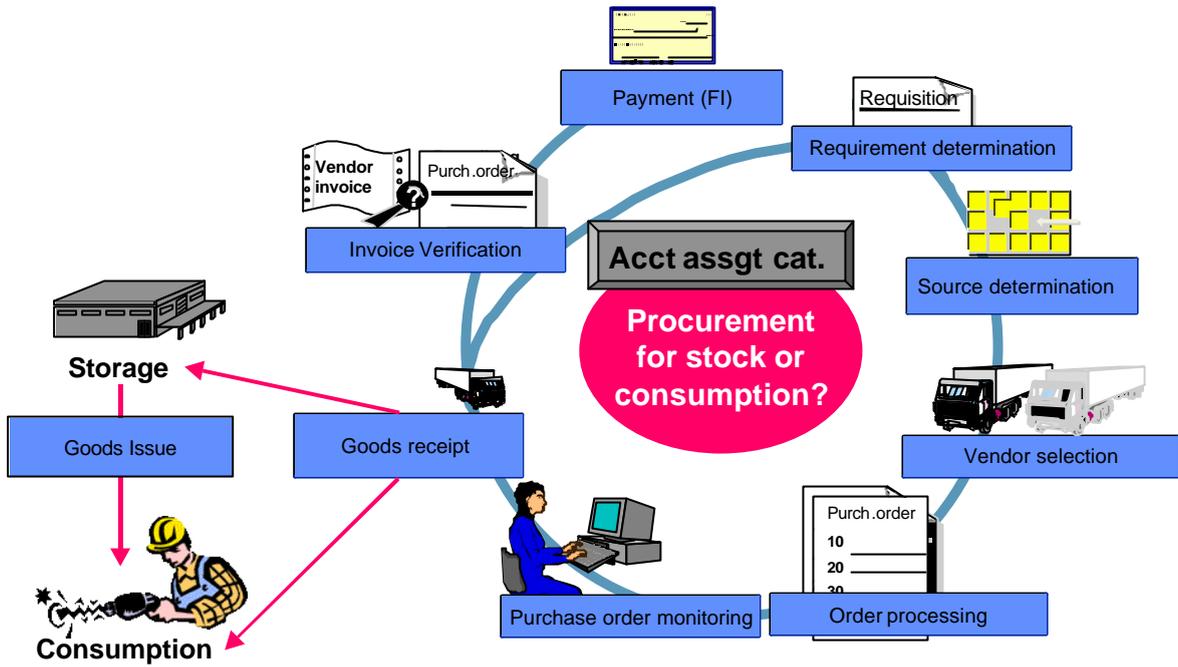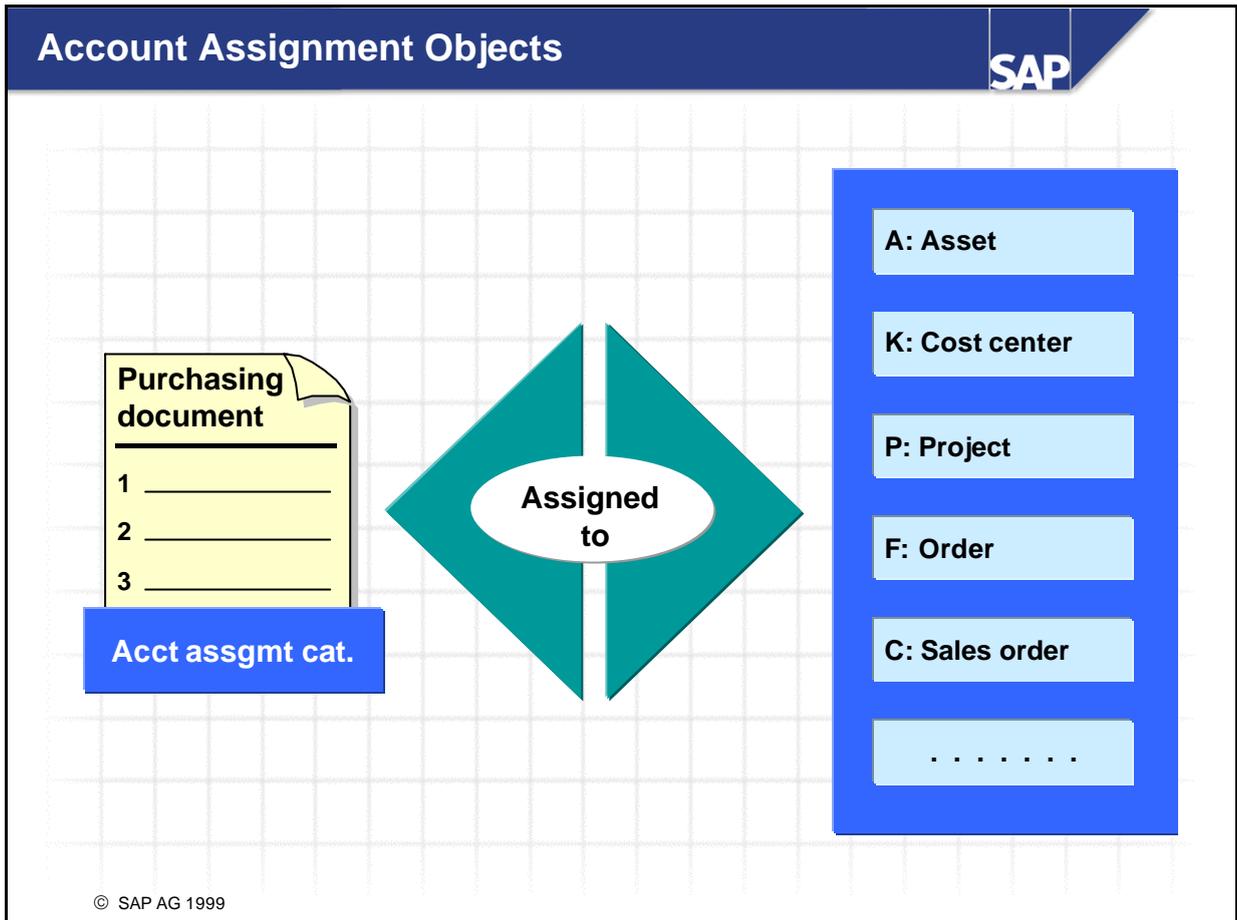
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- Consumable materials debit different account assignment objects depending on the account assignment category specified. The account assignment category determines which category of account assignment is to be debited and which account assignmnent data you have to prepare.

- If you choose the account assignment object K (cost center) in the purchase requisition when you procure consumable materials, you have to enter the G/L account number of the consumption account and the cost center for which the material is to be procured on the account assignment data screen. In Customizing, you can define that the system automatically proposes the number of the G/L account that is to be debited.

- If you choose the account assignment object A (asset) in the purchase requisition when you procure consumable materials, you have to enter the asset number on the account assignment data screen. The system automatically determines the G/L account to be debited from the asset number. You cannot enter it manually.

Consumable Material

- **Consumable materials are materials that are procured <u>directly</u> for an account assignment object.**

- **They are not managed on a value basis in Inventory Management.**

- **Examples of consumable material:**

  - **Office material** – assigned to a cost center

  - **Computer systems** – assigned to an asset

- **The system automatically updates consumption for materials that have a material master record.**

Material

Material type: NLAG

Basic data
Purchasing
Materials planning
Sales/distribution

→ **Optimized purchasing**

Material

Material type: DIEN

Basic data
Purchasing
Materials planning
Sales/distribution
Accounting

→ **Optimized purchasing**

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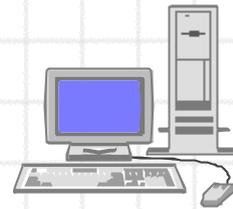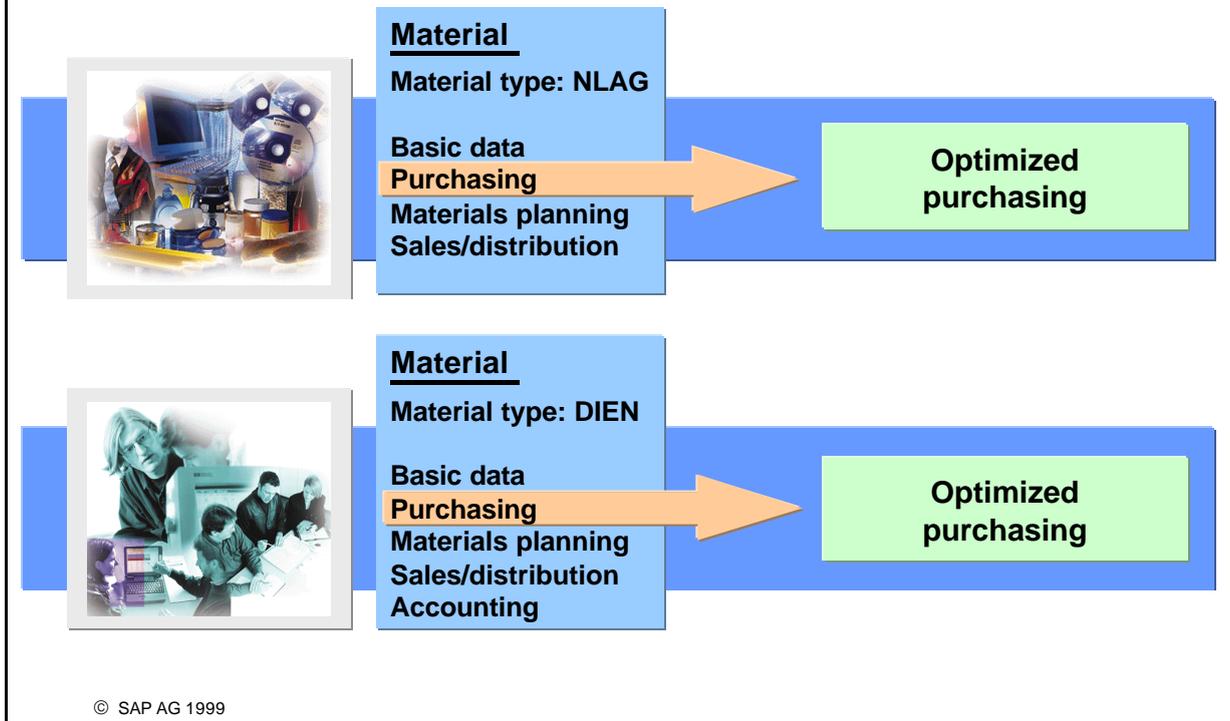
- When you create a material master record, you must assign the material to a material type. The latter defines certain attributes of the material and has important control functions.

- The material type defines the procurement type for a material, for example. The procurement type indicates whether the material is produced in-house, procured externally, or both.

- Together with the plant, the material type determines the inventory management requirement for a material. That is, it determines:

    - Whether changes in quantities are updated in the material master record

    - Whether changes in the value of the material are also updated in the stock accounts of *Financial Accounting.*

- Furthermore, the material type determines which accounts are to be posted when a material enters or leaves the warehouse or stores.

- The standard material types NLAG and DIEN are available for materials that cannot be stored (kept in stock), or are not intended to be, and for simple services, as follows:

- NLAG: Non-stock material is material that is not stored but is used or consumed immediately.

- DIEN: Services are procured externally. Since they obviously cannot be stored, they are also regarded as being consumed immediately. A material master record belonging to this material type can contain purchasing data.

Procurement for Consumption

Stock material

Consumable material

| With matl master record | Without matl master record | With matl master record |

Account assignment → **With acct assgt cat.** → **Enter account assignment cat.**

Automatic acct assgt
Data from matl master

Manual acct assgt
Data entry required

Stock account

Consumption acct
Cost center
Asset ...
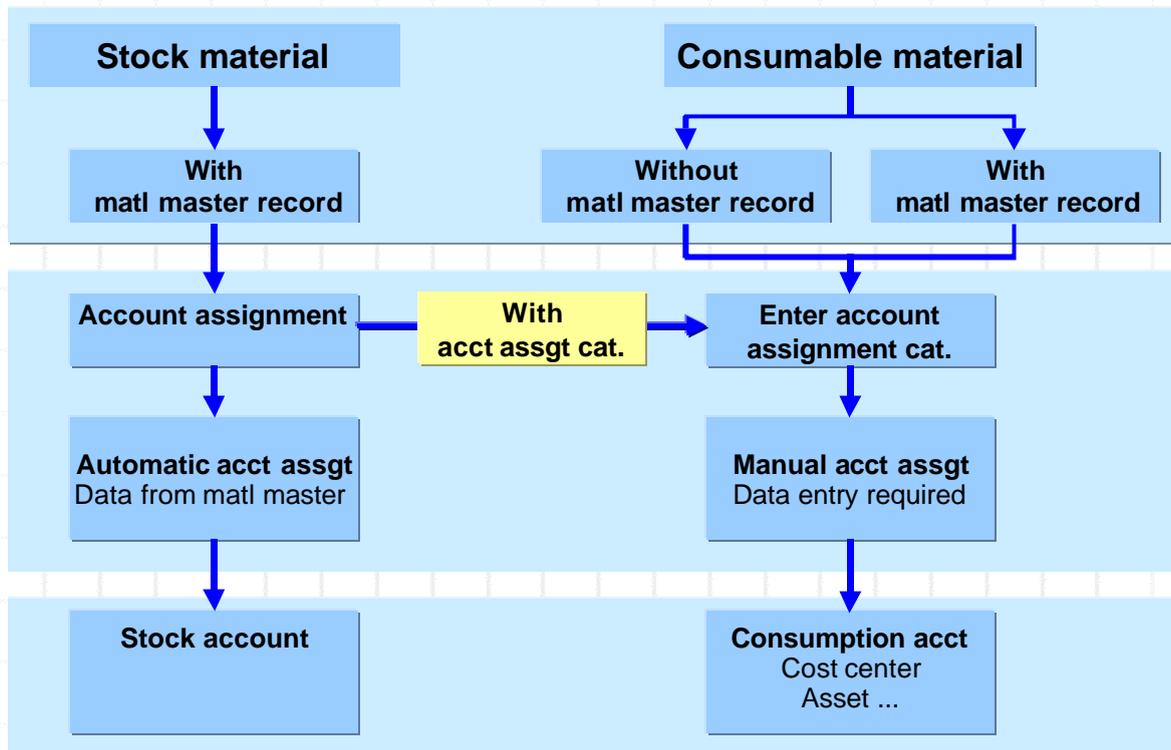
- When procuring consumable materials that do not have a material master record, you have to enter the following, as well as the account assignment category:
  - Short text (description)
  - Material group
  - Order unit

- Consumable materials with a material master record must also have an account assignment. Inventory is not managed on a value basis for these materials.

- The standard configuration of the R/3 System contains the following material types for consumable material:

  - Non-valuated material (material type UNBW):
    This type of material is managed on a quantity basis, but not on a value basis. This is advisable for materials that are low in value, whose stocks have to be monitored (for example, operating instructions).

  - Non-stock material (material type NLAG):
    You cannot manage these goods either on a quantity basis or on a value basis. For consumable materials that are required frequently, you can store the information required to create purchasing documents, for example, texts and units of measure.

Stock Material <=> Consumable Material
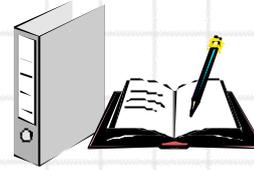
- **Entry of material number required**

- **No account assignment category**

- **Posting to stock accounts**

- **Quantity, value, and consumption updated in material master record**

- **Moving average price is adjusted**
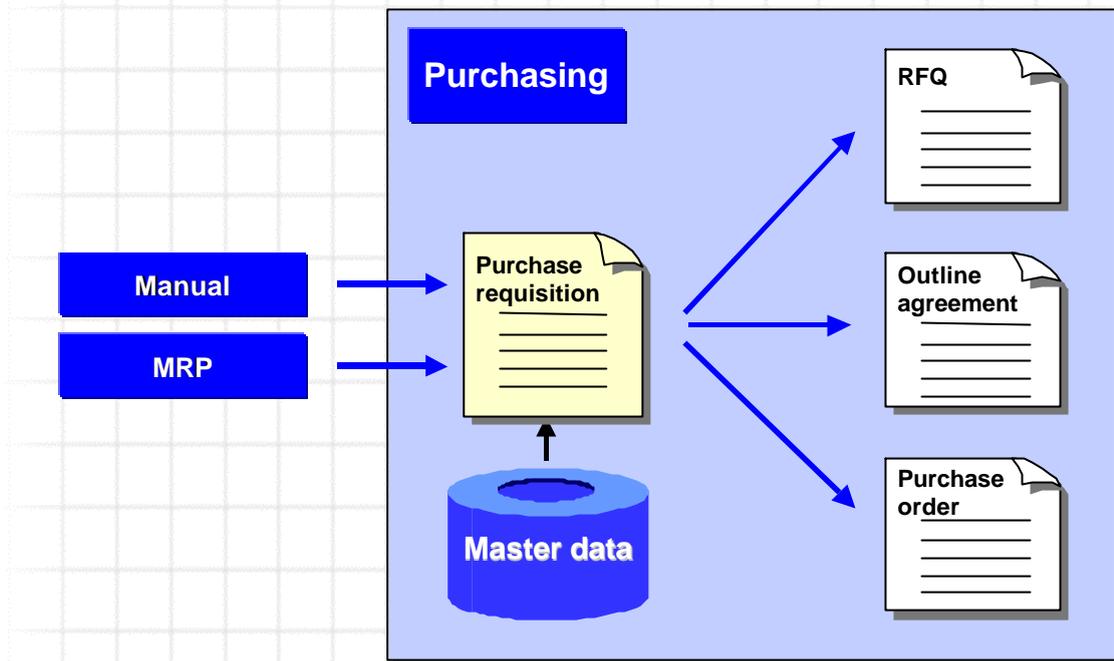
- **Entry of material number not required, but is possible**

- **Account assignment category mandatory**

- **Posting to consumption accounts**

- **Value is <u>not</u> updated, quantity and consumption can be updated**

Purchase Requisitions

Purchasing

RFQ

Manual

MRP

Purchase requisition

Outline agreement

Master data

Purchase order

- Purchase requistions are internal documents you use to request your Purchasing department to procure a particular quantity of a material or a service for a particular date.

- Purchase requisitions are either created manually by the department responsible or automatically by MRP.

- When you create a purchase requisition for materials that have a material master record, the R/3 System supports you when you enter data by transferring data in the material master record into the purchase requisition.

- Purchasing converts the purchase requisition into a request for quotation (RFQ), purchase order, or outline agreement.

Sources of Purchase Requisitions

Manual creation by user department   OR   Automatic creation

Department 1   Department 2

- MRP
- Plant maintenance
- Production orders
- Sales orders

Purchase requisition

10 _____

20 _____

30 _____

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- When the system creates a purchase requisition automatically, a user program (for example, MRP or order management) determines the material, purchase order quantity, and the delivery date. If required, the purchase requisition is automatically assigned to an account.

- Your user department can create a purchase requisition using a standard Internet Application Component (IAC) via a browser-oriented interface.

Creating a Purchase Requisition

SAP

Purchase requisition

1 pc   M-01   Sunny Sunny 01
Acct assgt: **U**
Valuation price: 1200 UNI

1 pc   M-10   Flatscreen MS 1775P
Acct assgt:
Valuation price: **900 UNI**

10 pcs   Punch
Acct assgt: K
Valuation price: **?**

Acct assgmt cat. unknown
No further acct assgt details required.

Valuation price
Proposal from material master record.

Valuation price
Manual entry for consumable material (even with master record).

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- Account assignment category U (unknown): If you do not know the account assignment object for which the material is being procured when the requirement coverage request is created, you can use account assignment category U in the purchase requisition. You do not have to enter any further account assignment details.

- Purchase requisition items with material master record: When you create a purchase requisition item, the system takes the valuation price from the material master record if the material is valuated. You can use this valuation price for a value-related release procedure. If a release strategy has been defined, you cannot create a purchase order with reference to this purchase requisition until the latter has been released.

- Purchase requisition items without material master record: The system cannot suggest a valuation price for materials that do not have a material master record (or for consumable materials with a material master record). The person who creates the purchase requisition has to manually enter the valuation price.

# Multiple Account Assignment (e.g., Cost Centers)

SAP

Acct assgt category K

Qty/Percent	Cost center
40 pcs	100060
160 pcs	1200

Distribution

	No multiple acct assgmt
1	Distribution by quantity
2	Distr. on percentage basis

Invoice for partial delivery

	No multiple acct assgmt
1	Distribute in order
2	Distribute proportionally

Goods receipt

X	Goods receipt
X	GR non-valuated

	Goods receipt
	GR non-valuated
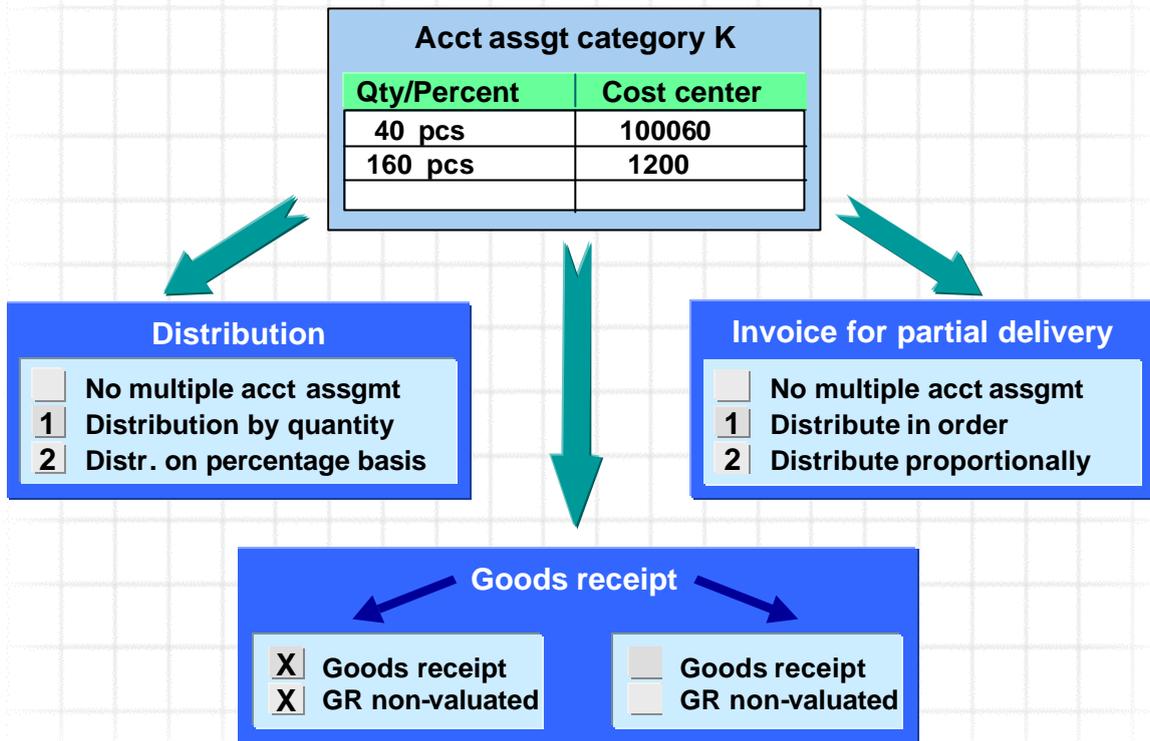
© SAP AG 1999
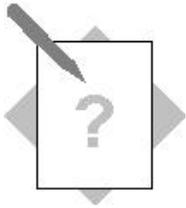
Exercises

Unit: Procurement of Consumable Material

Topic: Purchase Requisitions
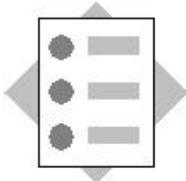
At the conclusion of this exercise, you will be able to:

- Create and process purchase requisitions for consumable material

- Analyze the current processing status of the purchase requisitions
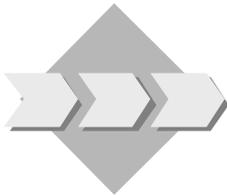
You work in internal Plant Maintenance and report material requirements to the Purchasing department via purchase requisitions. Purchasing processes your purchase requisitions and initiates the steps required.

Your department needs sensors and a special testing instrument. You have already maintained a material master record for the sensors because you require these on a regular basis. You have not created a material master record for the special testing instrument. Both materials are to be procured directly for cost centers.

1-1 Create purchase requisition

The Plant Maintenance department at IDES requires 5 pieces of the **sensor-## T-RM3##** and a **testing instrument-##,** for which you have not created a material master record in the system.

Both materials are to be procured for plant **1000 (Hamburg)**. Cost centers **4100** and **4110** are to be debited for the delivery. The requester **IH##** uses the requirement tracking number **GR##**. Create a purchase requisition for the required materials.

Since some data applies to all items in the purchase requisition, you can enter it as default values on the initial screen.

Enter as default values the account assignment category, the requirement tracking number, and the requester.

Use the following information for the materials.

- A material master record exists for material **T-RM3##**. Therefore, you only have to enter the material number and the required quantity. The system proposes the remaining data from the material master record.

The sensors are to be procured for two different cost centers; that is, you have to use multiple account assignment:
3 pieces for cost center **4100** and 2 pieces for cost center **4110**.

To go to the single account assignment screen from the dialog box, choose
[**Switch format**] on the multiple account assignment screen.

On the Account Assignment screen for this purchase order item, accept the G/L account that is suggested for the consumption posting, and enter the cost center. Do not forget to set the correct distribution indicator (=_____). Choose the partial invoice indicator of your choice and define that the goods receipt should not be valuated.

- For the second item, enter the description "**testing instrument-##**" in the material short text field and add the Purchasing group T## (**LO020-##**) and the material group for metal work tools (=_____). Schedule the delivery for the same date as the delivery of the sensors. The valuation price of the testing instrument is 525 UNI.

You can define release procedures for purchase requisitions. Among other things, these can be based on item value. The item value is the product of the requested quantity and the valuation price in the material master. Therefore, you have to specify a valuation price for materials that do not have a master record.

Accept the G/L account the system proposes. Cost center **4100** is debited for the costs of the tool.

Make a note of the purchase requisition number.

_____

1-2   Display purchase requisition for requirement tracking number GR##

Display a list of the purchase requisitions for your requirement tracking number.

Use the transaction in the *Purchasing* menu:

Requisition ® List displays ® General

Choose and display your purchase requisition.

What is the processing status of the purchase requisition items?

Status of item 10: _____

Status of item 20: _____

Return to the list. This also shows the processing status of each requisition item.

Converting Purchase Requisitions
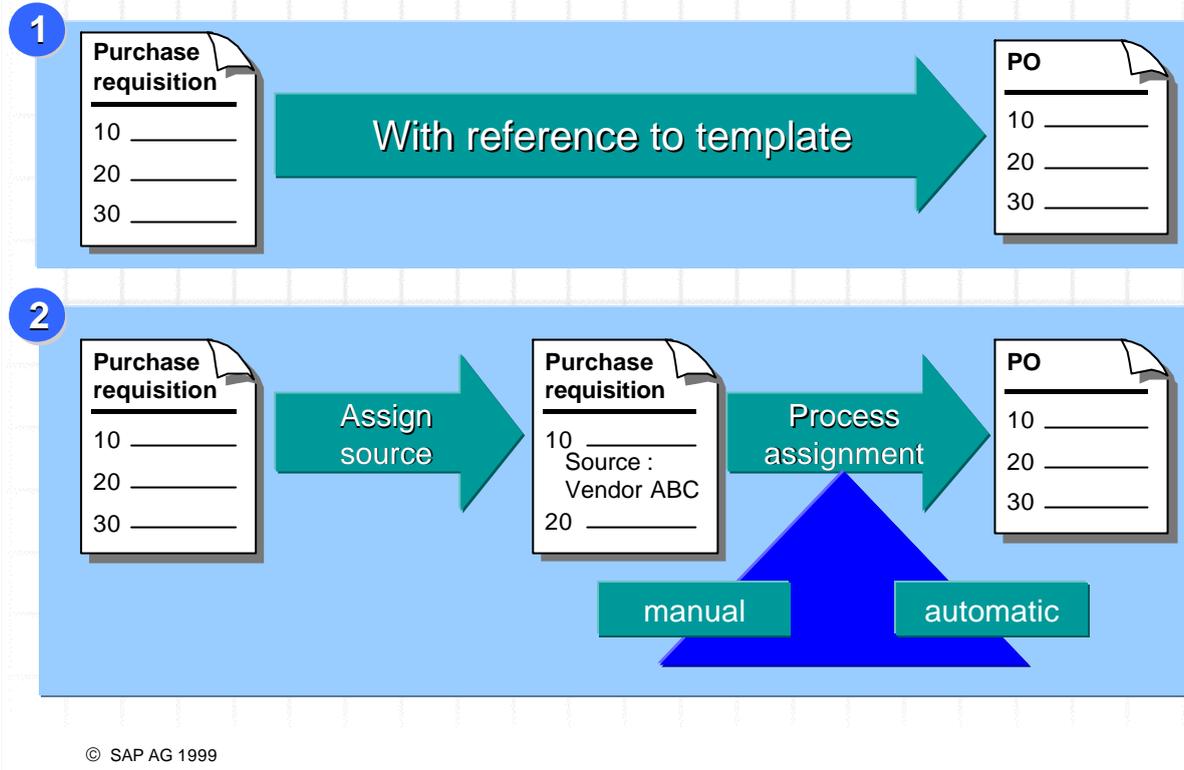
■ The buyer responsible normally converts purchase requisitions into purchase orders. In the R/3 System, you can:

- Create a purchase order with reference to a purchase requisition: If you have not yet entered a valid source of supply for the material in the system, you can create a purchase order with reference to the purchase requisition. You can make reference to the purchase requisition on the initial screen as well as on the item overview for purchase order entry.

- Convert a purchase requisition into a purchase order: Before converting the purchase requisition into a purchase order, you have to define sources of supply for the purchase requisition items. You can enter a valid info record or an outline agreement for each requisition item. The system can suggest all possible sources of supply if you do not know of any. By means of a price simulation, the system compares these sources of supply so that you can decide on the most reasonable one. You then convert the purchase requisition into a purchase order manually or the system converts it automatically.

■ Note: For further information on purchasing document output, refer to the Materials Management documentation on Purchasing: Optimized Purchasing, or the R/3 Training Course LO520 Optimized Purchasing.

Copying Purchase Requisition Data to the PO
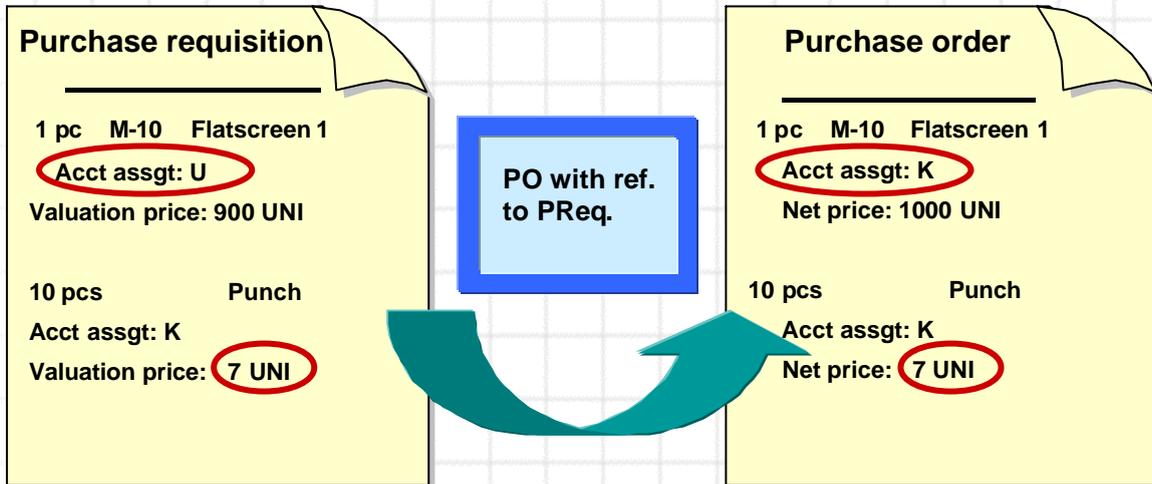
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- Acct assgmt cat. U:
  Although account assignment category U is allowed in the purchase requisition, it is not usually
  allowed in the purchase order. (Limit items and service items are an exception.) When creating a
  purchase order, the buyer has to choose a valid account assignment object and maintain all
  valid account assignment details.

- Purchase requisition items with material master record:
  If an info record exists for the vendor and the material, the system suggests the purchase
  price from the info record when you create a purchase order with reference to a purchase
  requisition If no info record exists, you have to enter the price manually.

- Purchase requisition items without material master record:
  If the system copies a purchase requisition item without a material master into the purchase
  order, the system suggests the valuation price from the purchase requisition as the purchase
  price. The buyer can change this to the purchase price that is currently valid.

Exercises

Unit: Procurement of Consumable Material

Topic: Purchase Order with Reference to Purchase Requisition
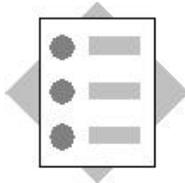
At the conclusion of this exercise, you will be able to:

- Create a purchase order with reference to purchase requisition
- Check the processing status of purchase requisitions
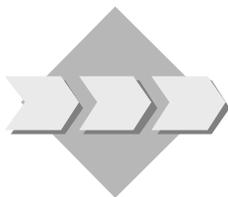
As a member of the central Purchasing department, you are responsible for processing purchase requisitions for the different departments in your company. Purchase requisitions for consumable materials is also one of your responsibilities.

2-1   Create purchase order

Create a purchase order for the sensors and the testing instrument. Reference the purchase requisition from exercise 1-1.

You have already used vendor **T-K12C##** (C.E.B Berlin Gr.##) for previous purchase orders. You are ordering for the purchasing organization **IDES** (1000) and your personal purchasing group **T##.**

Display a document overview of the purchase requisitions for your purchasing group. Copy both requisition items.
According to the vendor, the sensors cost 15 UNI per piece. The price of the testing instrument is consistent with the valuation price in the purchase requisition.

Make a note of the purchase order number:_____

2-2   Display purchase requisition

What is the processing status of both purchase requisition items?

Item 10: _____   Item 20: _____

2-3 Display purchase order

With which purchase requisition and which item is the purchase order for the testing instrument linked?

Requisition number/item:_____

Exercises
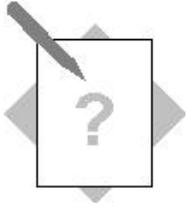
Unit: Procurement of Consumable Material

Topic: Goods Receipt
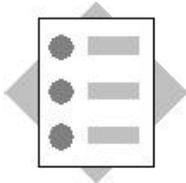
At the conclusion of this exercise, you will be able to:

- Post a goods receipt for consumable material

- Track consumption in the material master record
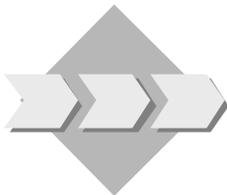
The consumable materials you ordered are forwarded directly to the requesting department instead of being placed in storage.

3-1   Enter goods receipt

Enter the goods receipt for the purchase order from exercise 2-1. Use the following delivery note as a reference.

Make a note of the GR document number:_____

```
                                          C.E.B Berlin Gr.##
                                          Jakoballee 23
                                          12001 Berlin


                                          Delivery note number:     LS-C1##

IDES
Werk Hamburg
Altersdorferstr. 13


22299 Hamburg
                                          Berlin, [current date]


With reference to purchase order no. 450000xxxx we deliver the following materials:


Itm     Qty     UoM     Matl no.        Description
10      5       pc      T-RM3##            Sensor-##
20      1       pc      T-RM4##         Testing instrument-##


Best regards

C.E.B Berlin Gr.##
```

3-2 Display material document

Display the material document that was created as a result of the goods receipt. Choose the corresponding accounting document. Did the system create posting lines for all the purchase order items? Explain the result.

_____

_____

_____

Return to the material document and determine the consumption data for both materials.

The system updates material consumption in the material master record. From the material document, you can go to the material master record for a given material by double-clicking the material in question.

Consumption of sensor##: _____

Consumption of testing instrument##: _____

Why were you not able to determine consumption data for the testing instrument?

_____

3-3   Display purchase order history

Does the purchase order history have any special features that it does not have when you procure a stock material?

_____

_____

_____

Exercises
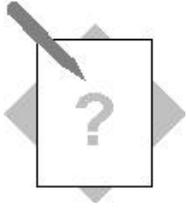
Unit: Procurement of Consumable Material

Topic: Invoice Verification
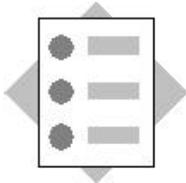
At the conclusion of this exercise, you will be able to:

- Carry out invoice verification for consumable materials

You check the invoice for the consumable materials and the postings that were generated in Financial Accounting.

4-1 Enter invoice

Use Logistics Invoice Verification to enter the invoice for the purchase order for the **sensors -##** and the **testing instrument -##** with vendor **T-K12C##**.

Use the following vendor invoice as a reference:

```
                                        C.E.B Berlin Gr.##

                                        Jakoballee 23
                                        12001 Berlin


                                        Invoice number:  RE-C1##


  IDES
  Altersdorferstr. 13


  22299 Hamburg
                                        Berlin, [current date]


  With reference to purchase order no. 450000####, we are invoicing you for the following items:



  Itm    Qty     Matl no.    Description        Unit price            Total price


  10     5 pcs   T-RM3##       Sensor-##         15 UNI            75 UNI
  10     1 pc    T-RM4##       Testing instrument-##   525 UNI  525 UNI


                  Net total          600 UNI
                plus 10 % tax      60 UNI
                Invoice amount    660 UNI



  Best regards
  C.E.B Berlin Gr.##
```

Make a note of the invoice document no.:_____

4-2   Display purchase order history records

Display the purchase order and check the purchase order history records of both
items.

Then, call up the invoice verification document via the purchase order history.
Display the accounting document for your invoice and fill out the table on the next
page.

You can switch the display variants via [*Choose Display variants*] so that you can also display materials or cost centers, for example.

You can also define your own display variants.

Itm	Account	Short text	Material	Cost center	Amount
1					
2					
3					
4					
5					
6					
7					

Exercises

Unit: Procurement of Consumable Material

Topic: Unknown Accounting (optional)

At the conclusion of this exercise, you will be able to:

- Create and process purchase requisitions for consumable material

- Create a purchase order with reference to purchase requisition

You work in internal Plant Maintenance and report material requirements to the Purchasing department via purchase requisitions. Purchasing processes your purchase requisitions and initiates the steps required.
Your department needs another (different) special testing instrument. You have not created a material master record for the special testing instrument. At the time of creating the purchase requisition you have no information whether the material is to be procured directly for your cost center or for a plant maintenance order.

Afterwards you play the role of a member of the central Purchasing department. You are responsible for processing purchase requisitions for the different departments in your company. Purchase requisitions for consumable materials is also one of your responsibilities.
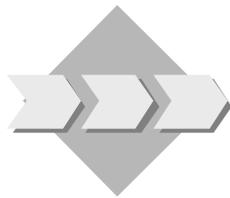
Ac-1 Create purchase requisition

The Plant Maintenance department at IDES requires a **testing instrument ALPHA-##,** for which you have not created a material master record in the system.

The testing instrument is to be procured for plant **1000 (Hamburg)**. The cost object is not known at this point in time. However, you procure the instrument for consumption. The requester **IH##** uses the requirement tracking number **U##**. Create a purchase requisition for the required materials.

Which account determination category do you use? _____

Use the following information for the procurement of the testing instrument.

Please enter the description '**testing instrument ALPHA-##"** in the material short text field and add the Purchasing group T## (**LO020-##**) and the **material group for (metal work) tools** (=_____). You need the testing instrument in one week. The valuation price of the testing instrument is **525 UNI**.

You can define release procedures for purchase requisitions. Among other things, these can be based on item value. The item value is the product of the requested quantity and the valuation price in the material master. Therefore, you have to specify a valuation price for materials that do not have a master record.

Make a note of the purchase requisition number.

_____

Ac-2 Create purchase order

Create a purchase order for the testing instrument. Reference the purchase requisition from exercise Ac-1.

You have already used vendor **T-K12C##** (C.E.B Berlin Gr.##) for previous purchase orders. You are ordering for the purchasing organization **IDES** (1000) and your personal purchasing group **T##.**

Display a document overview of the purchase requisitions for your purchasing group. Copy the requisition item.

Which entry do you have to change? Which information do you need for this?

_____

_____

The price of the testing instrument is consistent with the valuation price in the purchase requisition.

The decision was made, that your cost center **4100** will be charged with the costs. Accept the G/L account the system proposes and enter the cost center.

Make a note of the purchase order number:_____

Blanket Purchase Orders

Externally

Jan 01 1998 — Dec 31 1998

Purchase order
Validity period
Jan 01 1998 -
Dec 31 1998
Limit:
UNI 10000

Invoice
Feb 03 1998

CCtr 1	8000
CCtr 5	1000
CCtr 3	1000
	10000

Invoice
Dec 09 1998

| CCtr 2 | 4000 |
| | 4000 |

In the system

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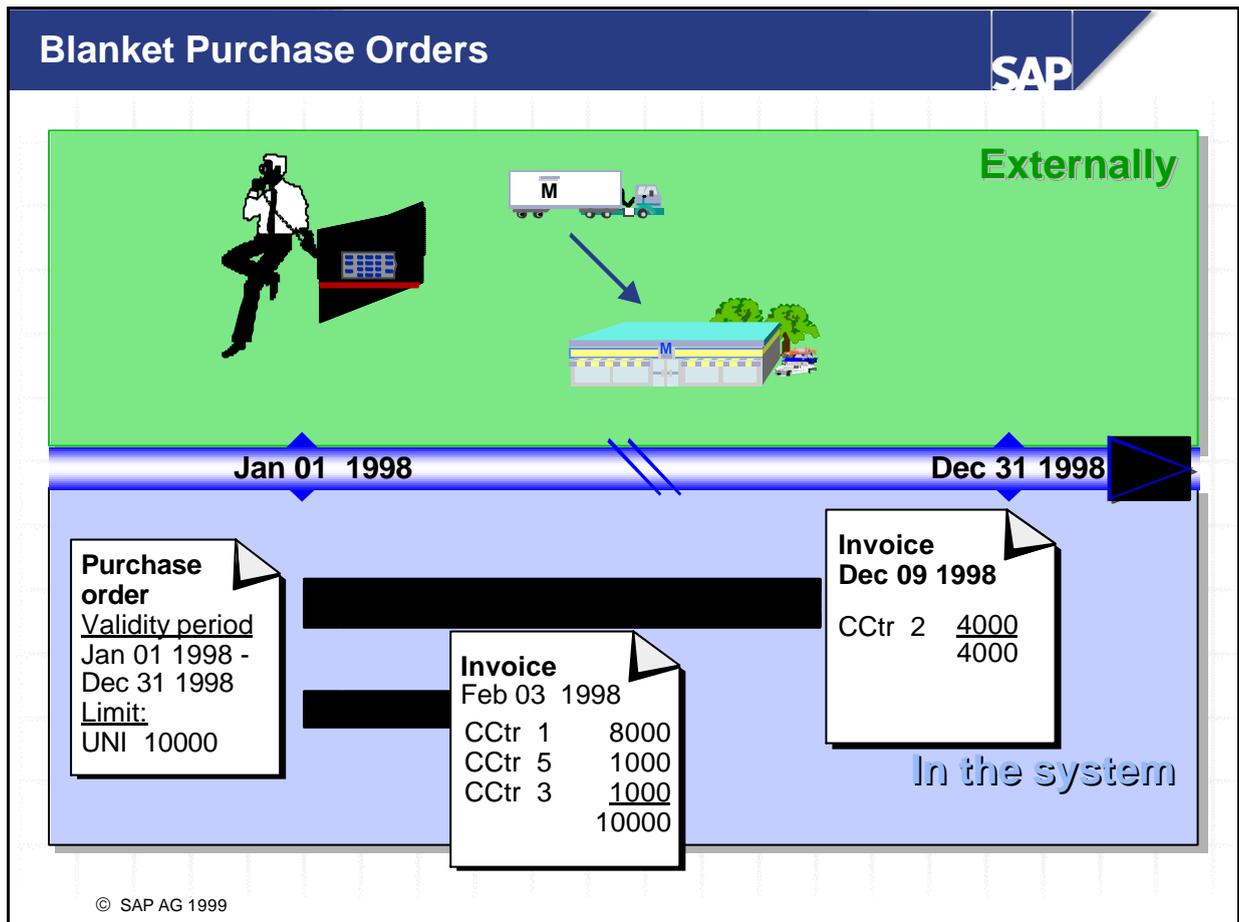
- You can use blanket purchase orders to procure consumable materials or services for which it is not worth creating a separate purchase order for each procurement transaction.

- Blanket purchase orders are usually valid for a longer period of time. You can directly post the invoices for the materials and services procured for this blanket purchase order.
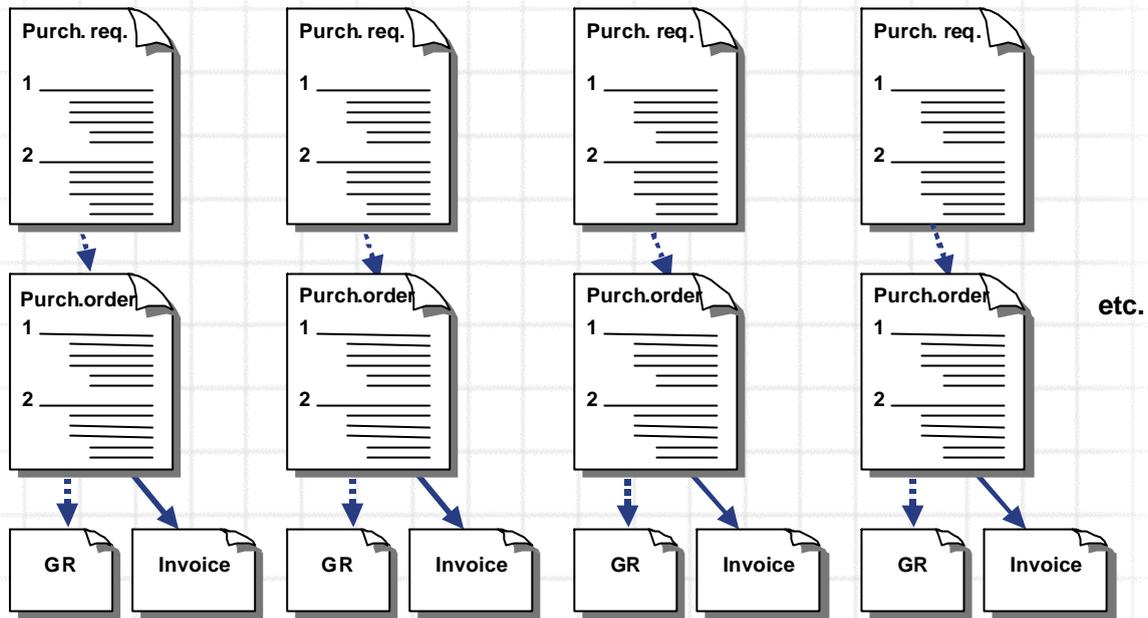
Standard Procurement for Consumable Material

- In the standard procurement of consumable material, you have to create at least one purchase order for every procurement transaction. This purchase order is used as a basis for invoice verification.

- You usually enter goods receipts for each conventional purchase order.

- In some cases, there may be preceding documents, such as purchase requisitions or quotations.

Blanket Purchase Orders
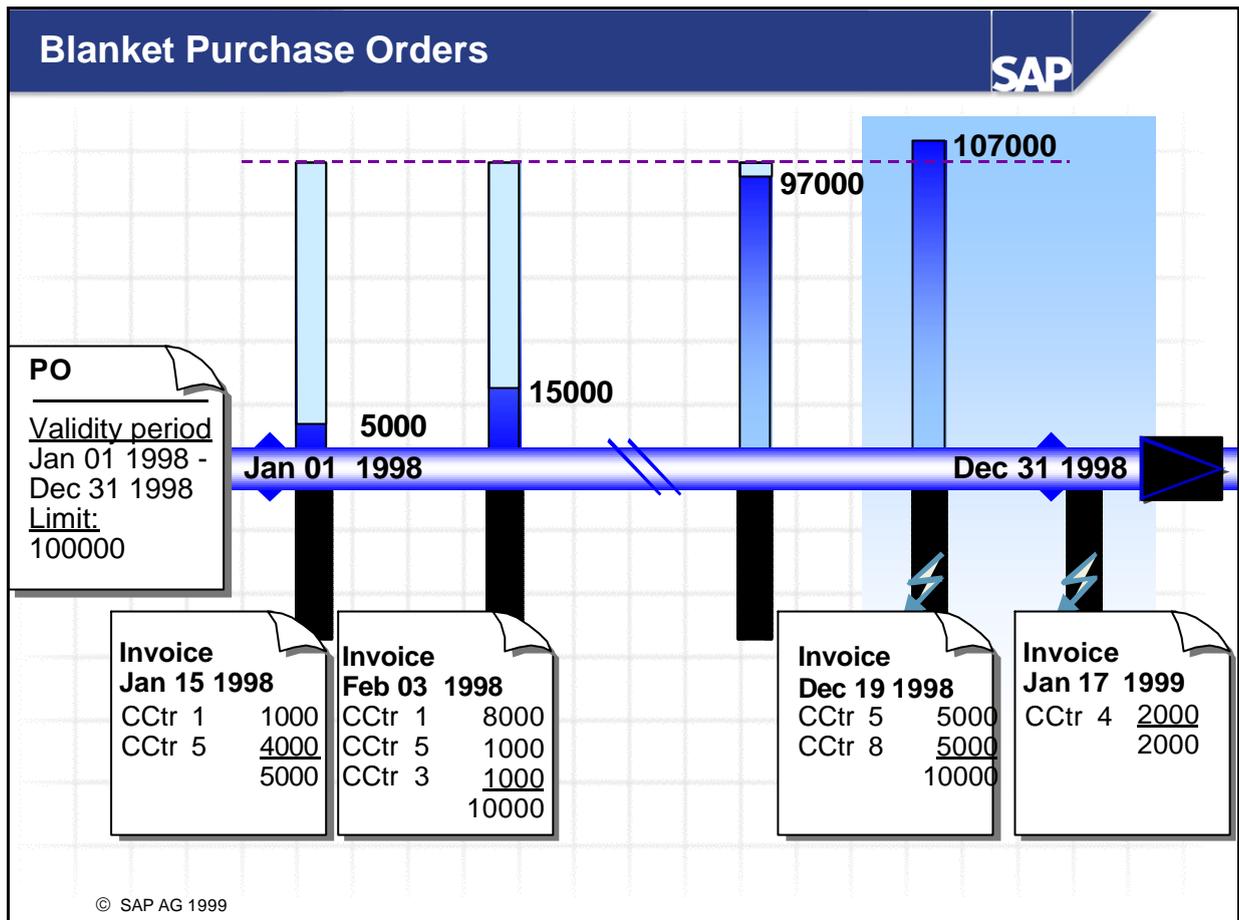
- As of Release 4.0A, you can create a purchase order with an item-related value limit, which is valid for a longer period of time (for example, a year).

- You can use these blanket purchase orders to procure materials or services that you do not want to process individually (purchase order, goods receipt, and invoice receipt).

- You can use the document type FO for these blanket purchase orders. In the standard system, this document type enables you to enter the validity period at PO header data level and use the item type for blanket purchase order items. (Limit items are sometimes called blanket items.)

- Invoice Verification checks whether the invoice lies within the validity period and whether the total limit will be exceeded when the invoice is posted.

Procurement via Blanket Purchase Order

Purchase requisition
1
2

Invoice
Invoice
Invoice
Invoice

RFQ
Quotation

Goods receipt

Serv. entry sheet

PO
1
2

Contract
Sched. agmt

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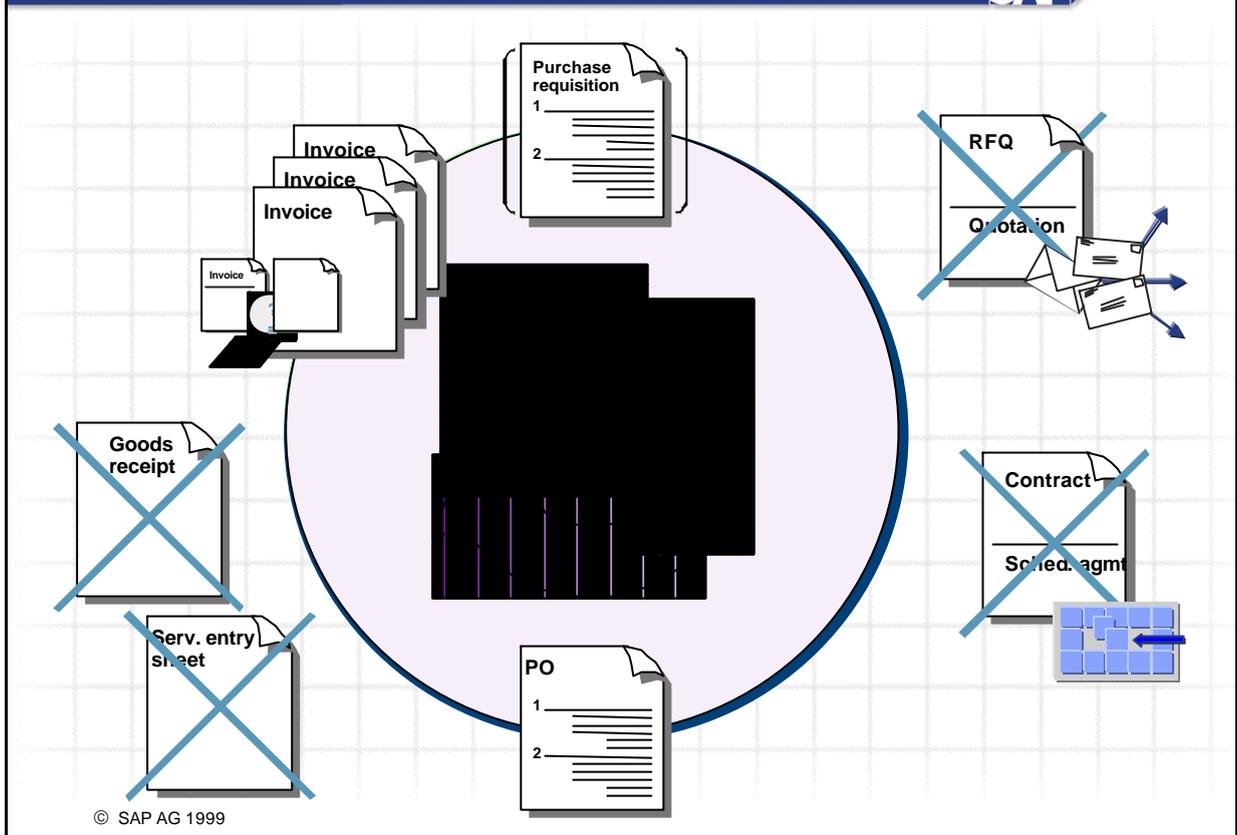
- You do not have to define the account assignment when you create the blanket purchase order.

- You cannot use RFQs or contracts. You can create a purchase requisition (optional) and then a purchase order.

- There is no goods receipt (for services, there is no service entry or service acceptance). Invoices are posted directly for the purchase order.

- You have to use Logistics Invoice Verification to check invoices relating to blanket purchase orders.

Characteristics of Blanket Purchase Orders

Purchase order

- New item category
- New order type (at field selection)
- Validity period in header of purchase order
- Limits in the item
- No material number
- No goods receipt or service entry sheet
- Account assignment type "unknown" is allowed
- Accounting data for the item suggested in invoices
- Additional or multiple account assignment possible for Invoice Verification
- Validity period and limit checked in Invoice Verification

- New item type "B" for blanket purchase orders
- New purchase order type: FO instead of NB

Advantages of Blanket Purchase Orders

SAP

Low transaction costs, as ...

- These have a longer validity period
- You do not require a purchase order for individual procurement transactions
- No goods receipt or entry of services is performed
- You do not have to specify a material number (material group instead)
- Account assignment can be defined in purchase order, but is not mandatory
- Account assignment and multiple account assignment can be changed in Invoice Verification
- Validity period and limit are checked in Invoice Verification
- They are linked with budget control
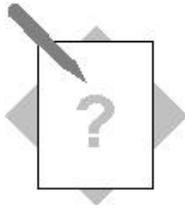
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Exercises

Unit: Procurement of Consumable Material

Topic: Blanket Purchase Orders
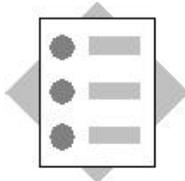
At the conclusion of this exercise, you will be able to:

- Create a blanket purchase order for consumable materials
- Enter an invoice for a blanket purchase order
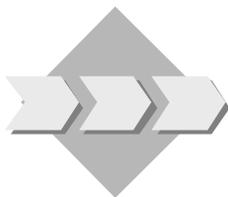
To help you to manage low-value consumable materials that are not required regularly, you are testing how you can procure consumable materials using a blanket purchase order. You then enter invoices for the blanket purchase order.

5-1 Create blanket purchase order

Your Purchasing department has reached an agreement with the office supplies company, **Bürohandel Leifritz Gr.**## that plant **1000** (Hamburg) can procure office materials by fax. This arrangement applies immediately and is valid until the end of next year.

Create a framework order for the vendor **Bürohandel Leifritz Gr.**##.

What is the number of the vendor master record for this company?_____

You are part of purchasing group T## (**LO020-##)** and **purchasing organization IDES** (1000).

Choose the item category for blanket purchase orders (=_____).

As this purchase order is used to procure office materials for different cost centers, you do not know the account assignment category when you place the order.

Enter the relevant account assignment category (=_____).
Enter "office materials" as a short text.

You do not expect the value of the office materials to exceed 5000 UNI. Define the total limit for Invoice Verification as 6000 UNI.
What is the purpose of the entry in the *Expected value* field?

_____

Choose the material group for office materials.

PO number:_____

5-2 Enter invoice for blanket purchase order

The Paper Chain company sends you the invoice below. Use Logistics Invoice Verification to enter it.

In the item line, enter the required account assignment data by choosing **Account assignment**.

Bürohandel Leifritz GmbH Gr.##
Mittermaierstrasse 112
27691 Köln

Invoice number: RE-D1##

[Köln, Current date]

IDES
Werk Hamburg
Altersdorferstr. 13
22299 Hamburg

In accordance with your fax of… and purchase order number: 450000#### we are invoicing you for the following:

Itm	Qty	Description	Unit price	Total value
10	50 pcks	White paper	10.00 UNI/pack	500 UNI

	Distributed to:	Cost center T-L##	10 packs	100 UNI
		Cost center T-HR7A##	40 packs	400 UNI

Total net value: 500 UNI

Plus 10 % tax: 50 UNI

Gross total amount: **550 UNI**

The arranged payment conditions apply

Both invoice items are posted to G/L account 476000 (consumption of office material).

Document number: _____

5-3 Display purchase order

Display your blanket purchase order. What is the actual value of the purchase order item?

_____

Display the purchase order history. Select and display the invoice document. Go to the accounting document. Which G/L accounts were posted?

_____

_____

_____

_____

5-4 Optional: Enter other invoices

Enter other invoices for your blanket purchase order. Make the invoice amount greater than the limit allowed for the purchase order.

Were you able to post the invoice when it exceeded the limit?
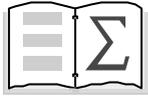
_____

Procurement of Consumable Matl: Unit Summary

SAP

You are now able to:

- **Describe the differences between the procurement of stock material and consumable material**

- **Create purchase requistitions manually and analyze them**

- **Convert purchase requisitions into purchase orders**

- **Use blanket purchase orders**

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Solutions

Unit: Procurement of Consumable Material

Topic: Purchase Requisitions

1-1   Create purchase requisition

(Logistics ® Materials Management ® Purchasing)
® Requisition ® Create

Document type	NB

Default data for items	
Acct assgmt cat.	K
Plant	1000
Req. tracking no.	GR##
Requisitioner	IH##

Item 10	
Material	T-RM3##
Qty	5 pcs
Cost center	4100

® Goto ® Account assignment ® Change display

Qty	3
Cost center	4100
G/L account	400000
Qty	2
Cost center	4110
G/L account	400000
Distribution indicator	1
"Partial invoice" indicator	1
GR	☑
GR non-valuated	☑
IR	☑

Item 20	
Material description	*Testing instrument-##*
Qty	*1 pc*
Delivery date	*Same as item 10*
Purchasing group	*Same as item 10*
Material group	*R1131*
Valuation price	*525 UNI*
G/L account	*400000*
Cost center	*4100*

1-2   Display purchase requisition for requirement tracking number

® Requisition ® List displays ® General

Enter your requisition tracking number and *execute*. Select the requisition and choose *Display requisition*. To check the processing status, choose *® Goto ® Statistics ® General* or go to your list of purchase requisitions.

Processing status for both items is N, not processed.

Solutions

Unit: Procurement of Consumable Material

Topic: Purchase Order with Reference to Purchase Requisition

2-1 Create purchase order

(Logistics ® Materials Management ® Purchasing)
Purchase order ® Create ® Vendor/supplying plant known

Display your purchase requisition in the document overview and convert it to a purchase order using the drag and drop function. You can also enter the purchase requisition number and item directly in the item overview.

Use the data below:

Vendor: *T-K12C##;*
purchasing group: *T-##*

Purchase prices:

Sensor-##:   15 UNI / pc
Testing instrument-##:   Same as valuation price in purchase requisition

2-2 Display purchase requisition

® Requisition ® Display

To find out the processing status of each purchase requisition item, choose *® Goto ® Statistics ® General*.

Processing status is B, ordered.

Display purchase order

® Purchase order ® Display

The item overview contains the purchase requisition number of each item.

Solutions

Unit: Procurement of Consumable Material

Topic: Goods Receipt

3-1 Enter goods receipt

(Logistics ® Materials Management ® Inventory Management)
® Goods Movement ® Goods Receipt ® For Purchase Order
® PO Number Known

Choose your PO number via F4 help or the document preview, or enter it manually.

3-2 Display material document

Choose your material document from the document overview and switch from the goods receipt entry screen to the display mode.
Switch to the accounting document.

The accounting document contains posting lines for the testing instrument only. The sensors were not valuated at goods receipt because the material is subject to multiple account assignment.

3-3 Display purchase order history

(Logistics ® Materials Management ® Purchasing)
Purchase order ® Display

Use the document overview for your own personal purchase orders.

Choose the document overview. Double-click to display your document. To go to the purchase order history, choose the item details in the PO history tab page.

Alternatively:

Go from the material document to the purchase order (see solution 3-2) by double-clicking the purchase order number in the item overview of the material document. In the purchase order, you go to the purchase order history as described before.

Yes, the purchase order history of material T-RM3## does show the delivered quantity, but at the value of 0 UNI. This is because goods receipts are not valuated when there is multiple account assignment.

Solutions

Unit: Procurement of Consumable Material

Topic: Invoice Verification

4-1   **Enter invoice**

(Logistics ® Materials Management)

® Invoice Verification® Logistics Invoice Verification ® Document entry ® Enter invoice

Document date	*Today's date*
Reference	*RE-C1##*
Amount	*660*
Tax amount	*60*

Choose the purchase order document for vendor **T-K12C##** via F4 help or enter the purchase order number.

Simulate and post the invoice.

4-2   **Display purchase order history records**

(Logistics ® Materials management) ® Purchasing ®   Purchase
*   order ®Display*

Enter the number of the purchase order directly or use the document overview for your purchase orders.

Display the purchase order histories of both items.

To go to the invoice verification document, double-click the invoice document number.

Itm	Account	Short text	Material	Cost center	Amount
1	*T-K12C##*	*C.E.B Berlin*			*660 -*
2	*400000*	*Consumption Raw materials1*	*T-RM3##*	*4100*	*45*
3	*4000000*	*Consumption Raw materials1*	*T-RM3##*	*4110*	*30*
4	*191100*	*GR/IR clearing*	*Testing*	*4100*	*525*

		(external)	instr.		
5	154000	Incoming tax			60
6					

Solutions

Unit: Procurement of Consumable Material

Topic: Unknown Accounting (optional)

Ac-1 Create purchase requisition

(Logistics ® Materials Management ® Purchasing)
® Requisition ® Create

Document type	*NB*

Default data for items (or directly in item 10)	
Acct assgmt cat.	*U*
Plant	*1000*
Req. tracking no.	*U##*
Requisitioner	*IH##*

Item 10	
Material description	*Testing instrument ALPHA-##*
Qty	*1 pc*
Delivery date	*(in one week)*
Purchasing group	*T##*
Material group	*R1131*
Valuation price	*525 UNI*

Ac-2 **Create purchase order**

(Logistics ® Materials Management ® Purchasing)
Purchase order ® Create ® Vendor/supplying plant known

Display your purchase requisition in the document overview and convert it to a purchase order using the drag and drop function. You can also enter the purchase requisition number and item directly in the item overview.

Use the data below:

Vendor: *T-K12C##;*
purchasing group: *T-##*

You have to change the account assignment category, because in the purchase order the assignment category U is only valid for special item categories. For this you need to know which cost object you need to use.

Acct assgmt cat.	*K*

G/L account	*400000*
Cost center	*4100*

Solutions

Unit: Procurement of Consumable Material

Topic: Blanket Purchase Orders

5-1   **Create blanket purchase order**

Logistics ® Materials Management ® Purchasing ® Purchase order ® Create ® Vendor/supplying plant known

PO type	*Framework order*
Vendor	*T-K12D##*

Header/Org. data	
Purchasing organization	*IDES (1000)*
Purchasing group	*T## (LO020-##)*
Company code	*IDES (1000)*

Item data: Item 10	
Acct assgmt category	*U*
Item category	*B*
Short text	*Office materials*
Material group	*006*
Plant	*1000*

Tab: Limits	
Overall limit	*6000*
Expected value	*5000*

The "Expected value" is used as a criterion for possible release procedures. Depending on the account assignment category, a commitment is also created in CO.

5-2 Enter invoice for blanket purchase order

Logistics ® Materials Management ® Invoice Verification
® Logistics Invoice Verification ® Document entry
® Enter invoice

Document date	*Today's date*
Reference	*RE-D1##*
Amount	*550*
Tax amount	*50*

Choose your purchase order document for vendor **T-K12A##** via F4 help or enter the purchase order number.

Choose the item for the office materials and post 100 UNI of the invoice to cost center **T-L##** and 400 UNI to cost center **T-HR7A##**.

Simulate and post the invoice.

5-3 Display purchase order

® Purchase order ® Display

Use the document overview for your own personal purchase orders. Double-click to display your document.

The *Limits* tab page on the item detail screen contains the current actual value of the purchase order item. There is also a tab for the purchase order history.

Optional: Enter other invoices

Proceed as in exercise 5-2, choosing the relevant data (for example, amount: 6600, tax 600 UNI

You can still post the invoice when it exceeds the order limit, but the system blocks it for payment because of the price variance.

Procurement of External Services

Contents:

- **Master Data**
- **Purchase Order**
- **Maintaining and Releasing Service Entry Sheets**
- **Invoice Verification**

At the conclusion of this unit, you will be able to:

- **Name the most important master data used in the procurement of external services**

- **Describe the basic steps in the procurement of external services**
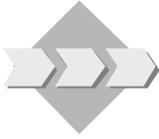
- **Your company occasionally requires small maintenance tasks (for example, changing defective lights) to be carried out by external contractors.**

- **Evaluate how the R/3 System manages this process.**

Procurement of External Services Cycle

Determination of requirements

- User department
- PM Plant Maintenance
- PS Project System

Service specifications are created

RFQ

Source determin.

Vendor selection

Bid invitation (RFQ)

Maintain and compare quotations

Purch. order

PO monitoring

Service entry

Service acceptance

Invoice verif.

Payment

PaulConnelly Transfer Date 9,500

PO   Invoice   ?

Service Master Record

Service no. 1540

- Texts
- Units of measure

Service conditions 200

Service master record

PM Plant Maintenance

Plant maintenance order

PS Project System

Network

MM Procurement

Purchase order

PReq.

Specs

Applications

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- A service master record contains a service description and a unit of measure, for example, hour.
- You can assign a price to each service master record via the conditions.
- This data can be obtained from various SAP applications.

Defining Price via Master Conditions

Conditions level

1580
1560
1540
- Senior consultant   K4
1 day

2100 UNI

Service

1580
1560
1540
- Senior consultant   K4
1 day
- ABC Software Ltd
 2000 UNI

Service
Vendor

1580
1560
1540
- Senior consultant   K4
1 day
- ABC Software Ltd
- Plant 1 (Boston)
1950 UNI

Service
Vendor
Plant

Purchase requisition

Vendor   ?

- Service   No. 1540

2100 UNI

Purchase order

ABC Software Ltd
- Service   No. 1540
 Plant 2   (Chicago)
   2000 UNI
- Service   No. 1540
 Plant 1   (Boston)
   1950 UNI

Copied to document

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- There are several ways of storing long-term prices for services in the form of service conditions:
  - At the service level (market price/own estimate)
  - At the service and vendor level
  - At the service, vendor, and plant level
- Prices stored in the system are automatically proposed in service specifications.

Stock Material <=> Services

Purchase order # 12345 Jan. 27

Item 10 | Material : Steel - 01
Order quantity : 250 pcs

GR for PO 12345, item 10

Feb. 3

Purchase order # 12345 Jan. 27

Item 10 | Repair printing press

- Detailed description of service ?
- Order quantity ?
- Acct assgmt ?

Specs

Cost control via limits !

Service entry sheet Feb. 3

Item 10

Oil filter changed

Cctr 123

Limit adhered to ?

Release procedure | Acceptance

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- Stock materials are subject to inventory management, whereas services are procured for direct consumption.

- As well as the other account assignment categories, you can use the account assignment category U (unknown) for service items, as the account assignment is often not yet definite when the goods are ordered.

- When you procure materials, you already know a lot of information, such as the exact order quantity.

- When you procure services, however, you often do not yet know the exact service description or the order quantity (for example, when a printing press needs repair, you do not know whether the vendor just needs to adjust settings or whether he or she has to replace parts).
You often do not know how long it will take or can only give an estimate. To control the costs, you can define value limits.

SAP

Purchasing document

Header
- **General data**
- **Statistics**
- **Messages**
- **Conditions**

Item
- **General description: Software implementation**
- **Date: Oct. 31**

Service lines
- **Description of service**
- **Qty**
- **Conditions**

Specs

Service specifications

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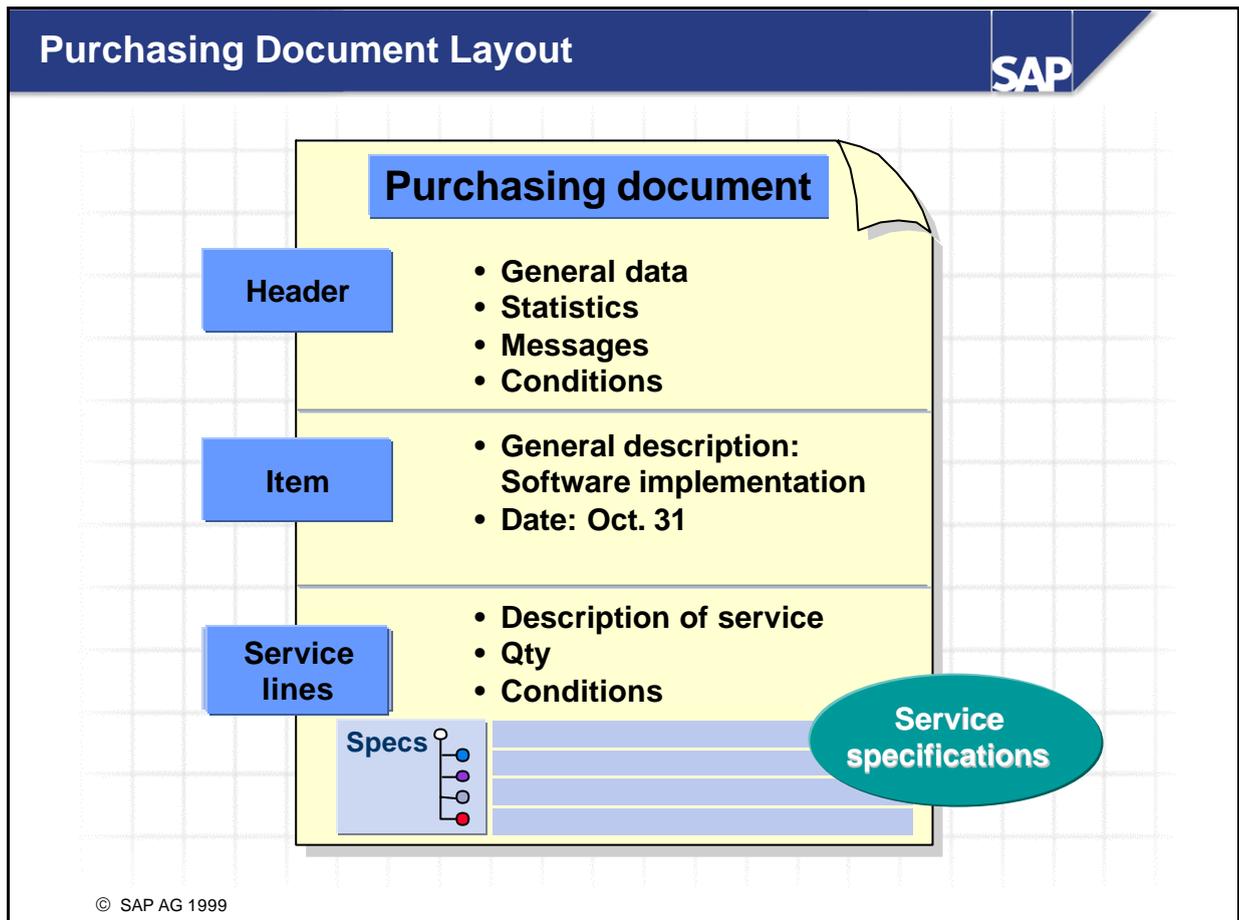
- Materials are procured at item level.

- Services are procured below item level. The item type D activates the service functions and controls or allows you to create service specifications.

- An item contains a short text, which is a general description of what you intend to procure. The service specifications are an exact description of the service.

Service Specifications in the Purchasing Document

Service specifications

01	**Selection of software components**

Outline level | 01 Define requirements

Service line | Consultant   K4   10 days   at 2100 UNI

02	**Adapt components**

01 Component   A

Consultant   K3   5 days   at 1900 UNI

02 Test configuration

Consultant   K3   4 days   at 1900 UNI

? **Unplanned services to a max. of 60000 UNI**   Value limit

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- You can format complex service specifications clearly using outline levels. You can assign any number of service lines to each outline level.

- Work that is not contained in the outline or service lines cannot be covered with value limits for unplanned services.

Service Entry and Acceptance

Entry

Service entry sheet

Total value
22000 UNI

Services
.
.
.

Accept.

Service entry sheet

FI and CO update

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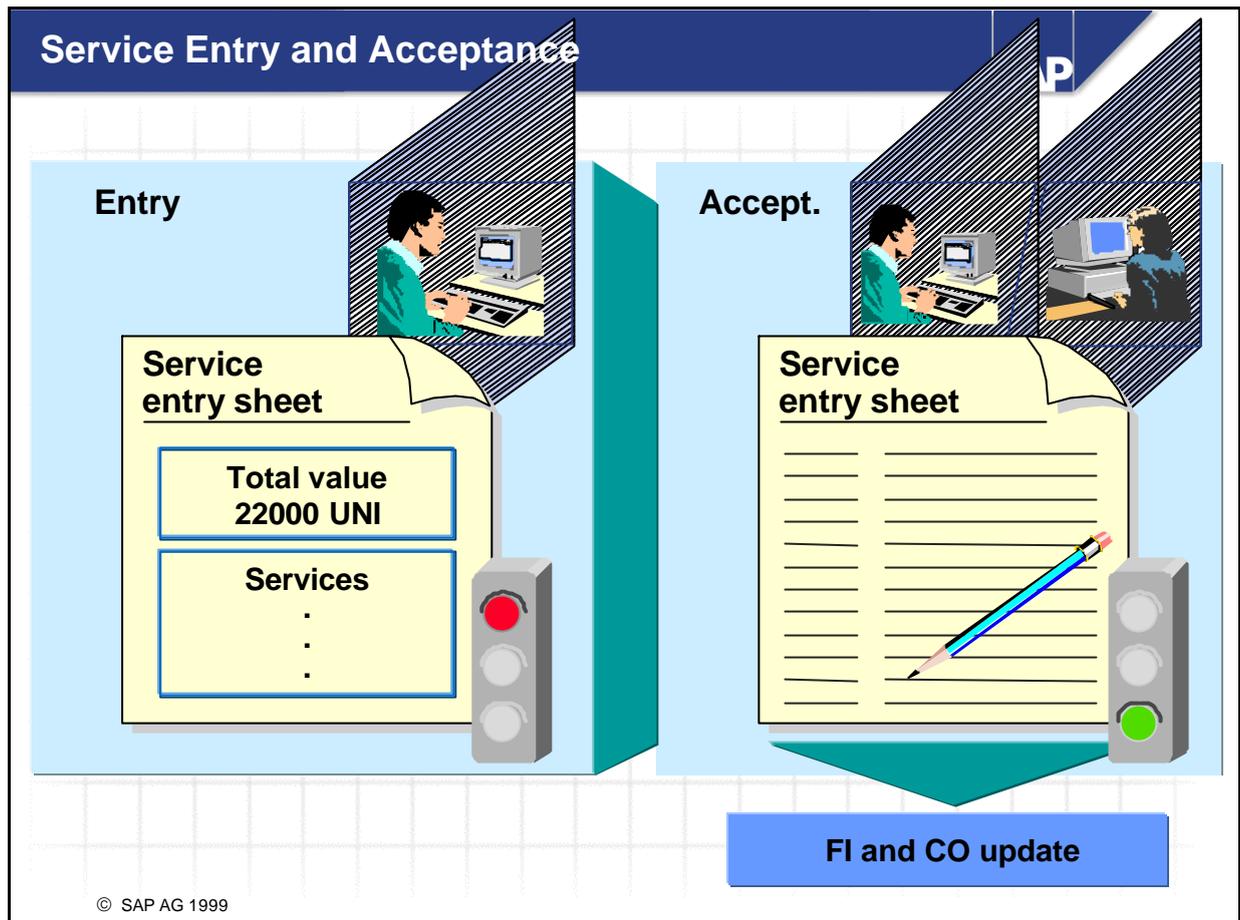
- The system stores services that have been performed in service entry sheets. The relevant postings are made in Financial Accounting and Cost Accounting when the service entry sheets are signed off. Service entry sheets can be entered and signed off in one transaction or in two steps.

- When entering services, you reference the purchase order. You can copy planned services directly from the purchase order into the service entry sheet. You do not give an exact description of unplanned services or their quantity and price details until you enter them. The system checks whether the unplanned services adhere to the limit defined in the purchase order.

- You can set up release procedures for service entry sheets.

Invoice

**ABC
Software GmbH**

26000 UNI

Vendor invoice

Sheet 1 31 Mar.

o.k.
?

Value 20000 UNI

**Service
entry sheet**

**Vendor: ABC
Software GmbH**

**PO no.   0346722
PO itm   01**

**Sheet 1   20000 UNI
Sheet 3   6000 UNI**

26000 UNI

**Invoice
document**

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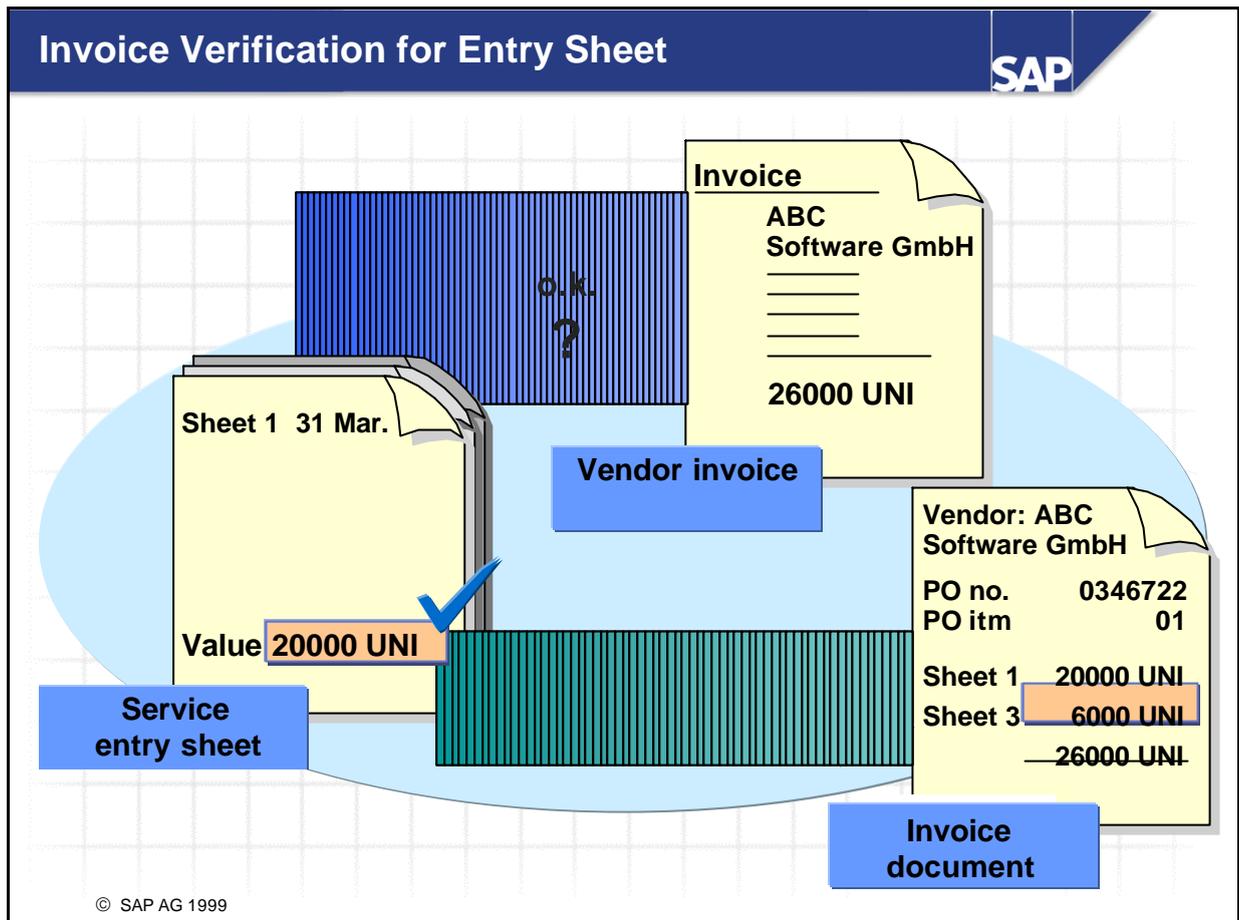
- The invoice verification procedure is carried out with reference to the purchase order.
- This means that all service entry sheets signed off for this purchase order are suggested for invoice verification.
- The system compares the prices on the invoice with the prices from the service entry sheets.
- If there are no discrepancies, you can enter and post the invoice.
- If the system finds any discrepancies, it blocks the invoice for payment.

Purchase Order History

SAP

Follow-on activities

Serv.ent.sheet

21000 UNI = SEnt

- All services performed - entered/not signed off

Serv.ent.sheet

= GR

- All services performed - entered <u>and</u> signed off

Invoice 5678
Vendor A
Software
implement. = IR
10500 UNI

All invoices

Purch. ord. 1234

Specs

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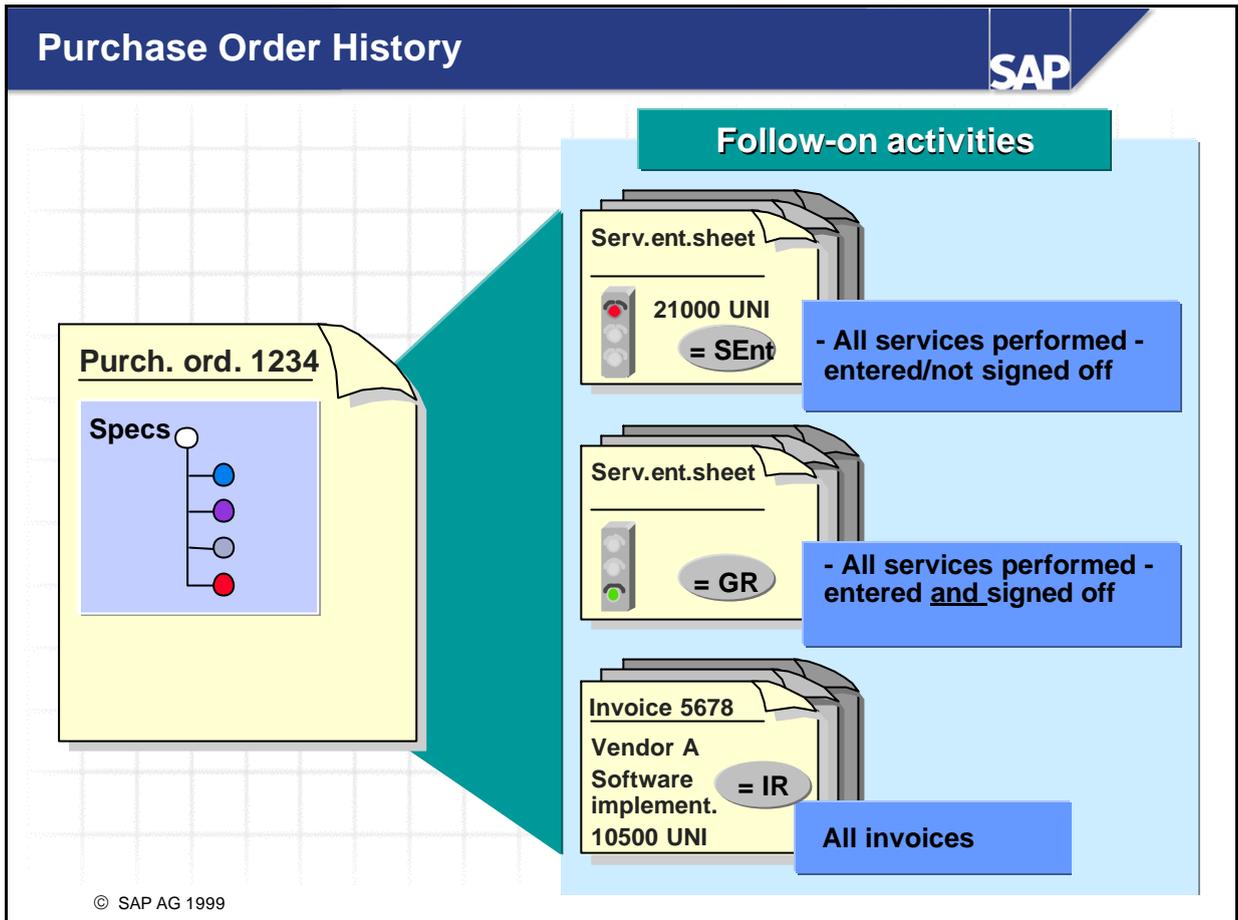
■ The purchase order history lists all the follow-on activities for a particular purchase order; that is, all services that have been performed, entered, and written off, and all invoices that have been entered.

Exercises

Unit: Procurement of External Services
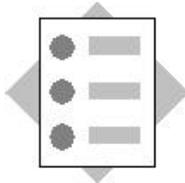
At the conclusion of this exercise, you will be able to:

- Display service master records and conditions for service master records

- Create a purchase order for external services, taking into account value limits for unplanned services

- Maintain and accept service entry sheets

- Use Logistics Invoice Verification to post a vendor invoice for external services
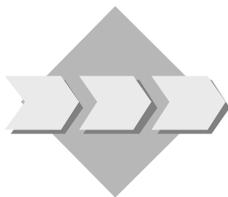
The fluorescent tubes in your offices have to be replaced because of plant maintenance work. An external service provider will be carrying out this work. Test the procurement process for external services in the R/3 System.

1-1   Display service master record

Display the service master records **T-LM1##** (dismantling of fluorescent lamp ballast) and **T-LM2##** (installation of fluorescent lamp ballast).

1-1-1 Go to the long text for each of the services.

1-1-2 In which unit of measure are the services managed?

_____

1-2   Display conditions for vendor master records

Have conditions been stored for vendor **T-K12E##** (Elektroblitz GmbH Gr.##) in both the aforementioned service master records for purchasing organization 1000? Make a note of the vendor's price for each service.

T-LM1##: _____

T-LM2##: _____

1-3 Create purchase order

Create a purchase order for vendor **T-K12E##** for the aforementioned services **T-LM1##** and **T-LM2##**. In the **purchasing organization IDES** (1000), you are a buyer in purchasing group **LO020-##** (T##) responsible for procuring external services. Service items are managed under **material group 007** in your company. Do not forget to choose the appropriate **item category for services**.

Since you do not know who will be debited for the goods when you order them, you use **account assignment category U**. Enter the short text that describes what you intend to procure.

Both services are required in plant **1000** in quantities of **100 pieces**. Include another value limit for unplanned services for a total limit of **200 UNI**. The expected value is the same as the amount of the total limit. Make a note of the purchase order number:

PO number:_____

1-4 Service entry and acceptance

1-4-1 The service provider **T-K12E##** sends you a service entry sheet for the first stage. In the service entry sheet, the vendor has specified that **60 pieces** of each service have been performed.

Maintain the service entry sheet in the system and reference the purchase order from exercise 1-3.

Enter the following short text for the description of the service entry sheet: **Service entry stage 1**: The number of the entry sheet at the service provider is **4700##**.

Cost center **T-L##** will be debited for this procurement transaction.

Create the service entry sheet and accept the service at the same time. Make a note of the document number.

Document no.:_____

1-4-2　The service provider sends you the service entry sheet for the second stage. Enter the remaining **40 pieces** of your planned services.

The service entry sheet has the description **Service entry stage 2**. The external service provider manages the entry sheet under the number **4800##**.

The account assignment is the same as that in exercise 1-4-1.

During the renovation work in the second stage, the service provider finds that two fluorescent lamp ballasts are defective and have to be replaced. After consultation with you, the damage is repaired. Enter the replacement of the two fluorescent lamp ballasts as unplanned services at a value of **75 UNI** per piece. Note that a service master record has not been created for this service.

Enter the service and create a short text explaining that a service master record does not exist for the service. Enter the services and accept the service entry sheet. Make a note of the document number

Document no.:_____

1-5　Enter vendor invoice

You enter the following invoice for your purchase order. Use Logistics Invoice Verification. Note that you can only choose service entry sheets that have already been accepted. Post the document and make a note of the invoice document number.

Document number:_____

```
                              Elektroblitz GmbH Gr.##

                              Mozartstrasse 12

                              60123 Frankfurt



                              Invoice number:   RE-E1##


IDES
Werk Hamburg
Altersdorferstr. 13


                              Frankfurt, [current date]

22299 Hamburg


With reference to purchase order no. 450000####, we are invoicing you for the following
services in accordance with the items in sheet no. 4700## and 4800##.:



     Invoice amount:   1,500.00 UNI

     plus 10 % tax      150.00 UNI

     1,650.00 UNI


The arranged payment conditions apply

Best regards

Elektroblitz GmbH Gr.##
```

1-6   Check follow-on activities for purchase order

Go from the purchase order history to your service item.

1-6-1 How many service entry sheets already exist?

_____

1-6-2 Which of the service entry sheets have already been accepted?

_____

1-6-3 Is there an FI document for the service entry sheets that have been accepted?
       Give reasons for your answer.

_____

Procurement of Ext. Services: Unit Summary

SAP
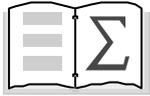
You are now able to:

- **Name the most important master data used in the procurement of external services**

- **Describe the basic steps in the procurement of external services**

Solutions

Unit: Procurement of External Services

1-1   Display service master record

Logistics ® Materials Management ® Service Master ® Service ® Service master

Select the services from the overview.

1-1-1 *Long text: ....*

1-1-3 Both services are managed in the unit pc (piece).

1-2   Display conditions for vendor master records

Logistics ® Materials Management ® Service Master ® Service ® Service conditions ® For vendor without plant ® Display

Purch. organization	*1000*
Vendor	*T-K12E##*
Service number	*Input not required*

T-LM1##:   *4.50 UNI / piece*

T-LM2##:   *9 UNI / piece*

1-3   Create purchase order

Logistics ® Materials Management ® Purchasing ® Purchase order ® Create ® Vendor/supplying plant known

Vendor	*T-K12E##*

Org. data	
Purch. organization	*1000*
Purchasing group	*Group*

Item data	
Acct assgmt cat.	*U*
Item category	*D*
Short text	*Any entry*
Material group	*007*
Plant	*1000*

Services	
Line 10	
Service no.	*T-LM1##*
Qty	*100*
Line 20	
Service no.	*T-LM2##*
Qty	*100*

Limits	
Total limit	*200*
Expected value	*200*

1-4 Service entry and acceptance

1-4-1 Service acceptance: stage 1

Logistics ® Materials Management ® Service Entry Sheet ® Maintain

Use the document preview to choose your purchase order for the services.

Purchase order no.	*See exercise 1-3*

Entry sheet ® Create ® Empty page
(alternative button [🗋] *)*

Short text	Service entry stage 1

Basic data	
Acct assgmt cat.	*K (cost center)*
External number	*4700##*

Services	
Line 10	
Service no.	*T-LM1##*
Qty	*60*
Cost center	*1000*
Line 20	
Service no.	*T-LM2##*
Qty	*60*
Cost center	*1000*

Instead of entering the service master records manually, you can copy the required data directly from the purchase order by choosing [Service selection].

Choose the acceptance button and proceed.

Save the service entry sheet.

1-4-2 Service acceptance stage 2

Proceed as in exercise 1-4-1. Note that the quantity of the planned services that have been performed is now only 40 pieces.

Maintain a line in the service entry sheet for the unplanned service with the short text "Exchange fluorescent lamp ballast".
The quantity is 2 pieces at 75 UNI per piece.

Accept and save the service entry sheet.

1-5 Enter vendor invoice

(Logistics ® Materials Management ® Invoice Verification
® Logistics Invoice Verification ® Document entry
® Enter invoice

Document date	*Current date*
Posting date	*Current date*
Reference	*RE-E1##*
Amount	*1650*
Tax amount	*150*

Purchasing doc.	*[PO no. from exercise 1-3]*

The system proposes the service entry sheets that have been accepted.

Simulate and post the invoice.

1-6 **Check follow-on activities for purchase order**

Logistics ® Materials Management ® Purchasing ® Purchase order ® Display

Choose your purchase order by double-clicking within the document overview.

There is a tab for the purchase order history in the item detail screen.

1-6-1   Available service entry sheets:

See category LERF

1-6-2   Service entry sheets that have been accepted:

See category WE

1-6-3   *Yes, there is an accounting document because the system updates the accounts in FI as a result of the service acceptance. The system also creates a controlling document, which debits the account assignment object.*

Contents:

- **Reporting at Document Level**
- **Reporting with the Logistics Information System (LIS)**

At the conclusion of this unit, you will be able to:

- **Explain the difference between standard reporting and standard analysis**

- **Describe the basics of the Logistics Information System**

- **Perform basic standard reporting and standard analyses**

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Reporting in MM: Business Scenario
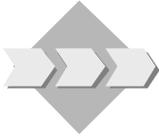
- **Your company monitors all areas regarding possibilities of reducing cost and improving efficiency.**

- **The project team analyzes the reporting functionality of SAP R/3 at transaction and document level.**

- **The project team wants to find out if the SAP R/3 System is capable of providing management with condensed key indicators for enterprise-relevant processes in a timely manner.**

Standard Reporting
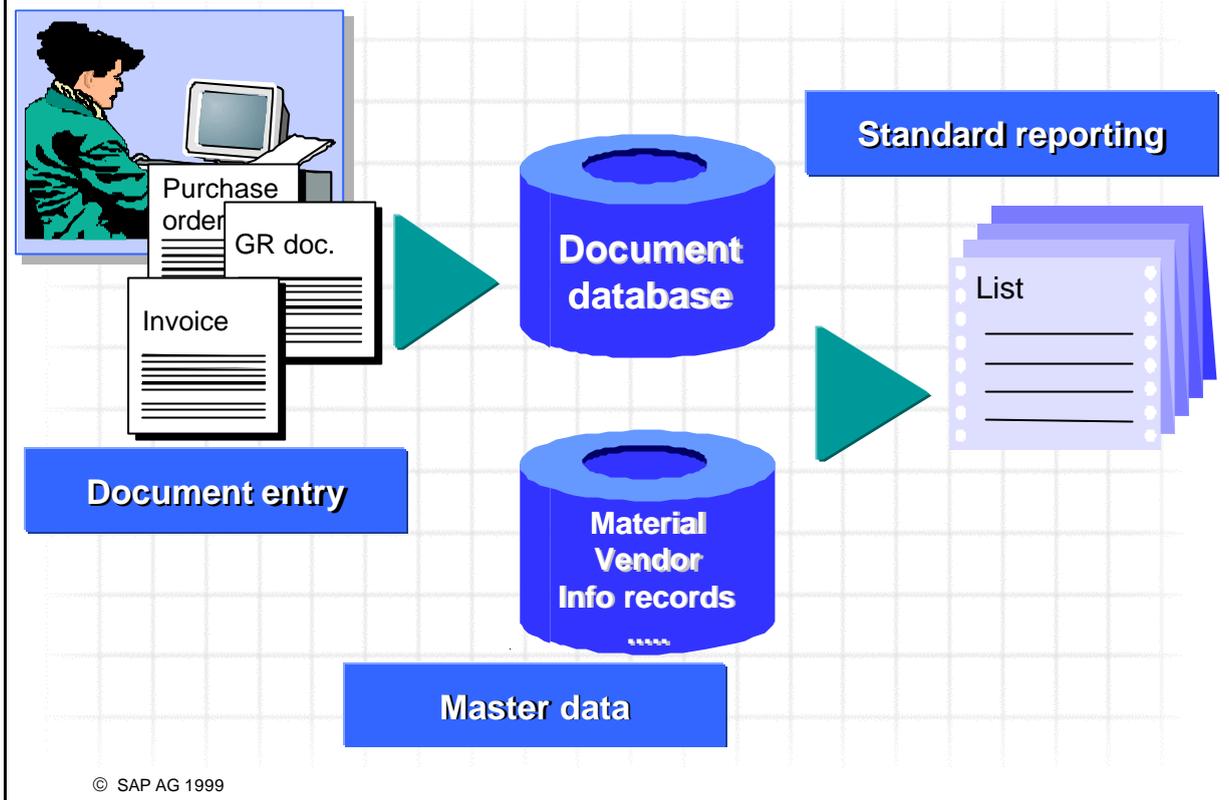
- In Purchasing, you enter a variety of documents. The R/3 System updates these documents and stores them in database tables. In the R/3 System, you can use Standard Analysis to analyze the information contained in the documents.

- As the employee responsible in Purchasing, you want to obtain an overview of your vendors and purchasing organizations. For example, you want know:

  - Which purchase orders were effected at a particular vendor for a particular period.

  - The number of purchase orders for which you have already received goods.

  - Whether a vendor complies with his or her delivery dates.

  - Whether a goods receipt and invoice receipt are correct.

  - The average value of each purchase order for a purchasing group.

- You can also carry out analyses for master data, as well as for documents. For example, you can output a list of all purchasing info records for a material or vendor, or you can obtain an overview of the material master records in your enterprise, based on particular criteria.

- The analyses in the R/3 System provide you with a quick and convenient overview, enabling you to act accordingly.

Scope of List and Selection Parameters

Scope of list	Description of scope of list
ALL	All
: :	: :
BEST	Purchase orders
: :	: :
RAHM	Outline agreements

Vendor	T-L05B03
Purch. organization	1000
Scope of list	BEST
Selection parameters	INVOICE
Document type	
Purchasing group	
Plant	1000
Item category	
Acct assgmt cat.	
Delivery date	
Validity key date	

SelParam	Descript. Selection parameters
A-ERLEDIGT	Completed RFQs
: :	:
INVOICE	Open invoices
: :	:
GR 101	Open goods receipt

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- Scope of list parameters determine which data is displayed for a document. You can decide whether you want a list in short form or whether it should contain more information (for example, lines for open purchase order quantity and value or the validity period of outline agreements). You can configure scope-of-list parameters in Customizing for Purchasing.

- The selection parameter determines which purchasing documents the report evaluates. In this example, the system will only evaluate purchasing documents for which you have still to receive an invoice. In Customizing, you can define your own selection parameters.

- If, at regular intervals, you carry out a particular list display using the same selections, it is worthwhile creating a variant. This reduces data entry time and prevents errors during entry. You can store your own variants or use existing ones.

- You can define any number of variants for a report.

SAP Logistics Information System (LIS)
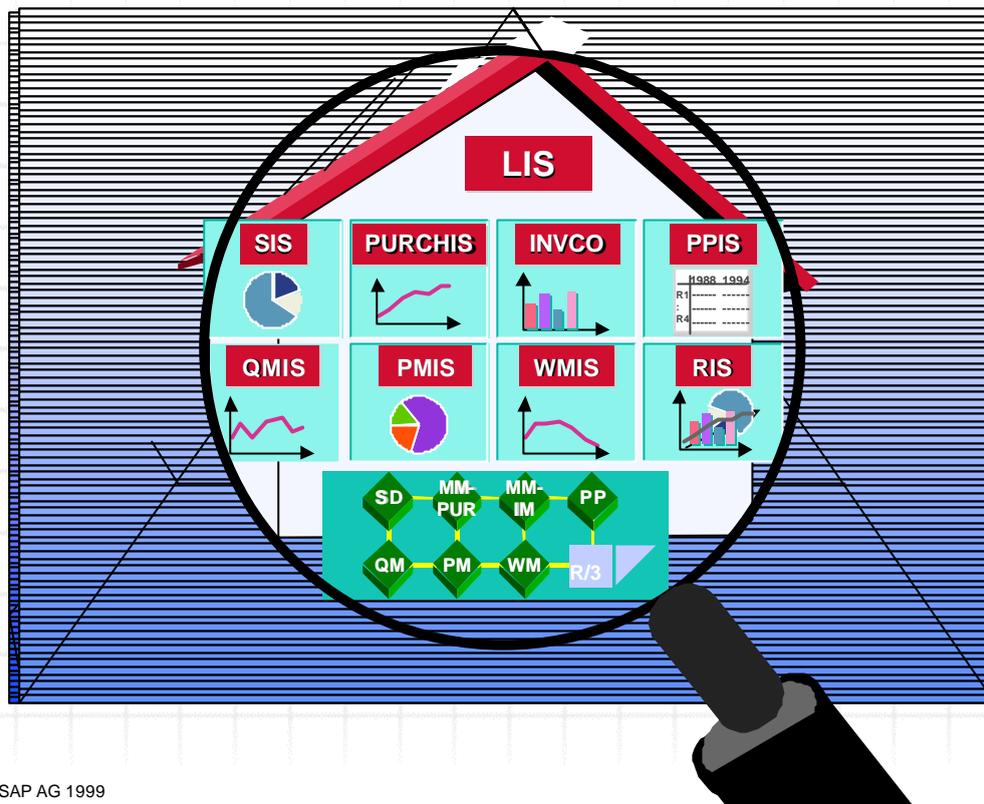
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- SAP Logistics offers a range of application-related information systems. All have a standard interface and similar basic functionality.
  All Logistics information systems have the same type of data retention. A range of special tools and ways of working emphasize the typical character of a data warehouse in the LIS.

- In Logistics, you can distinguish between the following information systems:

  - SIS   Sales Information System

  - PURCHIS Purchasing Information System

  - INVCO   Inventory Controlling

  - WMIS   Warehouse Management Information System

  - PPIS   Shop Floor Information System

  - QMIS   Quality Management Information System

  - PMIS   Plant Maintenance Information System

  - RIS   Retail Information System

The Logistics Data Warehouse in the SAP System

OLAP — Online Analytical Processing

Business Intelligence

DATA WARE-HOUSE — Info structures

S012   S001   S039   S...

OLTP — Online Transaction Processing

LIS updating

SAP R/3   SAP R/2
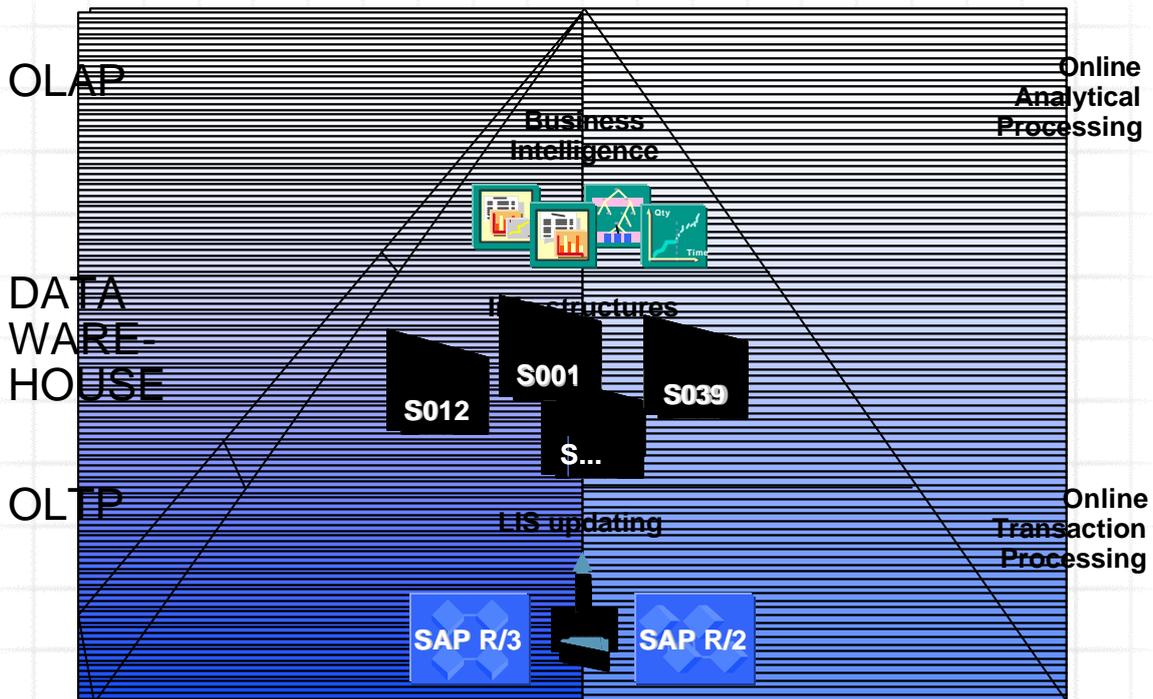
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- The information systems in the LIS are continuously supplied with data from the transaction systems (Sales and Distribution, Purchasing, Production, Plant Maintenance, and so on). This level is also known as OLTP (Online Transaction Processing). The data can come from documents in the SAP R/2 or SAP R/3 system, or from non-SAP systems.

- Important information is stored in the SAP Open Information Warehouse's own database, which is maintained in parallel to the operational systems. As data is updated periodically, the data volume is reduced quantitatively and the information is reduced qualitatively to the sections relevant to statistics.

- Convenient analysis and reporting tools are available at OLAP level (Online Analytic Processing) for analyzing data.

Logistics Data Warehouse

SAP

Info structure: Purchasing

Characteristic	Period unit	Key figure
Plant	Monthly	PO quantity
Material	Weekly	PO value
Vendor	Daily	No. of deliveries
		Last purchase order

Standard info structures

Purchasing   S&D   Production
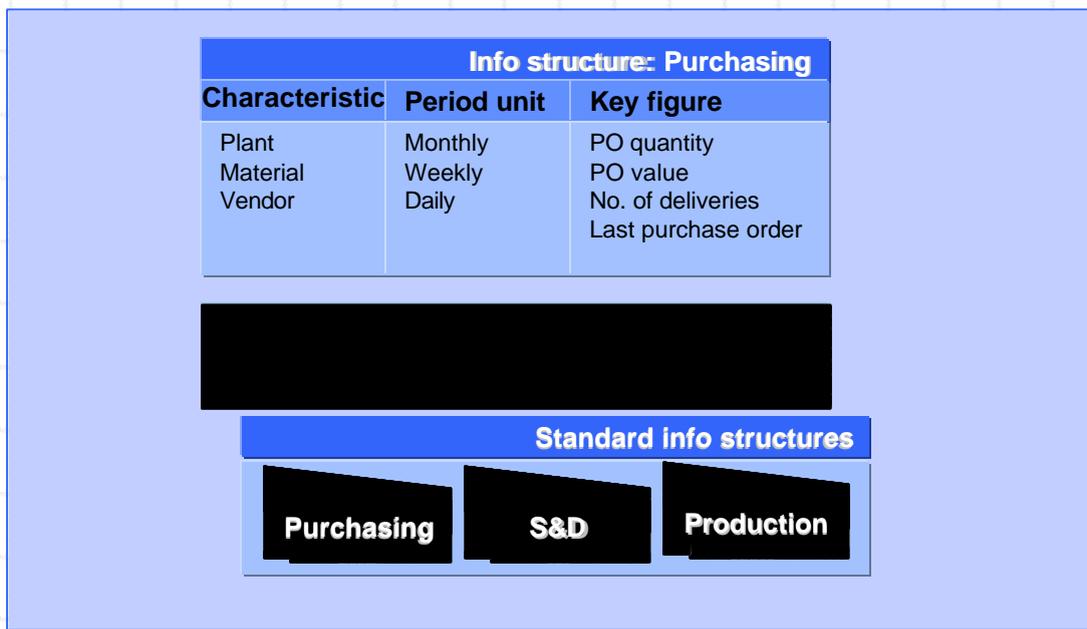
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- The physical tables in the SAP Information Warehouse are information structures, or info structures for short. These have a typical structure.

- The objects to be analyzed in the real business world go into info structures as evaluation groups in the form of characteristics. Statistical information on characteristics, such as vendor, customer, or material is aggregated. Organizational elements, such as purchasing group, material group, valuation area, plant, or storage location are also used as characteristics in info structures.

- Time base is another option for aggregation. Data is not only aggregated per characteristic, but also by period. With regard to periodicity, you can aggregate data on a daily, weekly, or monthly basis.

- The system updates Logistics key figures for each characteristic combination and periodicity. This encompasses quantitative factors informing you of measurable subject matters. Key figures can be cumulated per evaluation group, for example, order quantity, or production order quantity. They can also be a single counter, for example, "number of deliveries".

- The standard R/3 System contains various info structures for different application areas. You can use convenient tools to group characteristics and key figures into individual info structures to meet your requirements and use separate update programs to fill them with data.

From Document to Analysis

Purch. ord.

Vendor: 1000
PO date: May 15, 98

10 pcs M-01 at 1100 UNI   11 000

10 pcs M-02 at 1000 UNI   10 000

Material: M-01
Month: May 98

Vendor	PO value
1000	11 000
1100	13 000

Vendor: 1000
Month: May 98

Material	PO value
M-01	11 000
M-02	30 000

| Vendor	Material	Month	PO val.
1000	M-01	05.98	11 000
1000	M-02	05.98	30 000
1100	M-01	05.98	13 000

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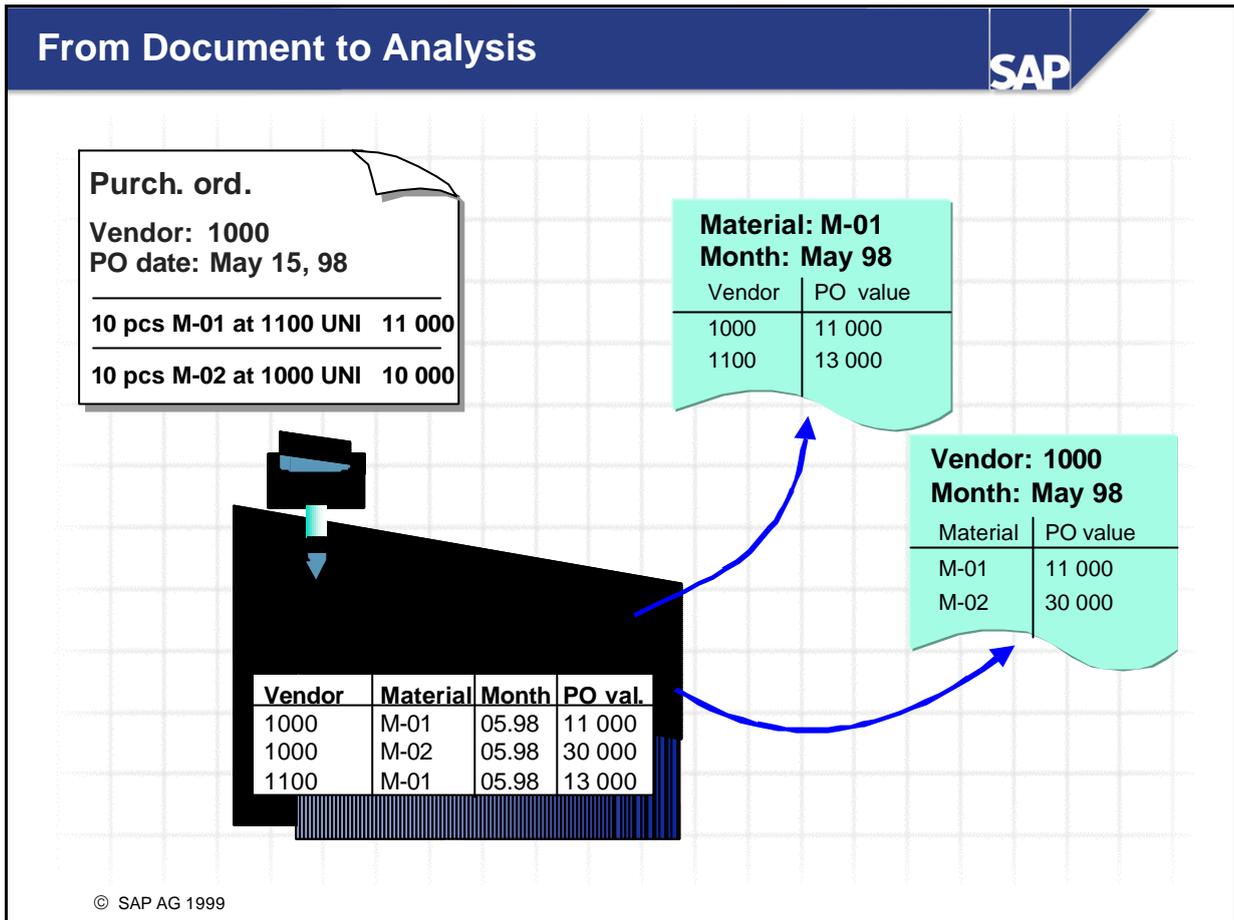
- When you post a document, as is shown here using a purchase order, the system updates the key figures of the info structures for the relevant characteristic combinations.

- If there is no data record for the characteristic combination in the document, the system creates a new data record and enters the characteristics and key figures (example: vendor 1000, material M-01, month 05.98, purchase order value 11 000).

- If the characteristic combination already exists in the info structure, the system increases or decreases the key figures in the data line by the relevant values (example: vendor 1000, material M-02, month 05.98, purchase order value (old) 20 000 + purchase order value (document) 10 000 = purchase order value (new) 30 000).

- In the various analyses, lists can be created for all possible characteristic combinations on the basis of data in the info structures.

Reporting in the LIS

Standard analysis

Advanced analysis techniques
- Selection versions
- Authorizations
- Hierarchies

EWS
Early Warning System

External data

MM   PP
SD   FI

Flexible analysis

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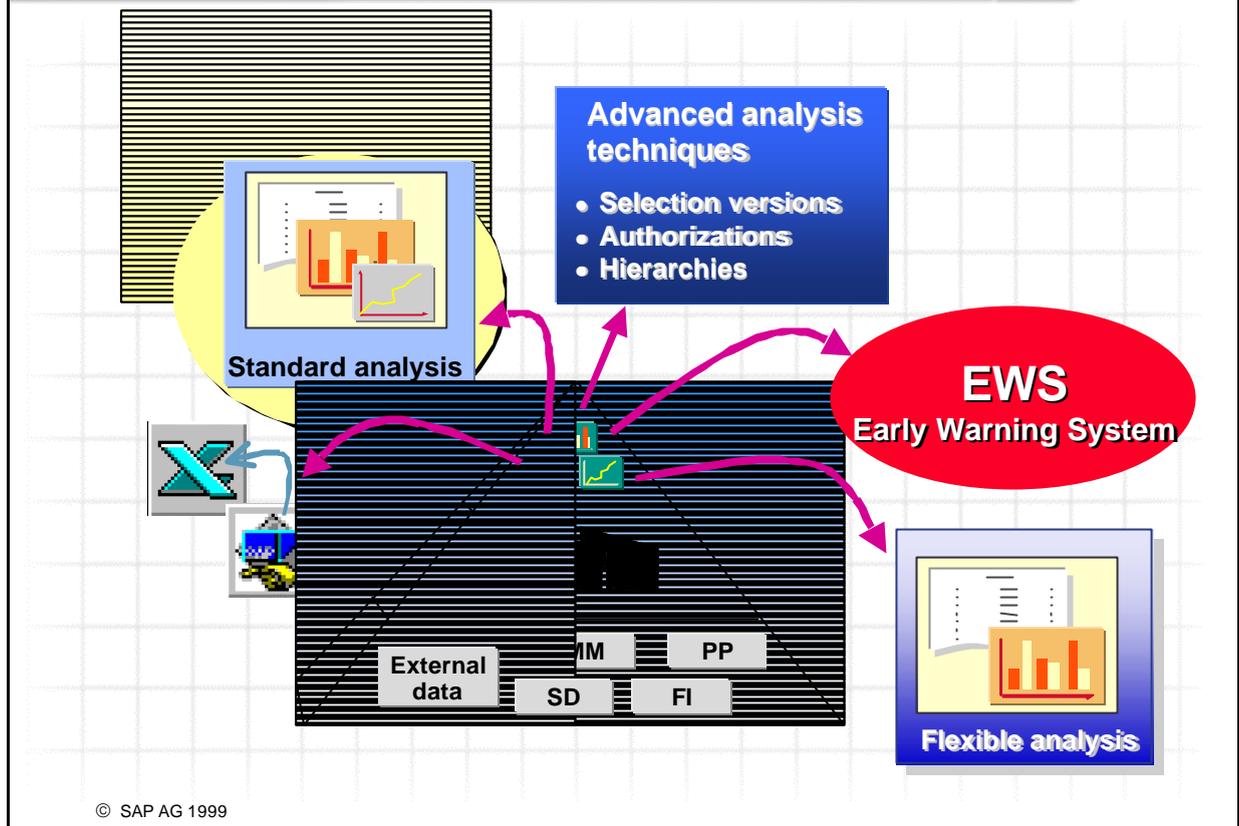
- The standard analyses in LIS offer numerous ways of analyzing data. Standard analyses offer a multitude of functions that enable a detailed and specific analysis of data.

- In each standard analysis, you can use various selection options to determine the scope of data to be analyzed. You can preset the selection of key figures you want to analyze or it can be carried out interactively during the analysis.

- You can use the Early Warning System (EWS) to look for any unusual situations and react to and correct these in good time.

- Using flexible analyses, you can individually compile and compress key figures. You can also structure the layout of your report to meet your requirements. For reports, you can also define key figures composed of computing formulas from existing key figures. This means that you can multiply key figures or calculate the quotient of two key figures, for example. The data contained in the list can be converted into graphic format.

- The Logistics Data Warehouse is open and therefore allows you to carry out analyses using external programs, such as MS-EXCEL or native SQL.

SAP

Purchasing group analysis

Purchasing group	PO value	Inv. amnt
Morgan	100 000	90 000
Smith	200 000	195 000

Drill down by vendor

Data selection
- Multiple selection
- Self-defined hierarchies
- Selection options
- Variants

Functions
- ABC analysis
- Classification
- Dual classification
- Pld act. comparison
- Cum. freq. curve
- Correlation
- Time series

Purchasing group: **Morgan**

Vendor	PO value	Inv. amnt
Miller Ltd	60 000	50 000
Russell Ltd	40 000	40 000

Drill down by period

Additional information
- Master data
- Documents
- Info jump

Purchasing group: **Morgan**
Vendor: Smith Ltd

| Month	PO value	Inv. amnt
02.1998	25 000	20 000
03.1998	35 000	30 000

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- Standard analyses provide a wide range of functions for creating presentations and analyses for the data basis in the LIS.
- The data basis for a standard analysis is established when you determine an object to analyze (for example, purchasing group, vendor, material group, and so on) and make selections.
- This data is then organized and can be displayed in an initial list and a variety of drill-down lists. Each analysis can be archived.
- You can use the standard transactions in the application to display the complete master record or document information from the various drill-down levels of the list.
- A wide range of functions can be used to individually examine the key figures and characteristic values on which the analysis is based from a business perspective. All the functions for statistical analyses are graphically supported.
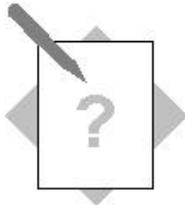
Exercises

Unit: Reporting in MM

**Topic: List Displays and the
Logistics Information System**
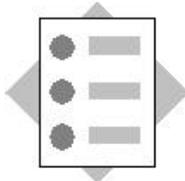
At the conclusion of this exercise, you will be able to:

- Create list displays for various documents and transactions

- Interpret the information in standard analyses
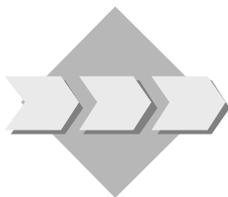
To optimize internal processes, you regularly create list displays
to inform you about the status of your purchase orders, info
records, and other documents in the system. You already use
condensed information from the Logistics Information System for
your reports to management.

1-1 Open goods receipts

Display a list of all the purchase orders for purchasing organization **1000** and plant
1000 for which goods receipts are still open. Limit the search period to the last 24
months.

To do this, choose the *Document date* field
(From: Today's date–24 months   To: current date).

Optional: Define a variant for the document overview for the purchase orders in
accordance with these specifications.

1-2 Goods receipts that have been posted

You want a list of all material documents for materials **T-RM1## to T-RM4##**
that were placed into storage in plant **1000** using movement type **101** (goods
receipt into unrestricted-use stock).

1-3 Analyze purchasing values for purchasing groups

You want to use the Purchasing Information System to determine a standard
analysis for the scope of procurement for purchasing groups **T01 to T18** for the
purchasing organization **1000**. **Limit the analysis period to the current month
and the previous month.**

1-3-1 Change characteristic display

You want to display both the name of the purchasing group and the key for the characteristic. Choose the relevant characteristic display.

1-3-2 Add key figures

You need information about the number of purchase order items and the number of deliveries. Add these two key figures to the standard analysis. Make a note of the total purchase order value and the total number of purchase order items for your purchasing group **T##**.

PO value:_____   No. of purchase orders:_____

What amount has already been settled? _____

1-3-3 Display vendors for purchasing group

With which vendors have you effected purchase orders for purchasing group **T##**? Make a note of the number of vendors and the total purchase order value.

Number_____   PO value:_____

1-3-4 Determine top five purchasing groups

Which purchasing groups had the five highest purchase order values during the analysis period? Make a note of the total purchase order value of the first purchasing group.

PO value:_____

1-3-5 Perform ABC analysis

Determine the most important vendors in terms of purchase order value for purchasing organization **1000** and purchasing groups **001 to 018**. To do this, perform an ABC analysis for the value key "purchase order value".
Choose the percentage total of the purchase order value. Segment A is 70 %, segment B is 20 %, and segment C is 10 %.
Look at the complete list for the ABC analysis of the purchase order value. Which vendor has the highest purchase order value?

Vendor:_____

Before you perform the ABC analysis, make sure you are in the initial list. From the initial list, you then switch the drill-down to the vendor.
View ® Switch drill-down... [X] ® Vendor

1-3-6 Display selection log

To interpret the result of your analysis correctly, it is important that you know the selection criteria used in the analysis. You should therefore look at the selection log for purchasing group analysis. What is the key and description of the info structure for this analysis?

Info structure   _____

1-4 Analysis of storage location

You want to use Inventory Controlling to analyze your storage location stocks and possibly transfer materials that are stored in the wrong place. Check which stocks are located in storage location **0001** of plant **1000**.

Analysis period:
From the current date minus 12 months up to the current month.

Choose the drill-down by material group and display as a graphic the receipt quantities per material group.

Expand for each month the material group with the greatest receipt quantity and display the materials for the month that has the greatest receipt quantity.

Create a top-ten list in terms of the consumption quantities.
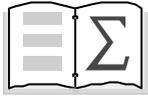
You are now able to:

- **Explain the difference between standard reporting and standard analysis**

- **Describe the basics of the Logistics Information System**

- **Perform basic standard reporting and standard analyses**

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Solutions

Unit: Reporting in MM

**Topic: List Displays and the
Logistics Information System**

1-1 **Open goods receipts**

*Logistics ® Materials Management ® Purchasing ® Purchase order ® List
displays ® By vendor*

Vendor	*(No entry)*
Purchasing organization	*1000*
scope of list	*BEST*
Selection parameter	*WE101*
Purchasing group	*(No entry)*
Plant	*1000*
Document date	*(Period within the last 24 months)*

1-2 **Goods receipts that have been posted**

*Logistics ® Materials Management ® Inventory Management
Environment ® List Displays ® Material Documents*

Material	*T-RM1## to T-RM4##*
Plant	*1000*
Movement type	*101*

1-3   Analyze purchasing values for purchasing groups

*Logistics ® Materials Management ® Purchasing ® Purchase order
® Reporting ® Purch. Info System ® Standard analyses ® Purchasing group*

Alternatively:

*Logistics ® Logistics Controlling ® Purchasing Information System
® Standard analyses ® Purchasing group*

Purch. organization	*1000*
Purchasing group	*T01 to T18 (LO020-01 to LO020-18)*
Analysis period	*(Current month and previous month)*

1-3-1   Change characteristic display

® Settings ® Char. display ® Key and description

If the column width is not sufficient to display the characteristics, you can increase the width by double-clicking the relevant column and entering a higher value for the width.

1-3-2   Add key figures

® Edit ® Choose key figures

Select the key figures *PO items* and *Deliveries* in the stock list and add them both to the selection by choosing [◀].

1-3-3   Display vendors for purchasing group

Select your purchasing group and expand it by vendor. (*® View ® Drill-down by ® Vendor*
or choose **[Drill-down by...]**)

1-3-4   Determine top 5 purchasing groups

Navigate to the original list for all purchasing groups via *® View ® Basic list*

Select the column that shows the purchase order value and choose **[*Top n...*]**. Restrict the number to 5 purchasing groups.

1-3-5 Perform ABC analysis

Go to the basic list again and then switch the drill-down to display by vendor.

Select the *PO value* column.
Choose *® Edit ® ABC analysis* and the
Total PO value strategy (%). Accept the proposed segment sizes.

In the graphic displayed, you can look at the segment overview or the individual segments in the list display.

1-3-6 Display selection log

® Extras ® Selection log

The info structure is S011 – Purchasing groups

1-4 Analysis of storage location

Logistics ® Materials Management ® Inventory Management Environment ® Inventory Controlling ® Standard analyses ® Storage location

Alternatively:

Logistics ® Logistics Controlling ® Inventory Controlling ® Standard analyses ® Storage location

Plant	*1000*
Storage location	*0001*
Analysis period	*(Current month including the past 12 months)*

Switch the drill-down to selection by material group by choosing *[Switch drill-down...]* (or *® View ® Switch drill-down*).

To go to the graphic display, choose *[Graphic...]* (or *® Goto ® Graphic*).

Select the group with the highest receipt quantity and expand it by month by choosing **[Drill-down by...]** (or *® View ® Drill-down by*).

Choose the month that has the greatest receipt quantity and expand it by material.

Select the column that shows the consumption quantities and choose *[Top n...]*. In the *Number* field, enter the value 10.

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Preface

Unit **Basics**

Unit **Planning Run**

Unit **Lot-Size Calculation**

Unit **Reorder Point Planning and Planning Evaluation**

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The Basics of Materials Planning

SAP

Contents:

- **Planning requirements**
- **Overall procedure**
- **MRP types**

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The Basics of Materials Planning: Unit Objectives

At the conclusion of this unit, you will be able to:

- **Describe the whole materials planning process**

- **Explain the prerequisites for materials planning**

- **Make a distinction between consumption-based planning and material requirements planning (MRP)**

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SAP

- **In order to carry out consumption-based planning for a material, you need to create a material master record with valid MRP data and material requirements planning for the plant needs to be activated. You must determine the necessary settings.**

Overview Materials Management

SAP

Invoice Verification

Payment (FI)

Requisition

Requirement determination

Vendor invoice — Purch.order

Invoice Verification

Materials Planning

Source determination

Storage

Inventory Management

Goods Issue — Goods receipt

Vendor selection

Purchasing

Purchase order monitoring — Order processing

Valuation

Consumption

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Materials Planning

Payment (FI)

Requisition

Requirement determination

Vendor invoice

Purch.order

Invoice Verification

Materials Planning

Source determination

Storage

Goods Issue

Goods receipt

Vendor selection

Purchase order monitoring

Purch.order
10
20

Order processing

Consumption

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Automated Procurement: Overview

- If the material master record has been maintained accordingly, Materials Planning can create purchase requisitions automatically. If source lists with valid sources of supply exist, the system automatically assigns sources of supply to the items in the purchase requisitions, based on the source list.

- The system can automatically convert purchase requisitions to purchase orders if sources of supply are assigned to the requisitions. The "Automatically generated purchase order" indicator must also be set in the material master record and vendor master record.

- In the purchase order, you can enter that you expect an order acknowledgement and/or shipping notification from the vendor. If you have entered a shipping notification, you can reference it when you post the goods receipt.

- In evaluated receipt settlement (the ERS procedure), the vendor does not send us invoices. Instead, the R/3 System creates the invoice from the data in the purchase order and the goods receipt. You need the vendor's permission to use the ERS procedure and you have to allow it in the vendor master record.

Complete Overview of the Planning Cycle
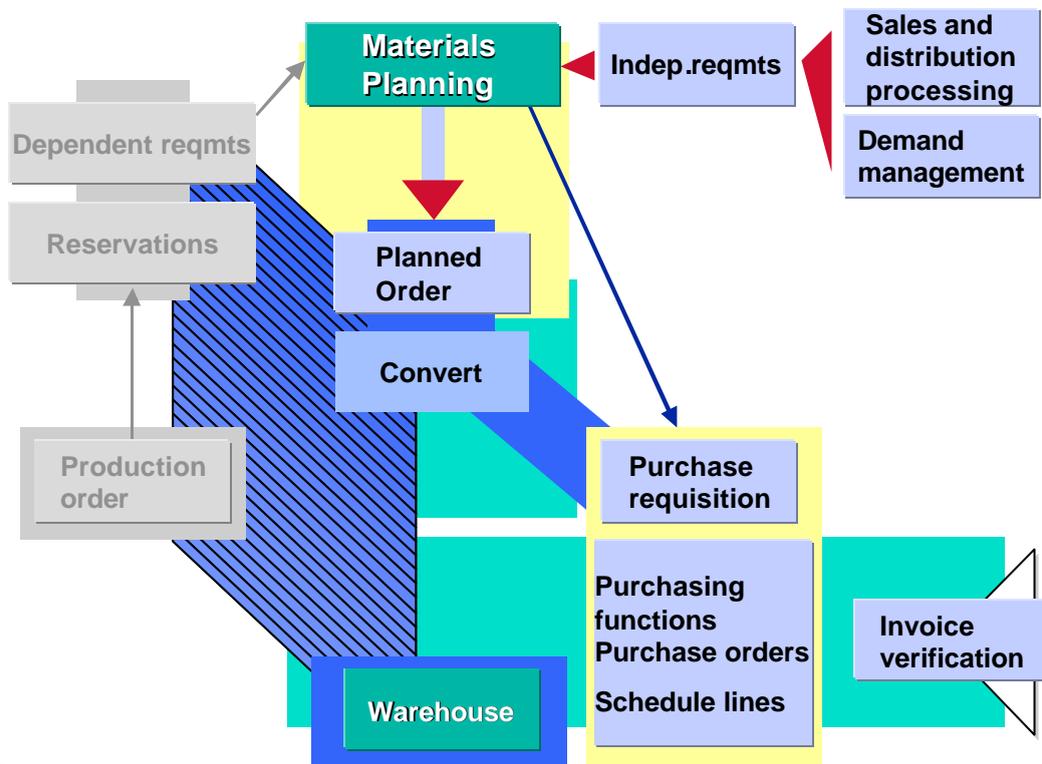
- The main task of material requirements planning is to ensure material availability, that is, to procure the requirement quantities for in-house production and for sale on time.

- The logistics chain starts off with sales and distribution and demand management. Sales and distribution receives requirements in the form of customer requirements from the market and demand management will plan sales via a sales forecast. The resulting independent requirements trigger materials planning.

- In order to satisfy demand, the order quantities and dates have to be determined and the appropriate procurement elements need to be dispatched. The procurement elements of materials planning and of external procurement are the planned orders and the purchase requisitions (for external procurement). Both are only internal elements.

- For materials produced in-house, the dependent requirements are determined by BOM explosion. Dependent requirements are the quantity of components necessary for the production of a finished product or an assembly.

- When materials planning has finished volume planning and time scheduling, the internal procurement elements must be converted into real procurement elements: the procurement element for production is the production order, the one for external procurement is the purchase order.

SAP

Plant

Materials

A

Material

- **Activate MRP**

- **Set up planning file**

- **Maintain MRP data:**
  valid MRP type
 **valid material status**
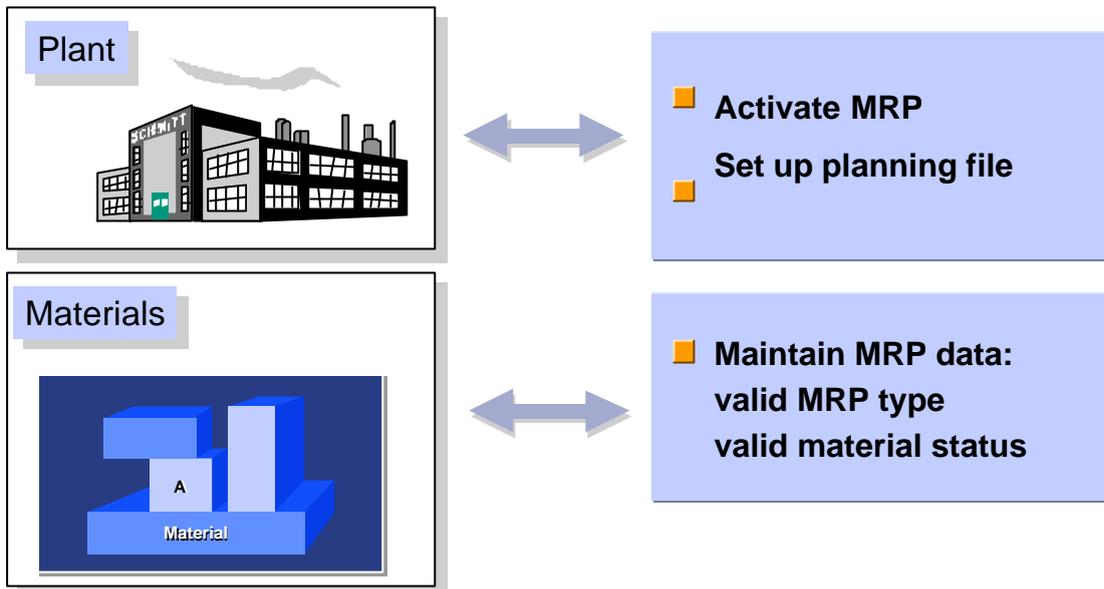
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- By selecting "Material requirements planning" in the Customizing IMG activity "Activate MRP and set up planning file", you can specify for which plant an MRP run is to be carried out. Entries in the planning file can be made only after this indicator has been set. that means. Once the indicator has been set:

  - when a material is that is relevant for MRP created, the system copies the material number to the planning file and sets both the "total change indicator" and the "net change indicator",

  - whenever a change relevant to MRP is made for the material, the system sets the "total change" or the "net change planning" indicator (dependent on the planning horizon) in the planning file.

- If materials have been created, and subsequently the MRP run for a plant is activated, you must create an entry in the planning file for all materials relevant to MRP in this plant. This function can only be used as background processing. You activate this function in the activity "Set up planning file" in the Customizing IMG activity "Activate MRP and set up planning file", which you can access directly from the MRP menu.

- Materials already in the planning file can be excluded from the MRP run using the MRP type in the material master (for example, by using the MRP type ND).

- In addition, you are able to lock a material using the material status for MRP or generate a warning regarding the planning.

MRP Procedures: Overview

SAP

Diagram:

- **MRP procedure**
  - **Consumption-based planning**
    - **Reorder point planning**
      - **Manual reorder point planning**
      - **Automatic reorder point planning**
    - **Forecast-based planning**
   - **Time-phased planning**
  - **MRP**
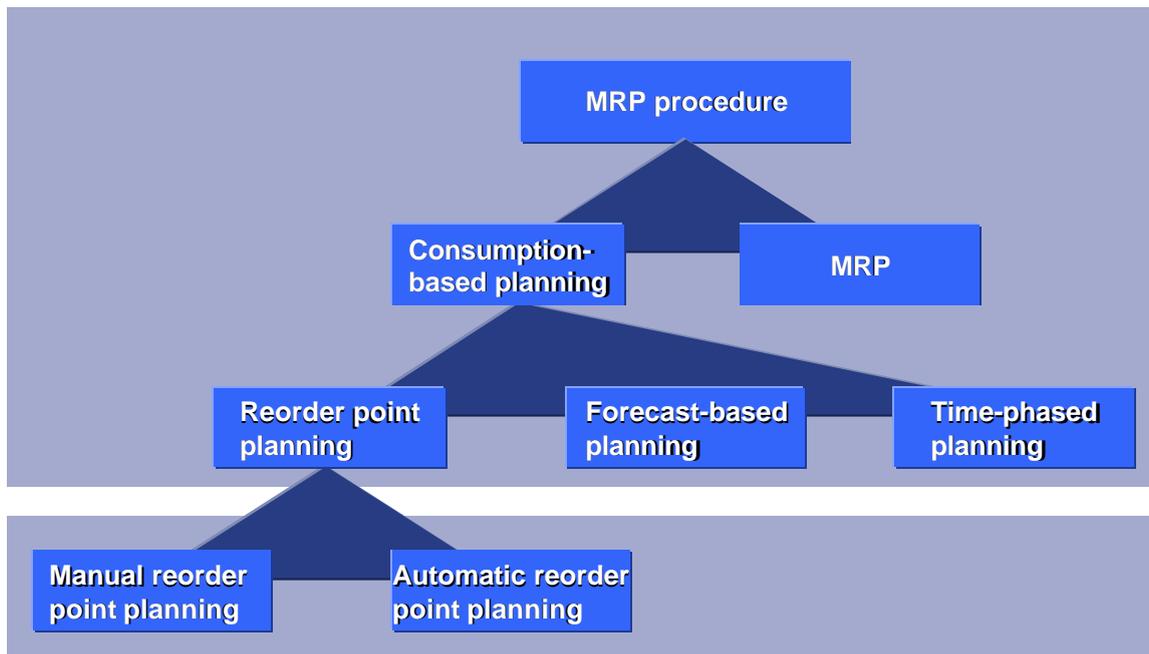
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- As opposed to MRP, consumption-based planning procedures are only based on material consumption.

- In reorder point planning, the system checks whether the available stock level falls below the reorder point defined for the material. If it does, procurement must be triggered. You can determine the reorder point manually or, it can also be calculated automatically using the material forecast.

- In forecast-based planning, historical data is used in the material forecast to estimate future requirements. These requirements are known as forecast requirements and are immediately available in planning.

- In time-phased planning, historical data is also used in the material forecast to estimate future requirements. However, in this procedure, the planning run is only carried out according to predefined intervals.

- For all consumption-based planning procedures, sales orders, planned independent requirements, reservations, and so on are not relevant to planning.

- In MRP, sales order, planned independent requirements, reservations, and so on are planned directly as requirements.

Material Requirements Planning / Consumption-Based Planning

SAP

MRP

Today	70	100
	70	100
	Requirement	**Requirement**

Consumption-based planning

Consumption values   **Expected consumption values**

40   50   45   55   50   50   50   50   50   50

today
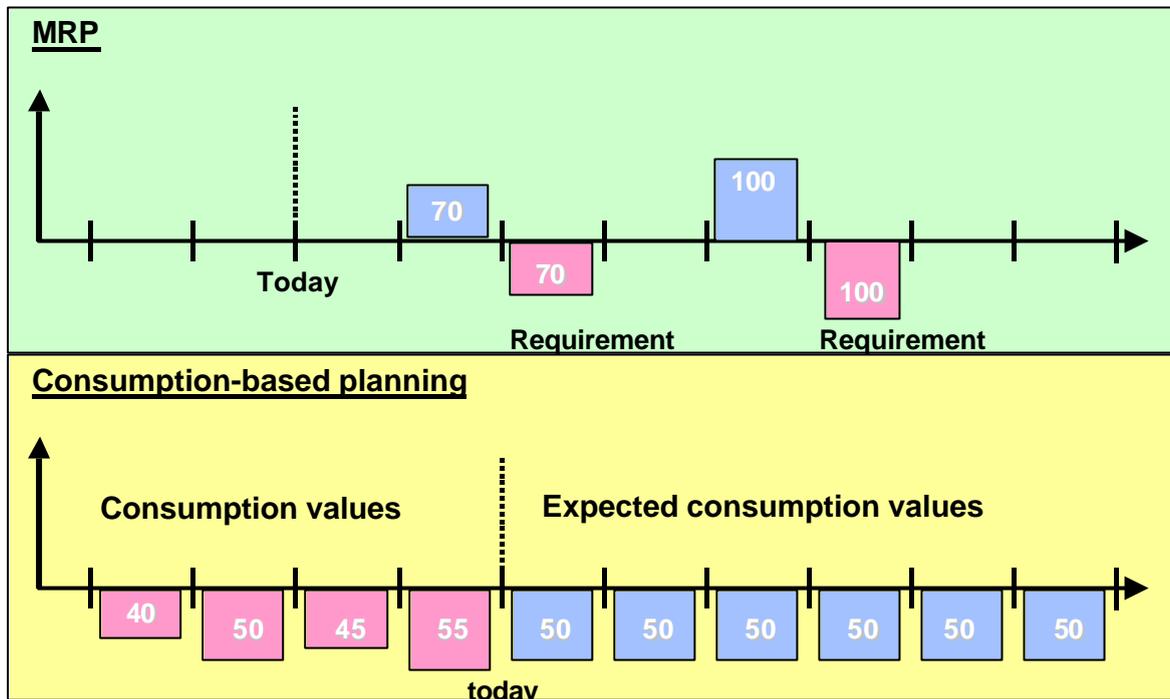
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- Material requirements planning is based on current and future sales. The planned and precise requirement quantities trigger requirements calculation. In MRP, the requirement elements are sales orders, planned independent requirements, material reservations and so on, as well as the dependent requirements that are created by BOM explosion.

- MRP is especially useful for the planning of finished products and important assemblies and components (A materials).

- The planning procedures of consumption-based planning are easy-to-use methods of requirements planning which assist in achieving certain aims with relatively little effort. Consumption-based planning procedures are preferably used in areas without in-house production or in manufacturing plants in order to plan B and C materials and operating supplies.

- Consumption-based planning is based on historical data and uses material forecasts or statistical procedures to determine future requirements. Consumption-based planning procedures do not refer to the production plan, i. e. requirements calculation is not triggered by independent or dependent requirements. It is either triggered by the available stock level falling below the reorder point or by forecast requirement calculated from historical data.

- One prerequisite of consumption-based planning is a smooth and up-to-date inventory management.

BOM Explosion for Consumption-Based Materials

Assembly

Dependent reqmts/
dependent reservations

Components planned by
MRP

Components planned by
consumption-based
procedures

Reorder point
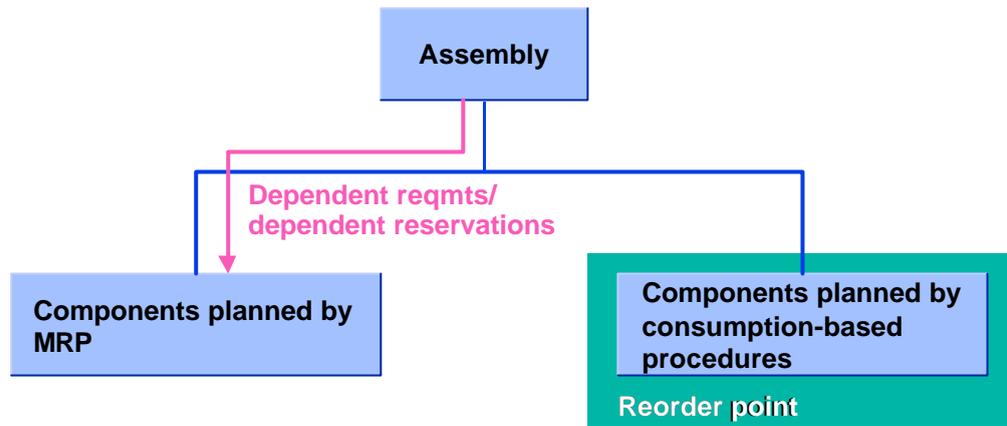
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- For components planned using MRP, dependent requirements are determined by BOM explosion based on the requirements for the finished product. No dependent requirements are created for materials planned using any of the consumption-based planning procedures.

Considering External Requirements

Situation:

Indicator "Incl. ext. rqmt"	add. quantity
–	0
1	160
2	80
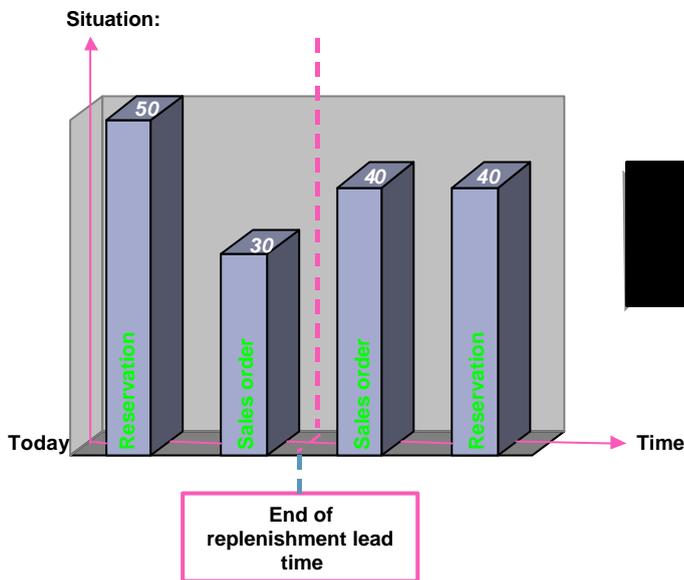
Apart from possible missing parts for the reorder point, materials planning also covers:

Bars: 50 (Reservation), 30 (Sales order), 40 (Sales order), 40 (Reservation)

Today — Time

End of replenishment lead time

- An MRP type indicator controls whether external requirements (sales orders or manual reservations) are included in consumption-based planning procedures.
- You can decide whether these external requirements are to be included in the complete planning horizon or only within the replenishment lead time.

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MRP procedures — - Reorder point planning
- MRP
- No materials planning
- Forecast-based planning
- Master production scheduling (MPS)
- Time-phased planning

Firming type of planning result

MRP type

MRP on a regular basis? — - No firming (only MPS)
- Automatic firming with/without purchase requisition
- Manual firming with/without purchase requisition

Forecast usage

Calculation of safety / reorder point stock — - Required/optional/no forecast?
- Unplanned/total consumption
- Unplanned/total requirement

Screen sequence detailed header

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- The MRP type is a key which controls the MRP procedure to be used for planning a material.

- The MRP type controls which planning parameters must/can be entered when maintaining the material master record.

- You can customize the parameters of the MRP types delivered with the SAP standard according to your own requirements. You can also add new MRP types.

MRP Data in the Material Master Record

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General Data

- Material
- Description
- Unit of measure

MRP Data

- MRP type
- Planned delivery time / inhouse production time
- Lot-size indicator
- MRP controller
- Scheduling margin key

Procurement Data

- Purchasing group
- Goods receipt processing time

Accounting Data

- Valuation class
- Valuation procedure
- Valuation price

Storage Location Data

- MRP indicator for storage location
- Special procurement type storage location

Forecast Data

Consumption data

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- MRP data in the material master record can be subdivided into the following categories:
    - General data which you must/can always define for a planning material,
    - Data dependent on MRP procedure,
    - Data required for scheduling,
    - Data required for lot-size calculation,
    - Data required for storage location MRP.
    - MRP data in the material
- The procurement type defines whether the material is produced in-house, is procured externally, or both.
- The MRP controller is a person or group responsible for planning material requirements.
- The MRP type determines whether or how the material is planned. For example, the material could be planned using traditional MRP, or it could be planned using reorder point planning.
- The lot size key determines the lot-sizing procedure the system uses to calculate the quantity to be produced or procured. Examples include fixed order quantity, lot-for-lot and period lot sizes.

MRP Profile

MRP profile	0001
Standard values:	
MRP type	VB
MRP controller	001
Sched. margin key	001
Default value:	
Reorder point	500
Safety stock	50

Material	1
Plant	1000
MRP profile	0001
MRP type:	VB
MRP controller:	001
Sched. margin key:	001
Reorder point:	500
Safety stock:	50

Change	
MRP profile	0001
Standard values:	
MRP controller:	002

Material 3
Material 2
Material 1
Plant 1000
MRP profile 0001
Material

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- The MRP profile is a key in which you can store MRP parameters that do not depend on the material master record.

- The following is specified in the MRP profile:

- Which fields are to be completed when entering MRP data in the material master record,

- With which values these fields are filled,

- Which of these values can be overwritten (default values) and which cannot (fixed values).

- The information contained in the profile is standard information which is is needed again and again in a similar combination when maintaining material master records. The MRP profile simplifies maintenance and administration of MRP data.

- When changing a profile, the system not only updates the changed profiles in the profile but also creates a background job (PROFILE) which updates all material master records that are allocated to a changed profile. Note: The system only considers changes that affect fixed values.

- You can list the material master records that use the same MRP profile. You can limit the selection by plant and by MRP controller
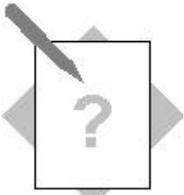
Exercises

Unit: The Basics of Materials Planning

Topic: Planning Principles
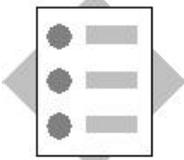
At the end of these exercises, you will be able to:

- Enter the planning data for a material planned on the basis of consumption
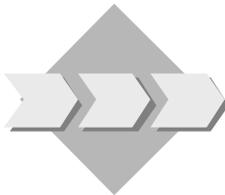
In order to optimize material requirements planning, maintain the MRP data for one material in the material master record.

1-1   Maintaining MRP data for a material

Production in plant **1000** uses the purchased material **Ballbearing, cylindrical-##**. Requirements for this material are determined through manual planning.

1-1-1   Display this material. Use the F4 help to determine the material number. What views have already been created for this material in plant 1000?

_____

_____

1-1-2   To which material type has this material been allocated?

_____

1-1-3 Enter the **planning** data (MRP 1 and MRP 2) for this material in plant **1000**. Please note the following:

The material is planned in accordance with the reorder point procedure; the reorder point is determined manually.

MRP type:_____

MRP controller **0##** is responsible for this material **.**

The reorder point is 100 pieces. A set lot size of 300 pieces is procured as required.

Fields: _____

Normal delivery time is 7 days, an additional day of goods receipt processing time must be added for quality assurance and placement in storage.
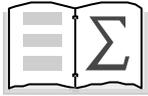
The Basics of Materials Planning: Unit Summary

SAP

You are now able to:

- **Describe the whole materials planning process**

- **Explain the prerequisites for materials planning**

- **Make a distinction between consumption-based planning and material requirements planning (MRP)**

Solutions

Unit: The Basics of Materials Planning

Topic: Planning Principles

1-1   Maintaining MRP data for a material

    1-1-1 *Logistics ® Materials Management ® Material master ® Material ® Display ® Display current*

    Use the search help for the material number/short text to determine the material number.

    Material number: *T-HM1##*

    Views created: *Basic data, Purchasing data and accounting data*

    1-1-2 You can find the material type *Operating supplies* in the title bar.

    1-1-3 *® Material Master ® Create (General) ® Immediatel*

Initial screen	
Material	*T-HM1##*
Industry sector	*M*
Material type	*HIBE*

(The industry sector and material type are determined automatically by the system.)

Select view(s)	*MRP 1, MRP 2*

Organizational levels	*Plant 1000 (Hamburg)*

MRP 1	
MRP type	*VB* *(manual reorder point planning.)*
Reorder point	*100*
MRP controller	*0##*
Lot size	*FX*
Fixed lot size	*300*

MRP 2	
Planned delivery time	*7*
GR processing time	*1*

Contents:

- **Planning types**
- **Control parameters in planning**

SAP

At the conclusion of this unit, you will be able to:

- **Distinguish between the various planning run types and the creation indicators for the planning run**

- **Carry out requirements planning as single-item planning**

Planning Run: Business Scenario

- **You must determine how the planning run is executed and what the results of it should be**

MRP Run

Plant

Planning run for one plant - online (total planning)

Plant

Planning run for one plant - background processing (total planning)

...nning run for one material - online (single-item planning)
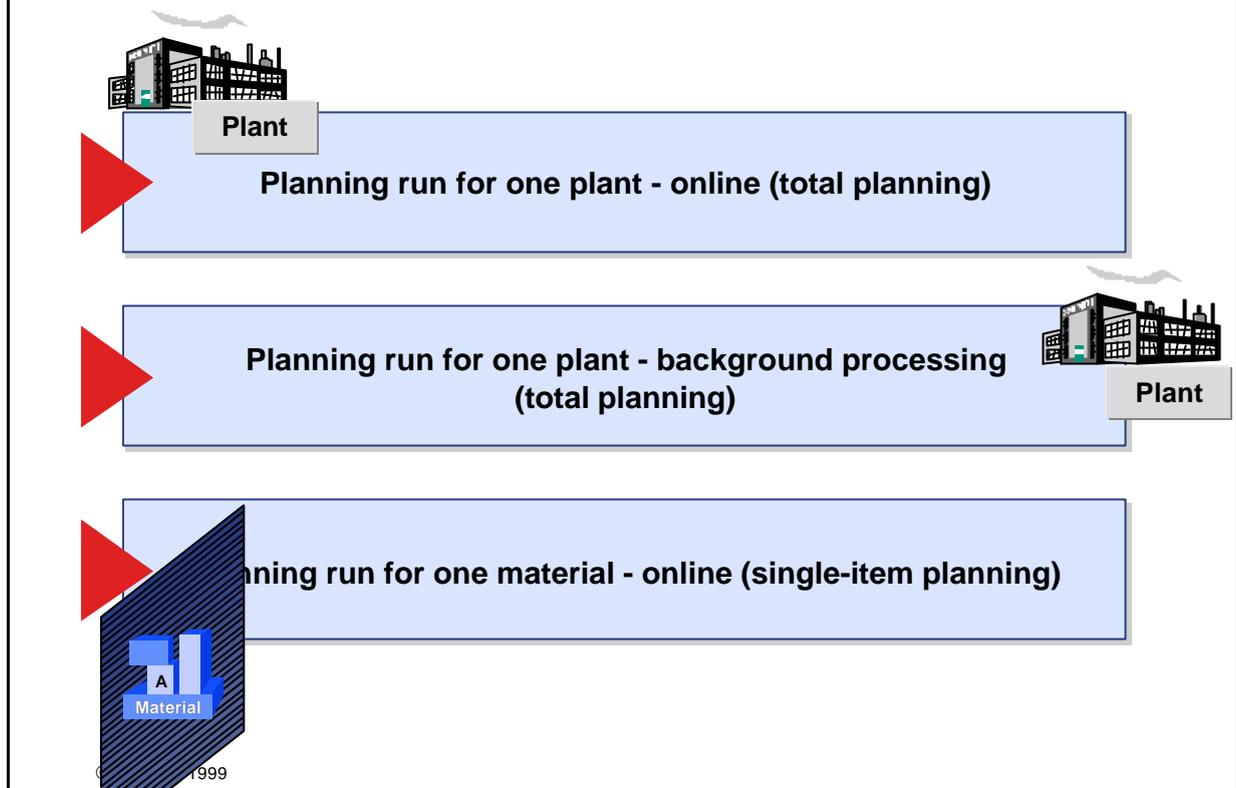
Material

- You can execute the planning run on two levels: for an individual material or as a total planning run for a plant. In addition, it is possible to execute a total planning run for several plants and/or MRP areas.

- You can execute a single‐item planning run either for a specific material only (single level) or for all BOM levels (multi level).

- A total planning run can be executed online or as a background job.

- Total planning for a plant encompasses all materials relevant to MRP for this plant and includes the BOM explosion for materials with BOMs.

- From the MRP menu, you can execute total planning "Online" or "As background job". In order to execute the total planning run as a background job, you select a report variant limiting it to the corresponding plant and plan the job.

- A user exit enables you to limit the total planning run specifically to those materials which fulfill freely definable criteria. You can use this, for example, to select all the materials belonging to a particular MRP controller.

Low-Level Coding

BOMs

Finished product 1

Assembly 1   **Component 2**

Component 1   **Component 2**

Finished product 2

Assembly 2   **Component 4**

Component 2   **Component 3**

Low-level code 000 →   Finished product 1   Finished product 2

Low-level code 001   Assembly 1   Assembly 2   Component 4

Low-level code 002   Component 1   Component 2   Component 3
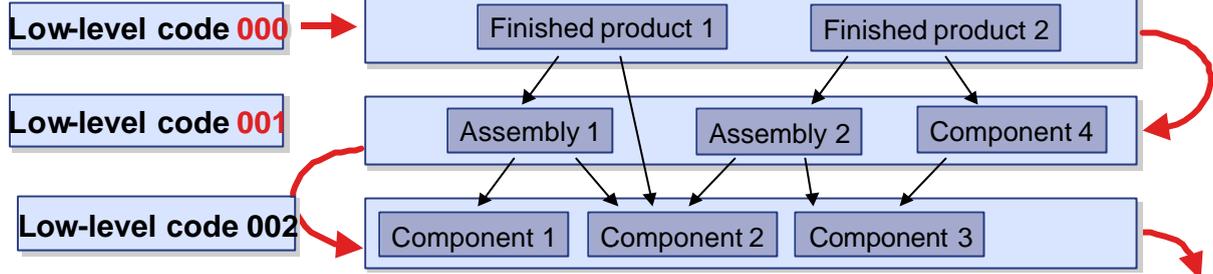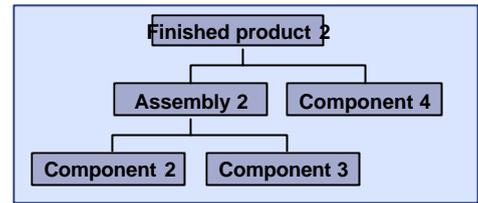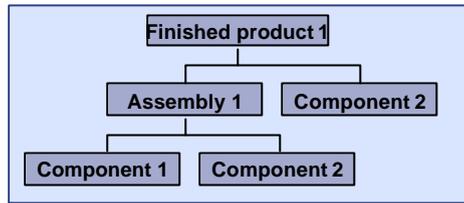
Low-level code = **the lowest level at which the material appears in a BOM**

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- The low-level code is the lowest level at which the material appears in a BOM. A material's low-level code is always greater than the low-level code of all its predecessors in all BOMs.

- The low-level code controls the sequence of the planning run. The system plans the materials with low-level code 0 first, then those with low-level code 1 and so on. All materials are thus planned in the correct sequence in a planning run.

- The low-level code is calculated and saved at client level during BOM maintenance. You can display the low-level code in the material master from the MRP 1 view by choosing "Information on material" or in the planning file entry, provided that an entry for that material exists in the planning file.

Extent of the Planning Run

- **Planning Types:**
  - ► **Planning all materials in a plant**
  - ► **Planning all materials which have undergone a change relevant to the planning run (net change planning procedure)**
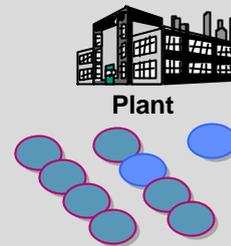
  Plant

- **Planning horizon:**
  - ► **Unlimited, or**
  - ► **Planning in the planning horizon**

  Planned receipts

  Reqmts

  Planning horizon
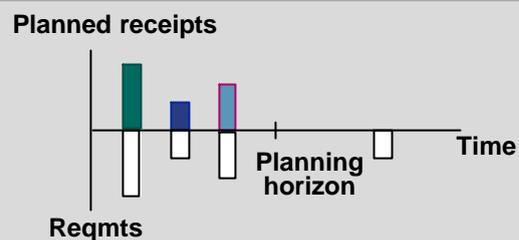
  Time

- During regenerative planning, the system plans all materials for a plant. This is practical when carrying out the planning run for the first time and on rare occasions when, due to technical errors, the consistency of the data cannot be guaranteed.

- During the everyday running of the company, it is usually practical to carry out MRP for only those materials that have been subject to a change relevant to MRP such as outward stock movements, sales orders, and alterations to the BOM structure. Net change planning enables the planning run to execute in a shorter time.

- During net change planning in the planning horizon, the system only takes changes within the planning horizon into account. The system plans only those materials that have been subject to a change within the planning horizon that is relevant to MRP. The materials are planned only within this horizon.

- You set the planning horizon in Customizing for MRP as a plant or MRP group parameter. The planning horizon should at least span the time period in which sales orders are received, and, furthermore, contain the delivery and total lead times for the material.

- You specify the type of planning run via the "processing key" field in the initial screen for planning. In single-item planning, you are only able to differentiate whether "net change planning" (NETCH) or "net change planning in the planning horizon" (NETPL) is to be performed. In total planning, you also have the option of the key NEUPL, with which all materials in the planning file are planned.

Planning File and Material Requirements Planning (1)
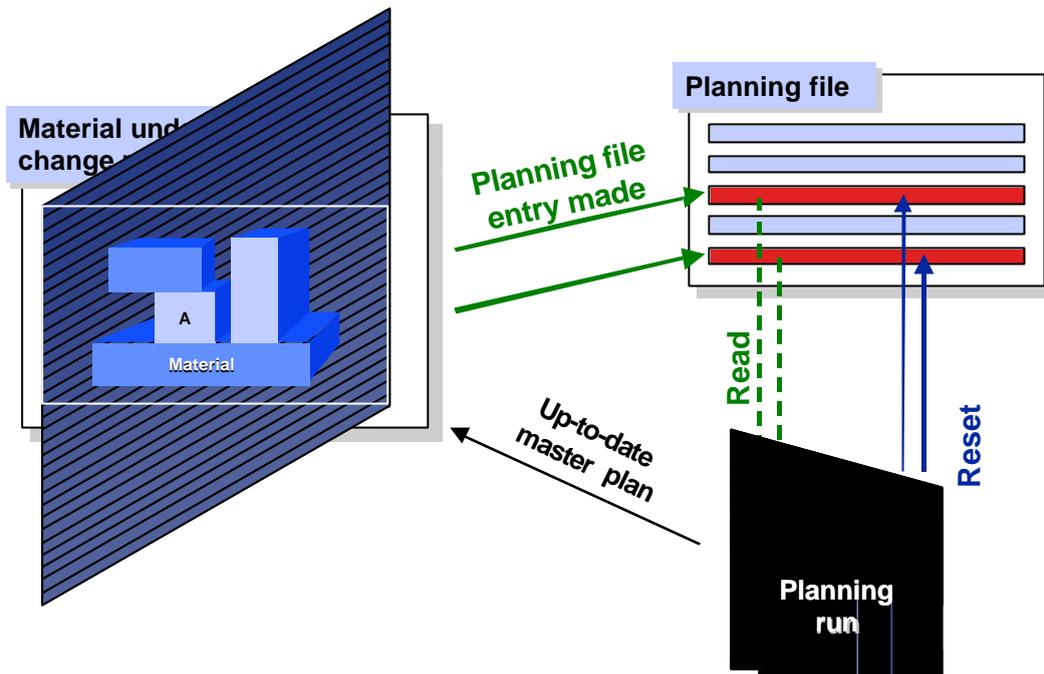
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- The planning file contains all materials relevant to MRP for each plant.

- Net change planning only plans those materials that have been subject to a change relevant to MRP. Changes relevant to MRP lead to a planning file entry being created specific to the plant and material.

- The planning file entry includes the following information:

  - the low-level coding,

  - whether the material has been subject to a change relevant to MRP (NETCH or NETPL indicator),

  - whether the BOM must be re-exploded or whether all existing order proposals are to be deleted.

- The respective entries in the planning file are made automatically by the business application of the system. They can, however, also be made manually from the MRP menu in individual cases. (When doing this, you should remember that a change in the routing does not cause an indicator to be set in the planning file automatically.)

- You can use the transaction "Display planning file entry" from the MRP menu to analzye the contents of the planning file entry record for the materials.

Total period

Planning horizon

Changes   Changes

Material number	Plant	NETCH indicator	NETPL indicator
4710	0001	⊗	⊗
4711	0002	x	x
4712	0001	⊗	
4713	0003	x	
.	.		
.	.		
.	.		

NETCH

NEUPL

Planning run

NETPL

Material number	Plant	NETCH indicator	NETPL indicator
4710	0001	-	-
4711	0002	-	-
4712	0001	-	-
4713	0003	-	-

Material number	Plant	NETCH indicator	NETPL indicator
4710	0001	x	-
4711	0002	x	-
4712	0001	x	
4713	0003	x	

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- During the planning run, the system checks every entry for a material in the planning file.

  - In the case of regenerative planning, the system plans all materials contained in the planning file without taking the indicators into account.

  - In the case of net change planning, the system only plans those materials that have been flagged with the "NETCH planning file entry" indicator.

  - In the case of net change planning in the planning horizon, the system only plans those materials that have been flagged with the "NETPL planning file entry" indicator.

- Once the planning run has been carried out, the respective entry in the planning file is reset. The "NETCH planning file entry" and "NETPL planning file entry" indicators are reset upon regenerative and net change planning. During net change planning in the planning horizon, only the "NETPL planning file entry" indicator is reset.

- You can define whether a planning entry is to be retained or deleted if a termination should occur while planning a material, in the IMG activity "Define error processing in the planning run" in Customizing for MRP calculation by choosing "Del. planning flag". This determines whether the material will be taken into account in the next planning run or not.

Net Change Planning in the Planning Horizon
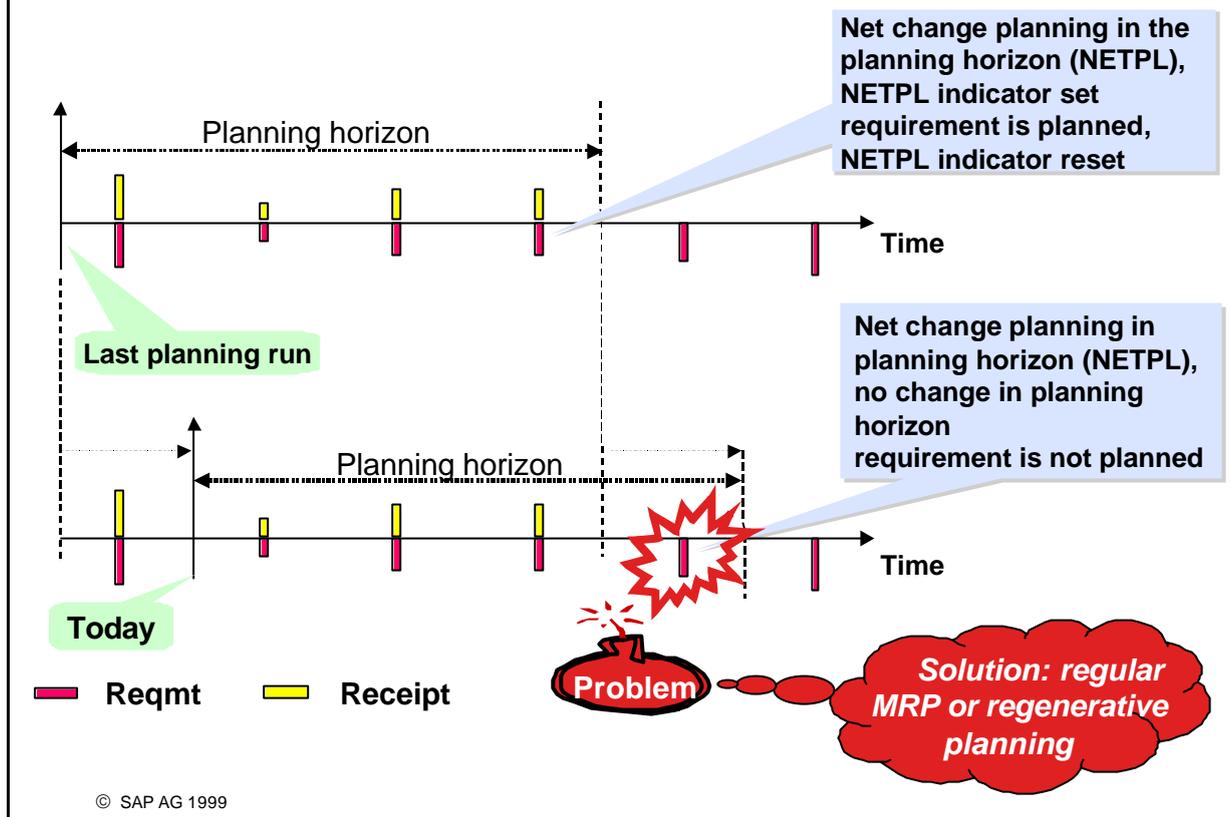
- In order to accelerate MRP, you have the option of limiting it to the planning horizon. Only those requirements within the planning horizon are then covered by goods receipts. If you only execute change planning in the planning horizon, the system does not plan those requirements lying outside the planning horizon.

- It is important to note that, as time lapses, requirements may fall into the planning horizon that have not yet been covered by goods receipts. As long as no other changes relevant to MRP are made, these requirements will not be covered until the next planning run for the whole time axis ("NETCH" indicator). You should therefore carry out this type of planning run on a regular basis.

- A further possibility for dealing with the problem shown in the slide is to set the indicator "Regular MRP" in Customizing for the MRP type of the material and to also maintain the maximum MRP interval in the MRP group. The material is then included automatically in MRP after the maximum MRP interval has gone by, regardless of the settings in the planning file.

- In order to be able to plan the changes outside the planning horizon, you must carry out net change planning at larger intervals.

Creation Indicator

Creation indicator for purchase requisitions

1. PReq
2. PReq → Plnd ord. — Opening period →
3. Plnd ord.

Creation indicator for schedule lines

1. PReq / Plnd ord.
2. Sched. line → PReq / Plnd ord. — Opening period →
3. Sched. line

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- The creation indicator controls the creation of planned orders or purchase requisitions, schedule lines, and MRP lists.

- By entering the creation indicator for purchase requisitions in the entry screen of the planning run, you can control whether the system should directly create purchase requisitions or planned orders first.

- If a schedule line exists for a material and the source list contains an entry relevant for planning, schedule lines can also be created directly via materials planning. This is controlled by the creation indicator for schedule lines in the entry screen of the planning run.

- You can save the planning results in the form of MRP lists. The creation indicator for MRP lists controls whether the system should always create an MRP list for all planned materials or whether it should create an MRP list for certain materials depending on the exception message.

- In total planning, the creation indicator in the entry screen is used for planning if no other plant or MRP group parameters have been maintained for the material.

Control Parameters for MRP

Processing key
NEUPL
NETCH
NETPL

MRP group

Create purch. requisition
1
2 — in the opening period
3

Schedule lines
1
2 — in the opening period
3

Create MRP list
1 ☑ always
2 ☑ only for exc. messages
3 ☐ never

Planning mode
1 adjust data
2 new BOM and routing
3 delete planning data

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- The following control parameters for MRP are required for the planning run:

  - Processing key: you define the planning type as regenerative planning or net change planning over the whole period or restricted to the planning horizon.

  - The indicators "Create purchase requisition" and "Schedule lines" are only relevant for materals that are procured externally. You can determine whether or in which period purchase requisitions and schedule lines are required as the result of the planning run.

  - You can determine further whether the planning run is to generate MRP lists. It is also possible to have the system generate MRP lists only when certain exception messages have appeared for a material (the exception messages that should trigger an MRP list to be generated can be defined in the Customizing IMG activity "Define and group exception messages").

  - The planning mode defines whether the existing planning data should simply be adjusted, whether BOMs and routings should also be re-exploded or whether the planning should be started from the very beginning again.

- You can also set the creation indicator for purchase requisitions, schedule lines and MRP lists in the MRP group. The materials that are assigned to this MRP group are then planned accordingly in the total planning run.

Format of the Stock/Requirements List

Stock/requirements list

Variable header
- Material information
- Consumption values

MRP elements
- Date
- Exception message
- Receipt/requirement quantity
- Available quantity

Contents are continually imported

Contents
Planned orders
Purchase requisitions
Production orders
Purchase orders
⋮
Plant stock/
stor. loc. stock

Forecast requirements
Sales orders
Reservations

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- A stock/requirements list informs you of the available quantity, based on the stock situation, requirements, and receipts.

- The stock/requirements list is dynamic; that is, every time you call up the function, the system redetermines the stock elements, receipt elements, and issue elements (for example, plant stock, purchase orders, and reservations).

- There is an individual display function and collective evaluation function for the stock/requirements list. The MRP list is another function used for evaluation in MRP. This is a document that describes the status of a material at the time of the planning run. The MRP list is a static report whereas the stock/requirements list is a dynamic report.

Customizing for MRP

Priority

Material master

MRP group
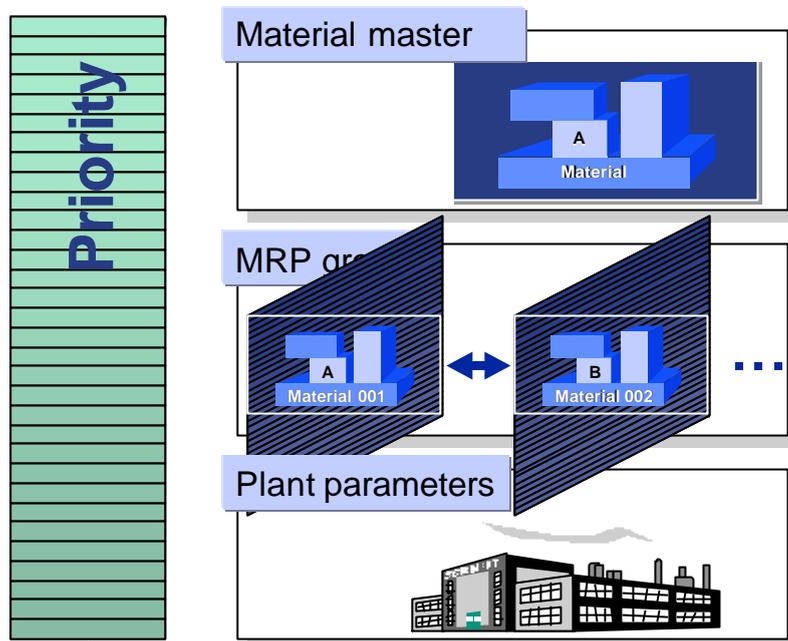
Plant parameters

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- The Customizing settings for MRP are essentially controlled on three levels:

  - Material master,

  - MRP group (Customizing IMG activity: Carry out overall maintenance of MRP groups),

  - Plant parameters (Customizing IMG activity: Carry out overall maintenance of plant parameters).

- The MRP group is an organizational object, with which you can assign special planning control parameters to a group of materials. Included in these are, for example, the "creation" indicator for purchase requisitions, schedule lines, the planning horizon and so on. You define the MRP group with these specific control parameters and assign the materials in the material master record (MRP data screen 1) to the corresponding MRP group.

- If you have the option of entering a setting on more than one of these levels, the setting in the material master overrides the setting in the MRP group to which the material is assigned. The setting in the MRP group has, in turn, greater influence than the setting in the plant parameters.

Planning with MRP Areas

Dep. reqmts Production line 1 — Storage location 0001

Dep. reqmts Production line 1 — Storage location 0002

Dep. reqmts Production line 2 — Storage location 0003

Other reqmts (such as spare parts) — Storage location 0004

Subcontractor Requirements

MRP / MRP / MRP / MRP

In-house production

External procurement
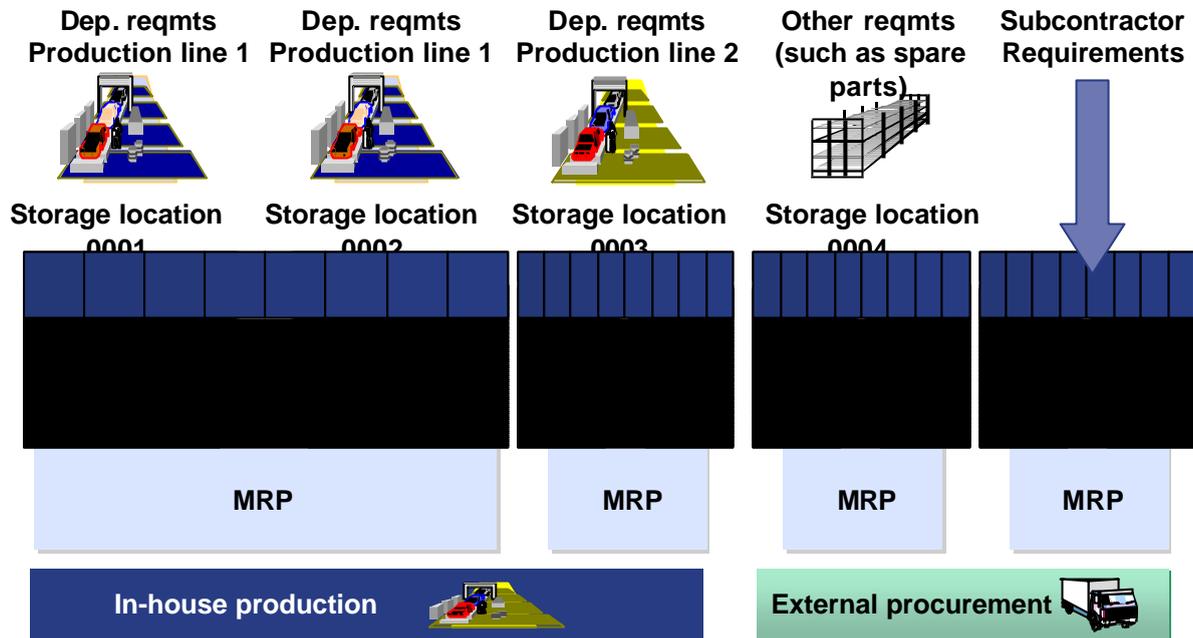
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- The introduction of MRP areas enables a greater differentiation in MRP. Planning takes place separately for each MRP area. It is possible, for example, to plan the requirements for different production lines separately.

- In storage location MRP areas, one or more storage locations are grouped together to form an organizational unit. In MRP, this unit is planned separately from the rest of the plant and the other MRP areas. The assignment of a receipt (procurement) or issue element (requirement) to a storage location MRP area is made using the storage location of the receipt or issue elements. You may assign a storage location to just one MRP area.

- You can also plan the provision of components for an individual subcontractor separately using an MRP area. To do this, you define an MRP area for a subcontractor (vendor) and assign the corresponding components to be provided to this MRP area.

- The planning result in each MRP area is evaluated separately with the individual MRP list or stock/requirements list. When using collective display, you can select materials for one MRP area or for all MRP areas in a plant.

- You can assign different MRP parameters to a material for each MRP area, so that planning can be adapted to suit the particular needs in each individual MRP area.

MRP Without MRP Areas

Dep. reqmts Production line 1 — Storage location 0001
Dep. reqmts Production line 1 — Storage location 0002
Dep. reqmts Production line 2 — Storage location 0003
Other reqmts (such as spare parts) — Storage location 0004 ...
Subcontractor requirements

Plant

Material Requirments Planning (MRP)

Planned orders
Purchase requisitions
Schedule lines

In-house production

External procurement

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- Without MRP areas, MRP takes place at plant level. This means that all requirements for a material (dependent requirements, planned independent requirements, customer requirements and so on) for all storage locations, which are not planned separately or are not excluded from the planning, flow into the MRP together. Depending on the procurement type of the material, in-house production or external procurement is used to satisfy the requirements.

- The settings for MRP in the material master of the material are valid for the whole plant (with the exception of storage locations that are planned separately or are excluded from the planning).

Exercises

Unit: Planning Run

Topic: Carrying out Material Requirements Planning
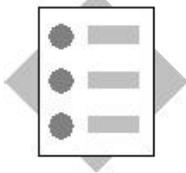
At the end of these exercises, you will be able to:

- Display planning file entry
- Carry out a manual single-item planning run for your material
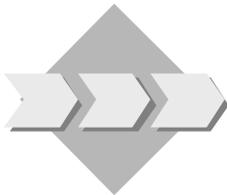
For the material requirements planning run you must decide how this should be carried out, how you can reasonably limit the number of materials to be planned and what the result of the planning run should be.

2-1 Displaying the stock/requirements list

You require information on the development of the availability situation for material **T-HM1##**. Display the stock/requirements list for this material in plant **1000**.

What is the MRP type?_____

What is the available quantity of the material?_____

2-2 Displaying the planning file entry

Display the planning file for material T-HM1## in plant 1000.

To which low-level code is your material allocated?_____

Which planning file entries are set for your material?_____

2-3   Carrying out a single-item planning run

Carry out single-item, single-level planning for this material in plant **1000** as net change planning.

Which processing key do you use?_____

Purchase requisitions are always created. An MRP list should also be created as documentation of the result.
Do not display the result.

2-4   Displaying the planning file entry

Display the planning file for material T-HM1## in plant 1000.

Which planning indicators are set for your material after the planning run?_____

2-5   Displaying the stock/requirements list

Display the stock/requirements list for this material in plant **1000** again.

How has the available stock developed since you last displayed it?

What procurement proposals are made?

_____

_____
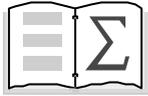
You are now able to:

- **Distinguish between the various planning run types and the creation indicators for the planning run**

- **Carry out requirements planning as single-item planning**

Solutions

Unit: Planning Run

Topic: Carrying out Material Requirements Planning

2-1   **Displaying the stock/requirements list**

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Evaluations ® Stock/Reqmts List

Individual access tab page	
Material	*T-HM1##*
Plant	*1000*

MRP type: *VB*

Available qty: 0

2-2   **Displaying the planning file entry**

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Planning ® Planning File Entry ® Display

Material	*T-HM1##*
Plant	*1000*

Low-level code: 999

Planning file entries: NETCH, NETPL

2-3 Carrying out a single-item planning run

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Planning ® Single-Item, Single-Level

Material	T-HM1##
Plant	1000
Processing key	NETCH
Create pur. req.	1
Create MRP list.	1

2-4 Displaying the planning file entry

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Planning ® Planning File Entry ® Display

Material	T-HM1##
Plant	1000

Planning file entry: -

2-5 Displaying the stock/requirements list

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Evaluations ® Stock/Reqmts List

A purchase requisition for a total of 300 pieces (fixed lot size) was created

Lot-Size Calculation

Contents:

- **Static lot-sizing procedures**
- **Period lot-sizing procedures**
- **Optimum lot-sizing procedures**

**At the conclusion of this unit, you will be able to:**

- **Describe the various methods of lot-size calculation**

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Lot-Size Calculation: Business Scenario

- **During the calculation of the net requirements, the system has detected material shortages for requirement dates. These shortage quantities must now be covered by receipts. The system calculates the receipt quantity in the lot-size calculation, which is carried out during the planning run. You define how the system calculates the lot size by selecting one of the lot-sizing procedures in the material master record.**

Lot-Sizing Procedures

| Static	Period	Optimum
Lot-for-lot	Daily lot size	Part period
Fixed lot size	Weekly lot size	Least unit cost
Replenish up to maximum stock level	Monthly lot size	Groff reorder procedure
	Lot size according to accounting periods	Dynamic lot size
	Flexible periods according to planning calendar	
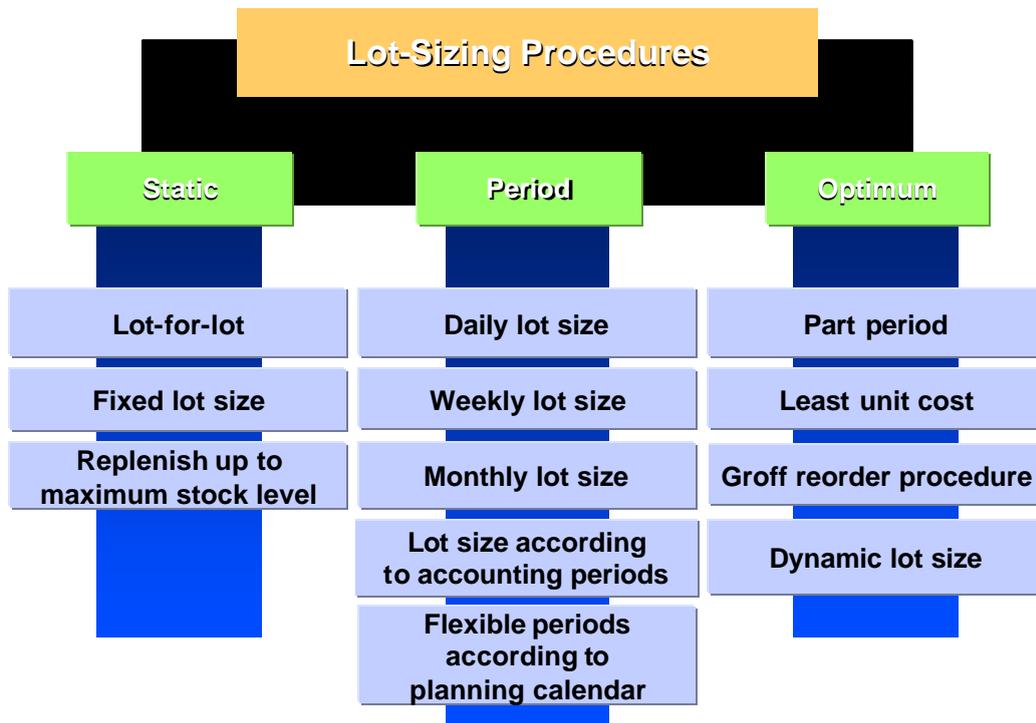
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- MRP (or MPS) determines how much stock is needed to satisfy demand in the net requirements calculation. This shortage quantity must now be covered by one or more receipts. The system calculates the receipt quantity in the lot size calculation.

- You specify how the system is to determine the lot size by selecting one of the lot-sizing procedures in the MRP view of the item's material master record.

- You also may specify additional restrictions on the lot size in the MRP view. The minimum lot size, for example, is applied after the lot size has been calculated and insures the order quantity is at least that amount. The maximum lot size ensures that the order quantity does not exceed that amount. The rounding value modifies the order quantity so it is in multiples of the amount.

Static Lot-Sizing Procedures

Fixed lot size
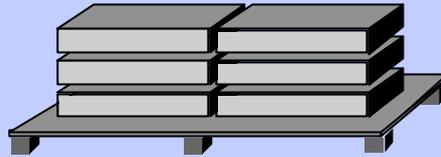
Replenish up to maximum stock level

Exact lot size

Qty

Receipts
Issues
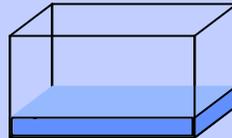
Time
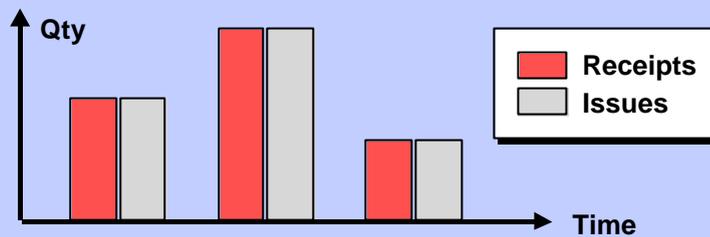
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- In static lot-sizing procedures, the system does not take future shortages into account; that is, if it determines shortages, the system creates an order proposal for the quantity of the static lot size.

- If you have specified that the exact lot size (lot-for-lot order quantity) is to be used, the system uses the exact shortage quantity as the order quantity in the case of a material shortfall. If there are several goods issues leading to a material shortfall in one day, the system groups the shortage quantity from this day in one order proposal, rather than creating an order proposal for each shortage.

- If you have specified that the fixed order quantity is to be used, the system uses the fixed lot size quantity as the order quantity in the case of a material shortfall. If this order quantity is not sufficient to cover the shortage, the system generates several order proposals for the same date until the shortage has been covered.

- If you have specified that the order quantity "replenishment up to maximum stock level" is to be used, the system creates an order proposal for the quantity that is required to reach the maximum stock level defined in the material master record.

Quantity

Time

Period length   Period length

Receipts
Issues

Day(s)
Week(s)
Month(s)
Period according to
planning calendar
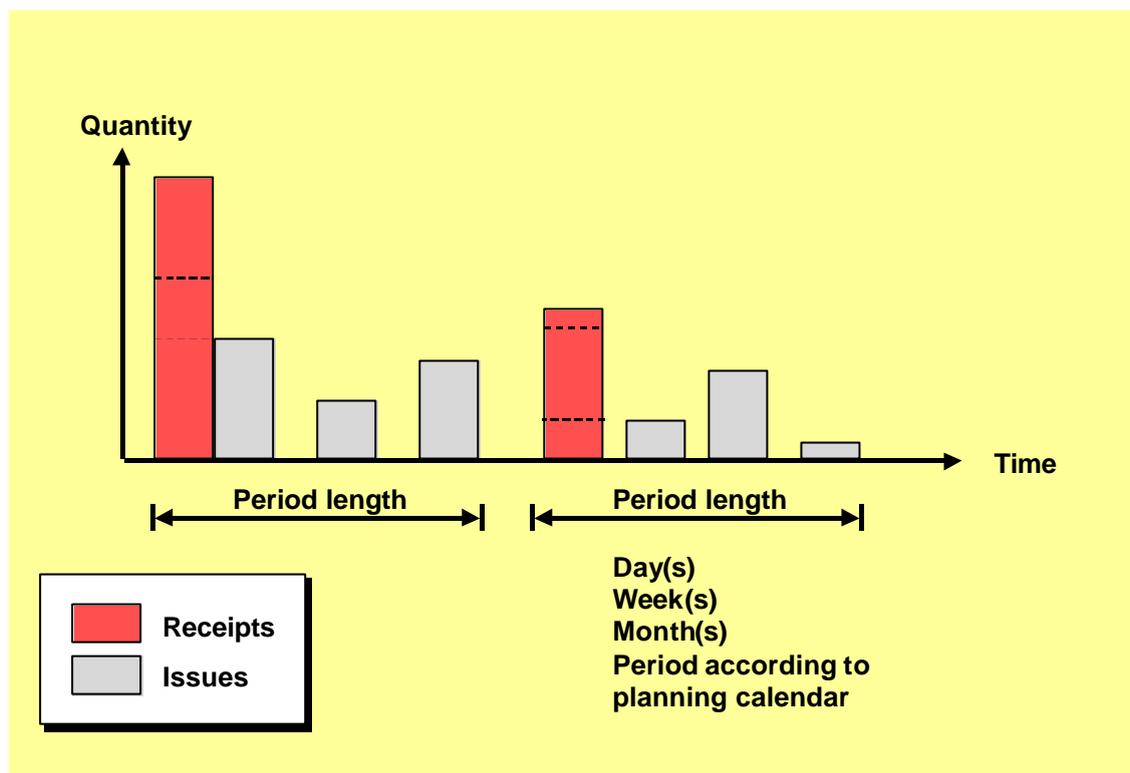
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- In period lot-sizing procedures, the system groups several requirements within a time interval together to form a lot. The period lengths can be either days, weeks, months or a period of flexible length equal to posting periods as well as freely definable periods according to a planning calendar.

- Daily lot size: All requirement quantities that fall within a day or within a specific number of days (which you have determined) are grouped together to form a lot.

- Weekly lot size: All requirement quantities that fall within a week or within a specific number of weeks (which you have determined) are grouped together to form a lot.

- Monthly lot size: All requirement quantities that fall within a month or within a specific number of months (which you have determined) are grouped together to form a lot.

- Lot size according to flexible period length: All requirement quantities that fall within one flexible period length or within a specific number of flexible period lengths (which you have determined) are grouped together to form a lot. You determine the period lengths according to the accounting periods. This lot size is also called period lot size.

Optimum Lot-Sizing Procedures

Many deliveries/ High order costs

Minimal stockkeeping/ Minimal storage costs

Few deliveries / Low order costs

More extensive stockkeeping/ Higher storage costs

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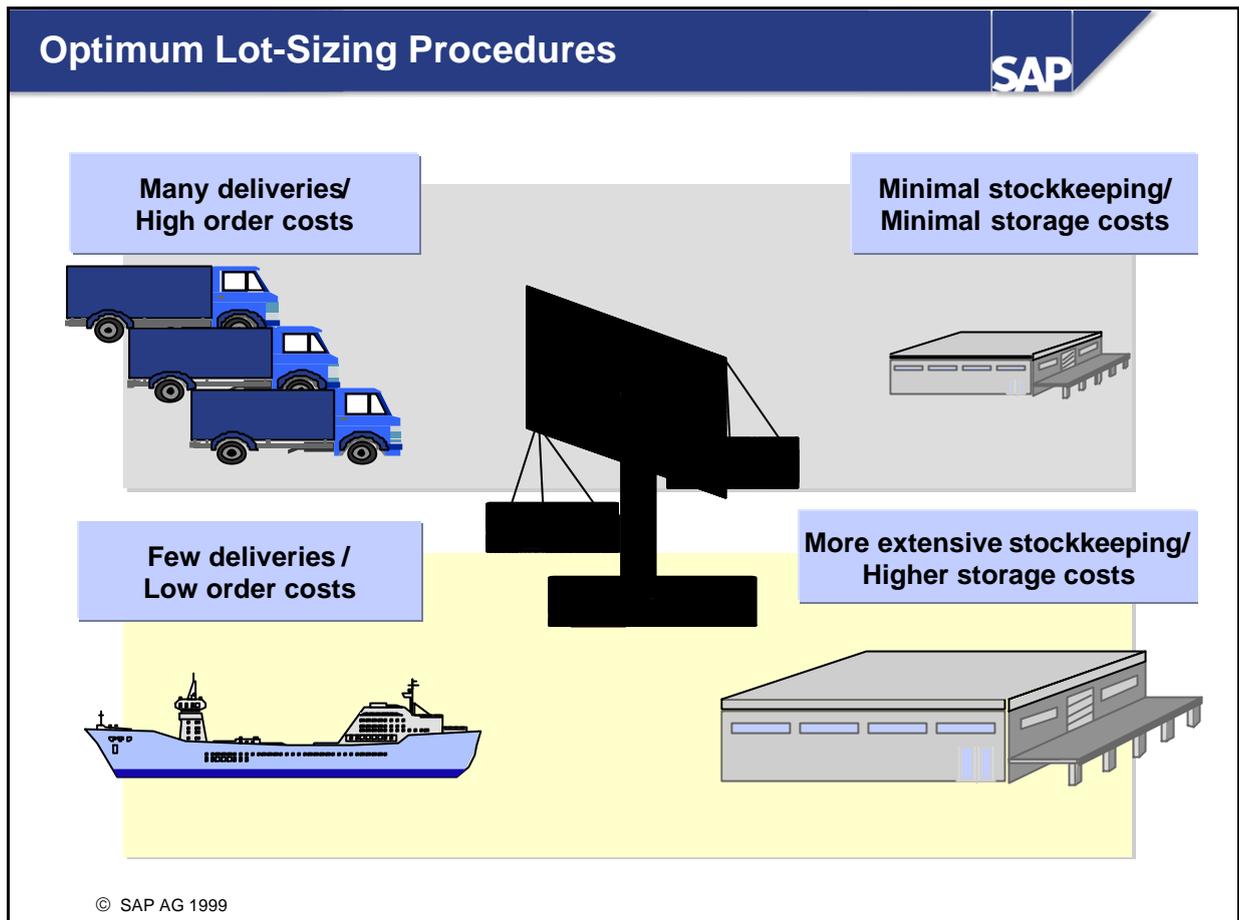
- Optimum lot-sizing procedures attempt to optimize the total costs resulting from order and storage costs.

- You enter the ordering costs in the material master (MRP 1) or, if necessary, in the MRP area segment.

- The system determines the storage costs using the storage costs indicator, which you define in the Customizing IMG activity "Check lot-sizing procedure" by entering a storage cost interest rate. You assign the storage costs indicator to the material master (if necessary, per MRP area). The formula for calculating storage costs is then:

  Storage costs = Requirement x Price x Storage cost interest rate x Time in storage / 100 / 365.

- On the basis of various costing criteria, current and future requirements are grouped together into a lot in such a way as to optimize the total costs.

Minimum Lot Size / Maximum Lot Size

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Material 1

Minimum lot size   50

50

Material 2

Maximum lot size   50

50

Receipts   Issues

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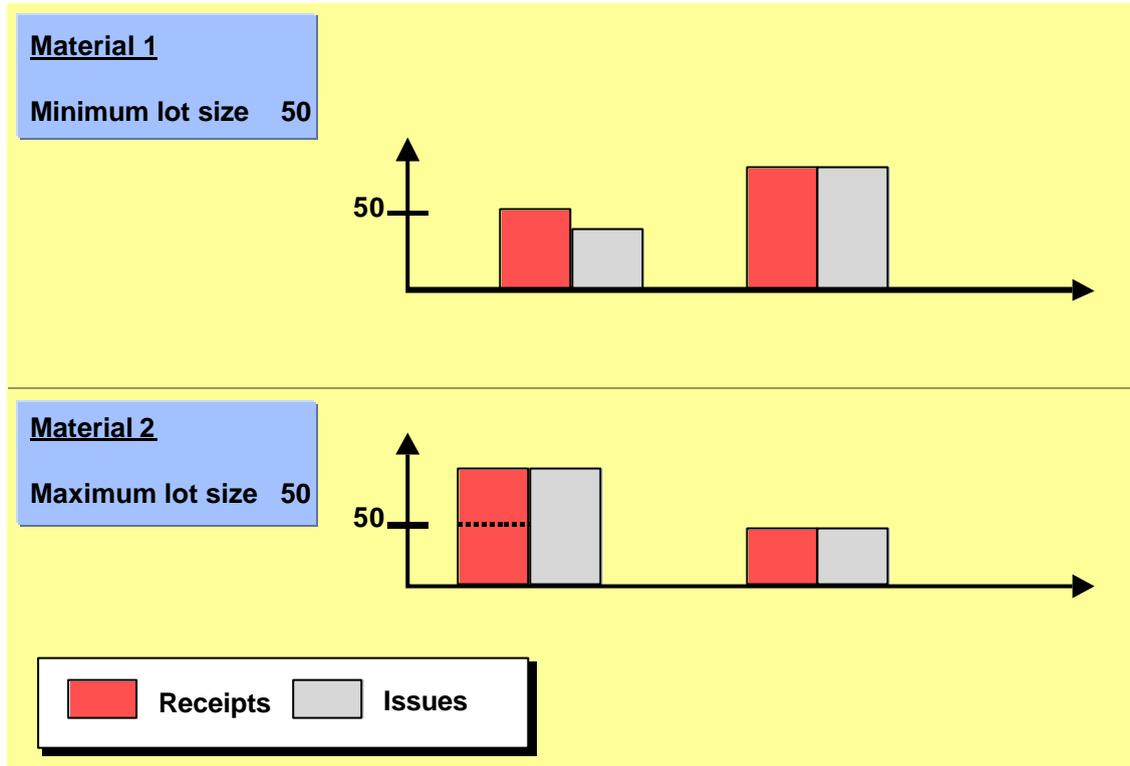
■ You can influence the grouping of requirements to form a lot by entering additional restrictions in the material master record. For example, you can define limiting values (minimum lot size, maximum lot size). During lot-size calculation, the system takes into account these limiting values. That is, the lot size is either rounded up to the minimum lot size, or the system prevents the grouping of requirements to form more than the maximum lot size.

Lot-Size Calculation: Unit Summary

SAP
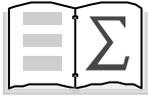
You are now able to:

- **Describe the various methods of lot-size calculation**

Contents:

- **Manual reorder point planning**
- **Evaluation options using the current stock/requirement list and MRP list**

At the conclusion of this unit, you will be able to:

- **Explain the concept and the procedure for reorder point planning**

- **Set the reorder point planning entries in the material master**

- **Distinguish between the various functions for evaluating the planning result and also use them**

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Reorder Point Planning & Evaluation: Business Scenario

- **Your company wants to plan its materials after the reorder point planning procedure. As a member of the project team, you are responsible for determining the required settings.**

Overview of Materials Requirements Planning

Transaction relevant to MRP

Planning file entry

Tuesday, Dec. 18 | Tuesday, Dec. 18

MRP

Planned order

Materials Planning

Purchasing

Delivery schedule

Purchase requisition
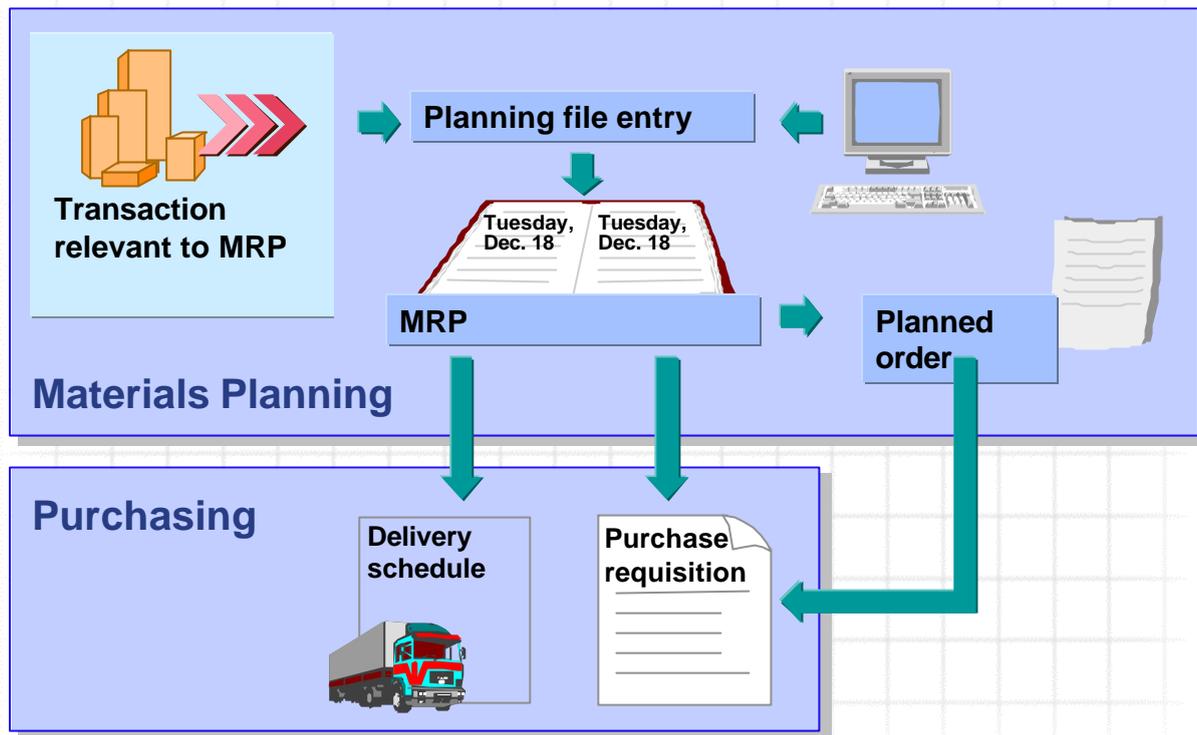
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- If requirements for a material are planned automatically and MRP is active in the plant, the system automatically carries out planning file entries upon transactions relevant to materials planning (goods issues, reservations, change in a material's planning data, execution of a forecast for material ...). You can also enter planning file entries manually.

- You can carry out materials requirements planning online or in the background.

- Planned orders are proposals used for requirements coverage. They can be converted to purchase requisitions in a single step.

- You can also create purchase requisitions directly instead of planned orders.

Creation Indicator

Creation indicator for purchase requisitions

1 — PReq

2 — PReq — Plnd ord.
- Opening period -

3 — Plnd ord.

Creation indicator for schedule lines

1 — PReq — Plnd ord.

2 — Sched. line — PReq — Plnd ord.
- Opening period -

3 — Sched. line

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- The creation indicator controls the creation of planned orders or purchase requisitions, schedule lines, and MRP lists.

- By entering the creation indicator for purchase requisitions in the entry screen of the planning run, you can control whether the system should directly create purchase requisitions or planned orders first.

- If a schedule line exists for a material and the source list contains an entry relevant for planning, schedule lines can also be created directly via materials planning. This is controlled by the creation indicator for schedule lines in the entry screen of the planning run.

- You can save the planning results in the form of MRP lists. The creation indicator for MRP lists controls whether the system should always create an MRP list for all planned materials or whether it should create an MRP list for certain materials depending on the exception message.

- In total planning, the creation indicator in the entry screen is used for planning if no other plant or MRP group parameters have been maintained for the material.

Material
Material type
Procurement type

In-house production → Planned order → Production order

External procurement → Planned order → Purchase requisition → Purchase order

Material Plant
Special procurement

Standard procurement → Order type NB / Item cat.

Stock transfer → Order type NB / Item cat. U

Subcontracting → Order type NB / Item cat. L

Consignment → Order type NB / Item cat. K

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- When the system creates an order proposal, it checks to see whether the receipt is to be made via in-house production or external procurement. This is defined per material by the procurement type and if necessary the special procurement type.

- The procurement type is preset by the material type in Customizing for the Material Master.

- You use the special procurement type to define 'in-house production' or 'external procurement' in more detail.

Consumption-Based Planning: Procedure and Environment
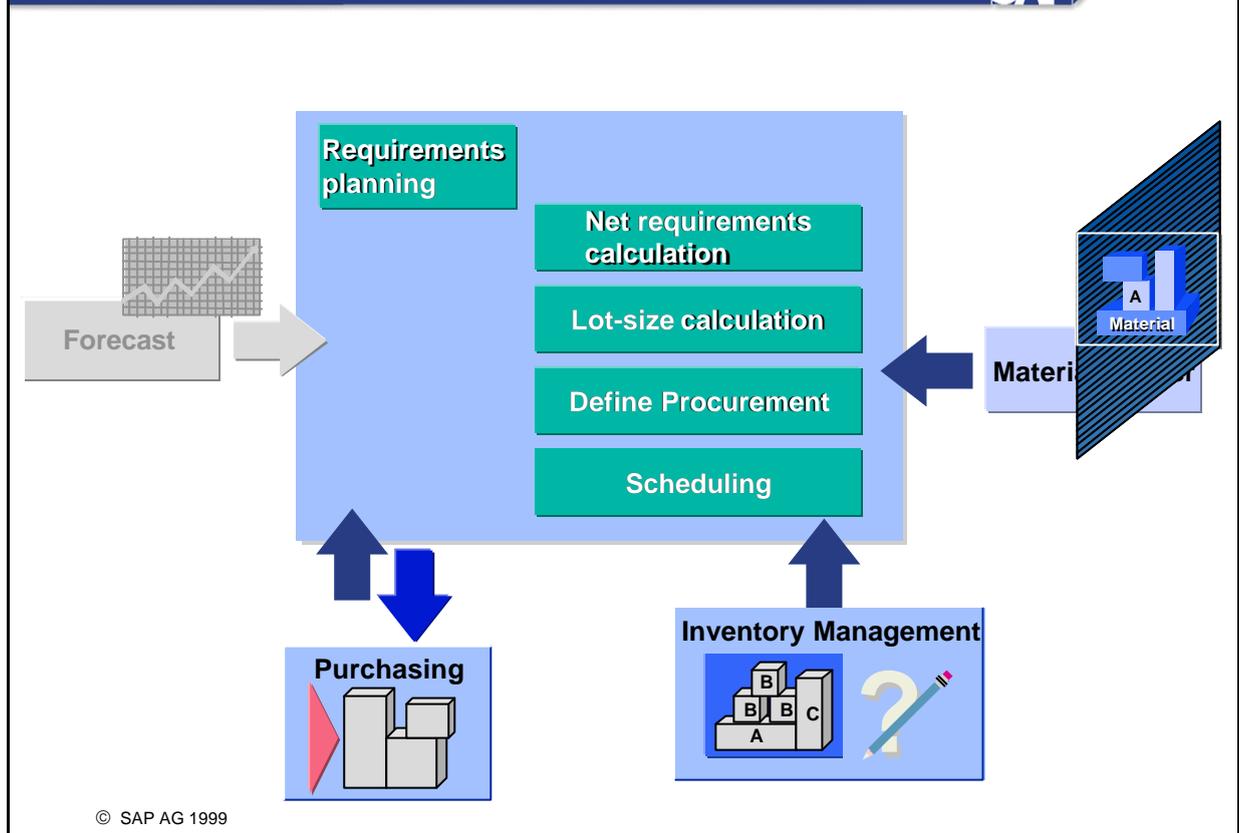
- The main function of requirements planning is to determine material availability, i. e. what amount of which material is needed on which date.

- Net requirements calculation is carried out by the system for a specific plant during the planning run as part of MRP. The system checks whether the forecast requirements can be covered by the available stock and planned receipts. If material shortage occurs, the system calculates the shortage quantity and creates an order proposal.

- Lot-size calculation is carried out as part of requirements planning according to the lot-size calculation procedure defined in the material master.

- During the determination of the order proposal, the system checks whether the requirements are covered by receipts from in-house production or from external procurement. This is controlled by the procurement type and, if applicable, by the special procurement type in the material master.

- The procurement type is predefined by the material type in the Customizing for the material master.

- The special procurement type defines in-house production or external procurement in more detail.

- In scheduling, the system calculates the start and finish dates of the procurement elements for in-house produced or externally procured materials. When scheduling externally procured materials, the following dates are taken into account: purchasing department processing time, planned delivery time, goods receipt processing time.

Reorder Point Planning

Stock / Lot size / Reorder point / Safety stock / Reorder point / Delivery time / Time / Replenishment lead time

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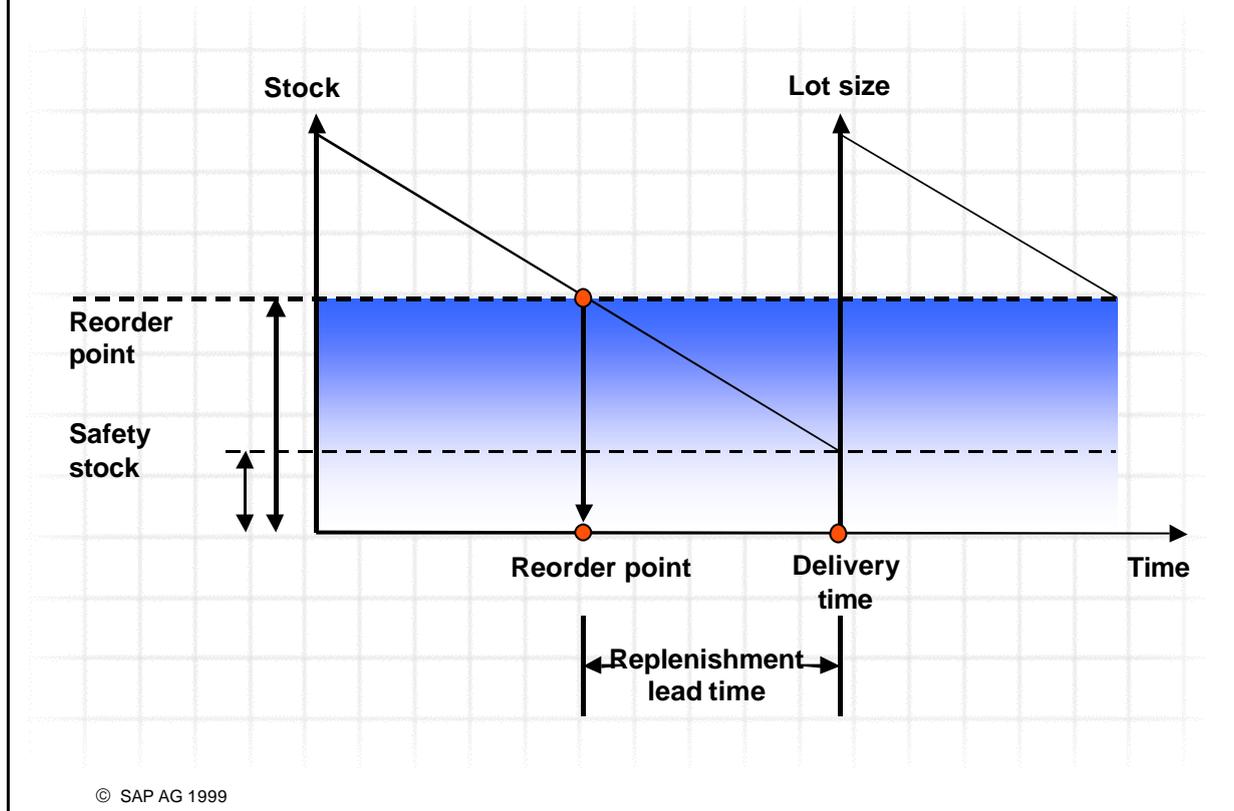
- The manual reorder point procedure uses the MRP indicator VB.

- The reorder point procedure is based on a comparison between the warehouse stock and the reorder point. If the available warehouse stock is less than the reorder point, the system initiates requirements calculation.

- The reorder point comprises the expected average material requirements during the replenishment lead time and the safety stock. The following values have to be taken into account when the reorder point is defined:

  - The safety stock.

  - Prior consumption or future requirements.

  - The replenishment lead time.

- The safety stock is used to cover unplanned excess consumption during the replenishment lead time and additional requirements in the case of delivery hold-ups.

Net Reqmts Calculation in Reorder Point Planning

SAP

	Shortage

Order proposal for qty of lot size

Reorder point

Purchase orders

Available warehouse stock

Firm planned orders Firm purch. requisitions

◄ **Comparison** ►
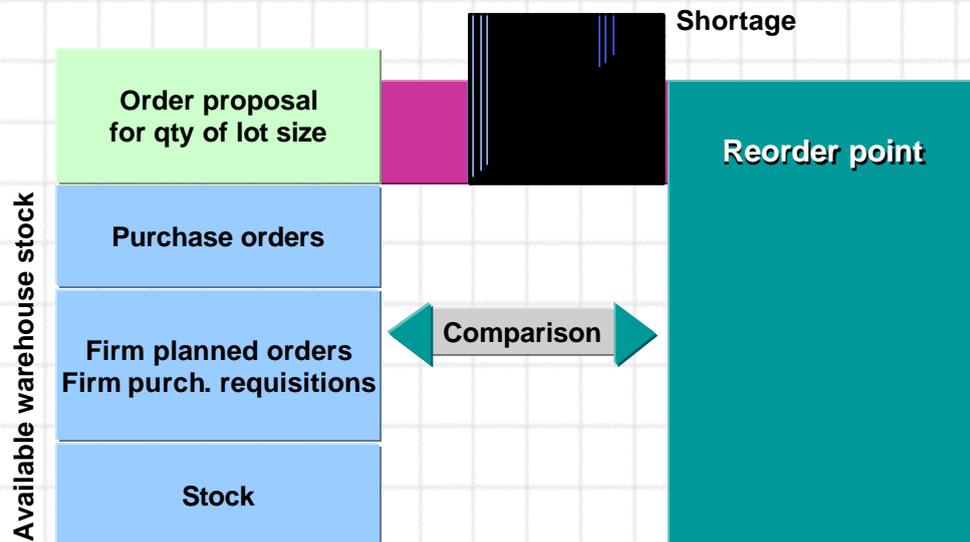
Stock

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- In reorder point planning, the available warehouse stock is calculated from the following: Warehouse stock + order quantity (purchase orders, firm planned orders, and firm purchase requisitions).

- If the available warehouse stock is less than the reorder point, there is a shortage of materials.

- The shortage quantity is the difference between the reorder point and the available warehouse stock. The purchase order quantity is derived from the lot-sizing procedure in the material master record.

- The system bases the requirement date on the planning date.

Calculation of Deadlines
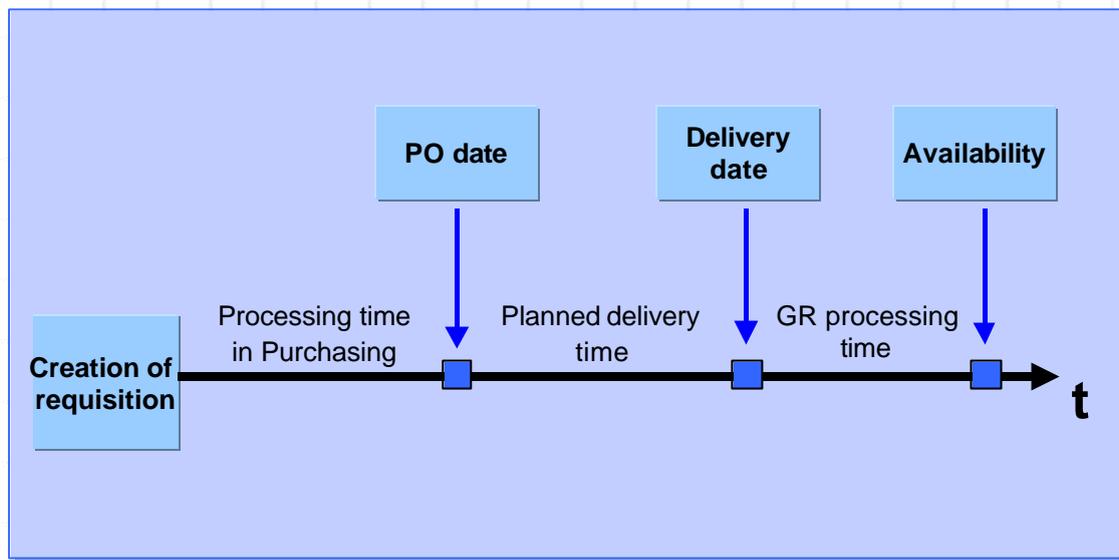
- From the date of the purchase requisition's creation, the R/3 System calculates the material's availability date by taking into account the three time components, purchasing processing time, planned delivery time, and goods receipt processing time.

- The processing time for Purchasing is the time required to convert a purchase requisition into a purchase order and issue it. The time required is measured in working days according to the factory calendar. It is plant-dependent and set in Customizing for Materials Planning.

- The planned delivery time is the time from the issue of the purchase order to the receipt of the goods at the vendor. You enter this in calendar days in the material master, info record, and /or contract.

- The GR processing time is the time required from the goods receipt until the material is available. It is entered in in the material master, and/or contract, in working days according to the factory calendar.

Stock / Requirements List and MRP List

General Structure

Variable Header

Overview Tree

MRP Elements

Stock / Reqmts List

current

Planned Orders
Purchase Requisitions
Production Orders
Purchase Orders
⋮
Plant Stock/
Storage Location Stk
Sales Orders
Independent Reqmts
⋮

Planning Run

MRP List

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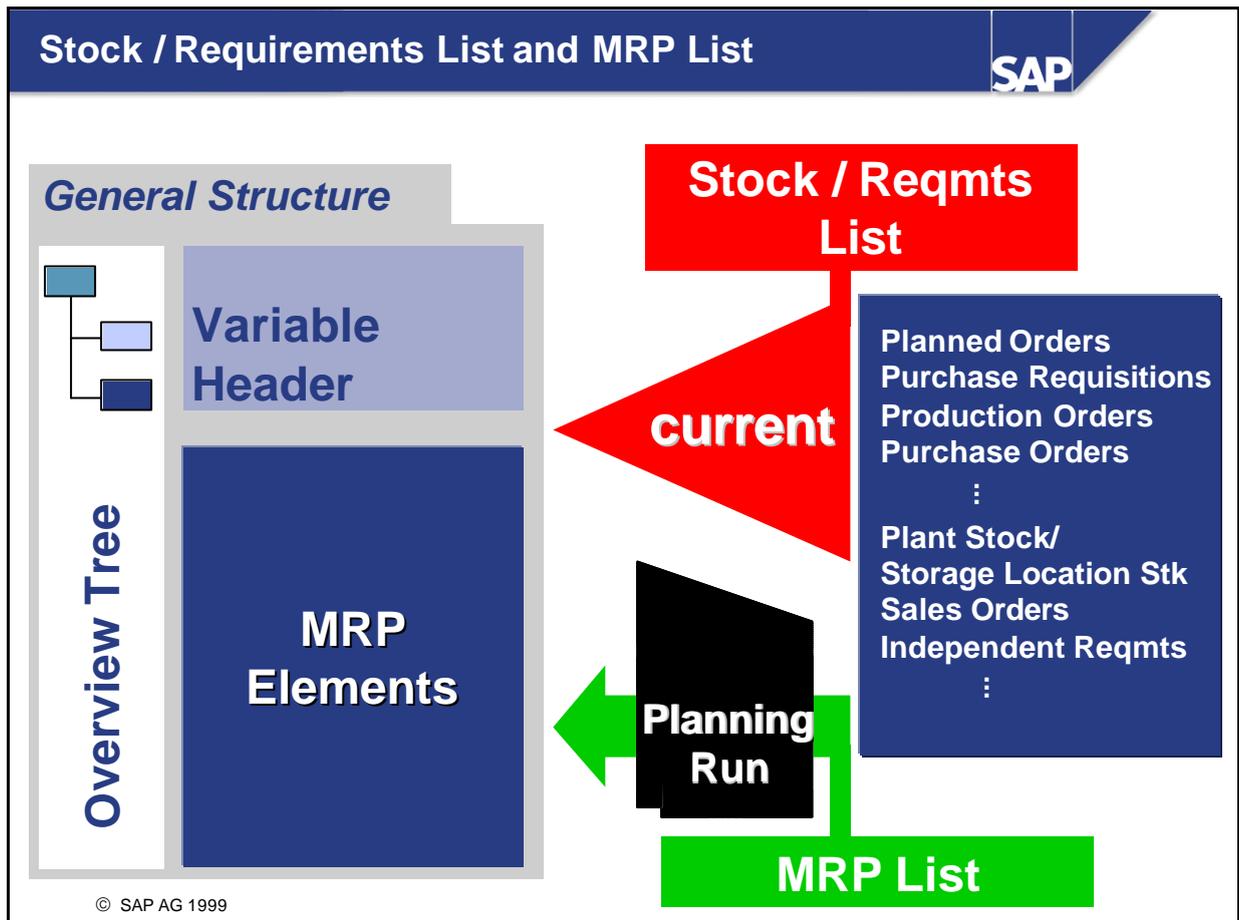
- You can evaluate the planning situation or the result of a planning run using the stock / requirements list or MRP list. You can use individual or collective access for this.

- The stock / requirements list is a dynamic list: it shows the current status of stocks, requirements and receipts. Changes are immediately visible as soon as the stock / requirements list is called up or the elements are read from the database using the refresh function in the stock / requirements list.

- The MRP list represents the result of the last planning run and therefore has a statistical nature. Changes that were made after the planning run are not visible. You can control whether an MRP list is to be created during the planning run.

- The two lists have the same basic structure:

  - Links are in the form of a tree in the MRP controller's worklist (optional).

  - Above the list there is the header with the material number. In addition, you can display further information using the header details.

  - The list itself contains the individual MRP elements and the corresponding available quantities.

- User-specific settings enable you to adapt the lists to your own personal needs - this applies to both lists (see Customizing, Evaluation for MRP, "Configure MRP list / stock/requirements list"). You can use a customer exit to show additional data, which can then be called up using a function key (see Customizing, "Customer exit: Program additional columns").

Stock / Requirements List

Header: Material Master Data

Today	Current Stock		Available Qty
Date	Receipt Element	Receipt Qty	Available Qty
Date	Requirement Element	Reqmt Qty	Available Qty

Receipt

● **Receipt Elements**

  ■ Planned Order
  ■ Production Order
 ■ Purchase Requisition
  ■ Purchase Order

Issue

● **Requirement Elements**

  ■ Sales Order
  ■ Planned Ind Reqmts
  ■ Dependent Requirement
  ■ Reservations

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- The stock / requirements list is an important inquiry, which shows the real-time view of stocks, receipts and requirements for a material.

- Each time the stock / requirements list is called up, the system reads the database for the appropriate information.

- This list is accessed by material, by plant or by MRP area.

- You can branch into various related transactions from the stock / requirements list.

- The structure and content can be configured to individual requirements using various filters and profiles.

Collective Display of Stock / Requirements List

SAP

Select by

- **Product group**
- **Class**
- **MRP controller**
- **Vendor**
  - Purchase orders/ Schedule lines
  - Purchase requisitions
- **Production line**
  - Production orders
  - Planned orders

Restrict further using

- **Material data**
- **Planning file entries**

Overview of Materials

- **Choose materials**
- **Utilities:**
  - 🔴🟡🟢 **Traffic lights**
  - **Sort**
  - **Find**
    - in the overview
    - in the individual lists

Lists set up in background?

Process

Stock / reqmts lists

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- Collective display of the stock / requirements list is possible with various selection criteria. For example, you can display all the lists, for which you are responsible as MRP controller.

- The system then displays a material overview with all the materials selected. If you set the "Set up lists in background" indicator, the following is available as orientation help: Traffic lights (you can determine the display criteria), various search functions in the overview and in the individual lists, sort function (also for individual customer segments by date or number). Using the search function, it is possible to select materials with particular exception messages.

- From the overview, you access the individual lists and can process the materials there. If, for example, you have selected several lists for processing using the search function, you can jump directly from one list to the next.

Collective Display of MRP Lists

Select by

- ■ **MRP controller**
- ■ **Product group**

Restrict further using

- ■ **MRP date**
- ■ **Processing date**
- ■ **Days' supply**
- ■ **Exception group**
- ■ **Processing indicator**
- ■ **Material data**

Overview of Materials

- ■ **Choose materials**
- ■ **Utilities:**
  - **- ● ● ● Traffic lights**
  - **- Processing indicator**
  - **- New exceptions**
  - **- Sort**
  - **- Find**
    - **- in the overview**
    - **- in the individual lists**
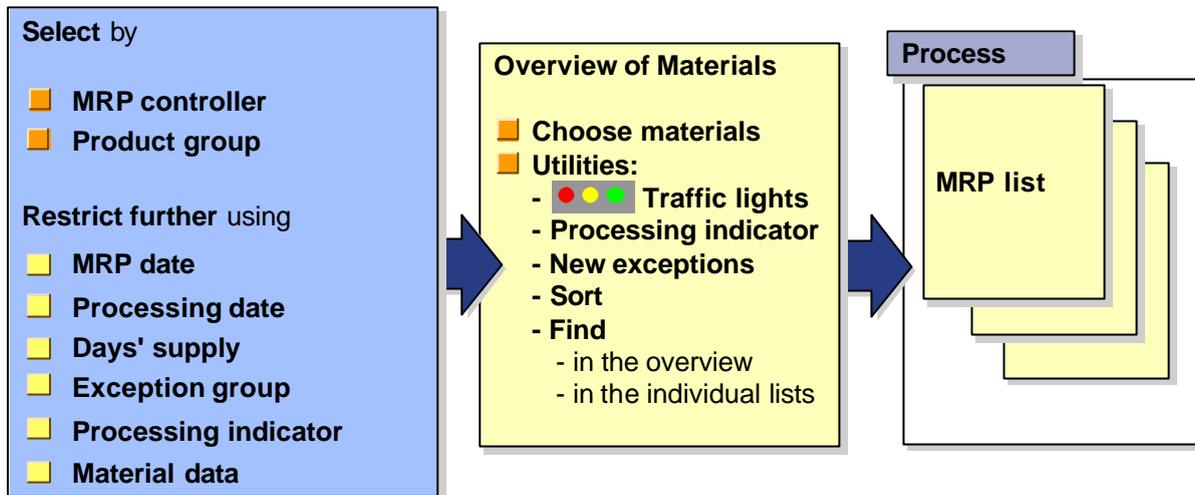
Process

MRP list

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- ■ The selection criteria for the collective display of MRP lists are different to those for the stock / requirements lists. For example, you can use the MRP date, the processing date or even the processing indicator for the selection.

- ■ The orientation help in the material overview is the same as for the stock /requirements list. There are the additional options of searching by processing indicator or new exceptions.

Exception Messages

Exceptions indicate:

- **New** order proposals created in the planning run
- Dates in the **past** (start, finish or opening date)
- Problems in **BOM explosion**
- Problems in **scheduling**
- **Rescheduling**

The following settings can be made in **Customizing**:

- Priority: if several exception messages exist for one MRP element, the system will display the message allocated the highest priority
- Creation of the MRP list depending on the exception message created
- Splitting into exception groups for the selection

- The MRP results are monitored with the help of exception messages. Exception messages alert you to situations that require further processing such as start date in the past, stocks falling below the safety level and so on. Using exception messages to highlight planning situations problems, the MRP controller can select those materials from the planning results that require additional processing.

- In the Customizing IMG activity "Define and group together exception messages", you can specify the characteristics of the exception messages.

- The system displays a maximum of two exception messages per MRP element.

- While not all exception messages will be displayed in the stock/requirements list, in the case of scheduling problems, the system displays both a corresponding exception message in the stock/requirements list as well as in the MRP list. A rescheduling proposal is also displayed. If this proposal is to be accepted, you must adjust the dates for the receipt element manually. The automatic adjustment of these dates is possible in the planning result display or evaluation (for example, in interactive planning or when the indicator "Display result" has been selected in the initial screen of the planning run): you can accept the rescheduling proposal here using the function "Reschedule order proposal".

Forecasting in Reorder Point Planning

SAP

Use of the forecast

Forecast-based planning

- ❏ The forecast values are copied as requirements and replace the reorder point
- ❏ Calculation of the safety stock by the forecast

Time-phased planning

- ❏ The forecast values are copied as requirements
- ❏ The planning run is only carried out on predefined dates

Reorder point planning

- 🟧 Calculation of the reorder point and the safety stock by the forecast

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- In reorder point planning, procurement is always triggered when the sum of warehouse stock and fixed receipts falls short of the so-called reorder point. The reorder point should cover the expected average material requirements during the replenishment lead time. The safety stock should cover both excess material consumption during the replenishment lead time as well as the additional consumption caused by delayed deliveries. The safety stock is therefore part of the reorder point.

- With automatic reorder point planning the reorder point and the safety stock are automatically calculated in the forecast run.

- On the basis of previous material consumption values the system determines the forecast values for future requirements. The reorder point and the safety stock are calculated from these values. These are independent of the service level determined by the MRP controller, and of the material replenishment lead time. They are then transferred into the respective material master record.

Prerequisites

Material 1
Plant 1000
Material

MRP data
MRP type

Forecast data
Forecast model
Period indicator

Consumption values
12.97	1253
11.97	1178
10.97	1182

Customizing MRP type

Forecast +

© SAP AG 1999
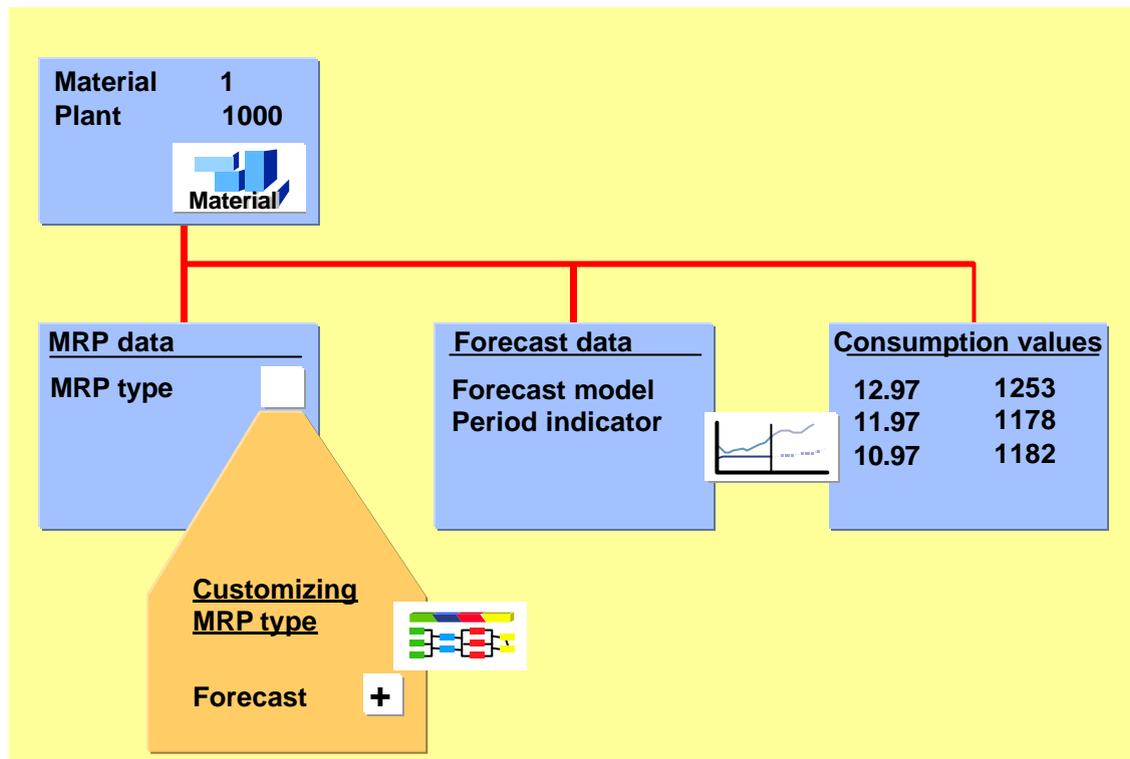
- In order to carry out the forecast for a material, you must first of all define the forecast parameters for this material in the material master record.

- You can only carry out the forecast if historical consumption values for this material are available. In general, the system updates the consumption values in the material master record during withdrawal postings. Before the forecast is carried out, the consumption values can be checked and corrected if necessary. In addition, you can manually enter historical consumption values as basic values for the first forecast.

- If no historical data exists for a material which the system can access during the forecast, you can carry out the forecast with reference to another material.

- The forecast results are only used for MRP if the forecast indicator is set in Customizing.

Forecast Models

Constant model

Trend model

Seasonal model

Seasonal trend model
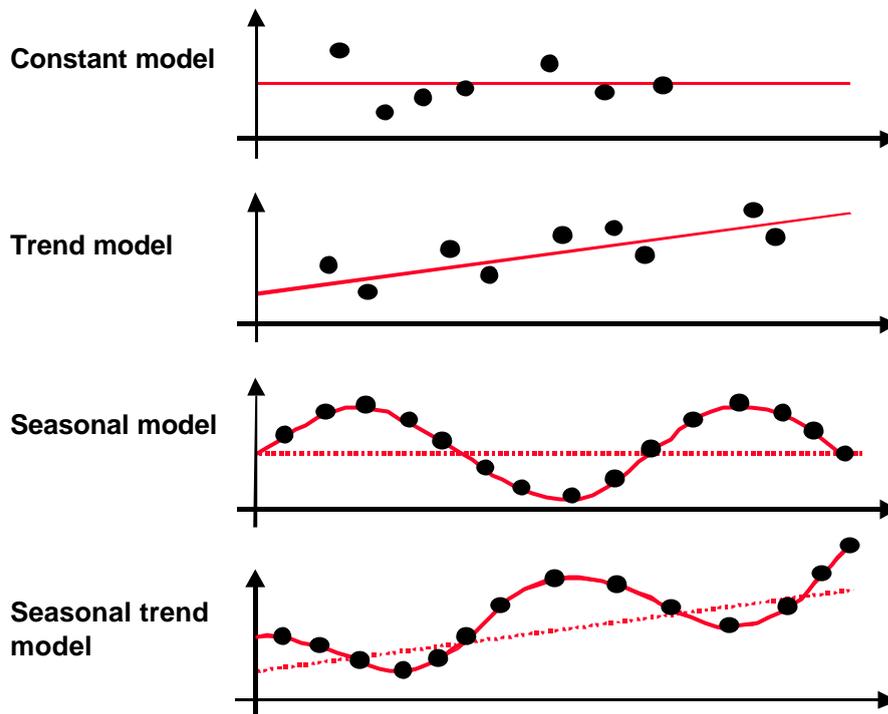
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- When a series of consumption values is analyzed, certain patterns can usually be detected. From these patterns it is then possible to differentiate between various forecast models:

    - Constant model: A constant consumption flow applies if consumption values vary very little from a stable mean value.

    - Trend model: With a trend model, consumption values fall or rise constantly over a long period of time with only occasional deviations.

    - Seasonal model: If periodically recurring peak or low values which differ significantly from a stable mean value are observed, it is a case of a seasonal consumption flow.

    - Seasonal trend model: A seasonal trend consumption model is characterized by a continual increase or decrease of the mean value.

- If none of the above patterns can be detected in a series of past consumption values, then we have an irregular consumption flow.

Exercises

Unit: Reorder Point Planning and Evaluation

Topic: Evaluation
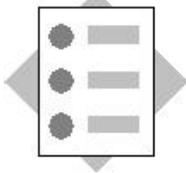
At the end of these exercises you will be able to:

- Explain the differences between an MRP list and a current stock/requirements list

- Carry out single-item planning for a material
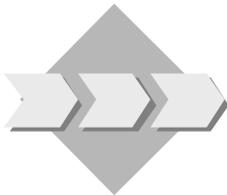
In order to get optimum information on the results of the planning run, you need information on the evaluation options for an MRP run.

You need this data to be able to cover your requirements by external procurement.

3-1   Changing MRP data for a material

Your warehouse has space for a maximum of 500 pieces of material **T-HM1##** in plant **1000**. Therefore, change the lot size of your material so that the warehouse stock is replenished to the maximum level of 500 pieces.

Which lot-sizing procedure would you use in this case?_____

3-2   Displaying an MRP list/current stock/requirements list

Display the MRP list for your material in plant 1000. What procurement proposals are shown in the list?

_____

Now display the current stock/requirements list for your material in plant 1000. What procurement proposals are shown here?

_____

Call the detail data for the header.

What is the MRP type?_____

What is the level of the reorder point?_____

What lot size is used?_____

3-3 Carrying out a single-item planning run

Carry out single-item, single-level planning for this material in plant **1000** as net change planning.

Purchase requisitions should always be generated. An MRP list should also be created as documentation of the result.
Do not display the result.

_____

3-4 Displaying the MRP list

Display the MRP list for your material in plant1000. What procurement proposals are shown in the list?

_____

What is the level of the procurement proposal?_____

Are there any exception messages?_____

3-5 Converting a purchase requisition into a purchase order

From the MRP list, convert the purchase requisition generated during planning into a purchase order.

Order the amount of the material proposed in the purchase requisition from your vendor **T-K12A##.** Use purchasing organization 1000 and purchasing group T##.

The material costs 10 UNI per item.

Purchase order: _____

3-6 Displaying the MRP list/current stock/requirements list

Display the MRP list for your material in plant **1000**. Which MRP elements are shown in the list?

_____

Now display the current stock/requirements list for your material in plant 1000. Which MRP elements are shown here?

_____

Why are the two lists different?
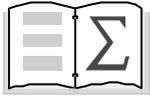
_____

You are now able to:

- **Explain the concept and the procedure for reorder point planning**

- **Set the reorder point planning entries in the material master**

- **Distinguish between the various functions for evaluating the planning result and also use them**

Solutions

Unit: Reorder Point Planning and Evaluation

Topic: Evaluation

3-1   **Changing MRP data for a material**

Logistics ® Materials Management ® Material Master ® Change ® Immediately

Material	*T-HM1##*
Select view(s)	*MRP 1*
Organizational levels	*Plant 1000 (Hamburg)*

MRP 1	
Lot size	*HB* *(Replenish up to maximum stock level)*
Maximum stock level	*500*

3-2   **Displaying an MRP list/current stock/requirements list**

Displaying an MRP list

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Evaluations ® MRP List - Material

Individual access tab page	
Material	*T-HM1##*
Plant	*1000*

The list shows a purchase requisition with a procurement proposal of 300 pieces.

Displaying the current stock/requirements list

Logistics ® Materials Management ® Material Requirements Planning (MRP)® MRP ® Evaluations ® Stock/Reqmts List

Individual access tab page	
Material	*T-HM1##*
Plant	*1000*

This list also shows a purchase requisition with a procurement proposal of   300 pieces.

Call the header data using *Expand header details*

MRP type: VB

Reorder point: 100

Lot size: HB

3-3   Carrying out a single-item planning run

Logistics ® Materials Management ® Material Requirements Planning (MRP)® MRP ® Planning ® Single-item, single-.level

Material	*T-HM1##*
Plant	*1000*
Processing key	*NETCH*
Create pur.req.	*1*
Create MRP list	*1*

3-4 Displaying the MRP list

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Evaluations ® MRP List - Material

Individual access tab page	
Material	*T-HM1##*
Plant	*1000*

The list shows a purchase requisition with a procurement proposal of 500 pieces.

Exception message: 42 (order proposal changed)

3-5 Converting a purchase requisition into a purchase order

Double-click on the purchase requisition

Choose *Convert purchase requisition into purchase order* in the *MRP element details* dialog box

Vendor	*T-K12A##*

Transfer the purchase requisition item to the purchase order

Order price	*10 Uni*

3-6 Displaying the MRP list

Logistics ® Materials Management ® Material Requirements Planning (MRP) ® MRP ® Evaluations ® MRP List - Material

Individual access tab page	
Material	*T-HM1##*
Plant	*1000*

The purchase requisition from the planing run is displayed as an MRP element

Displaying the current stock/requirements list

Logistics ® Materials Management ® Material Requirements Planning (MRP)® MRP ® Evaluations ® Stock/Reqmts List

Individual access tab page	
Material	*T-HM1##*
Plant	*1000*

The newly created purchase order is displayed the MRP element.

The two lists differ because the MRP list, unlike the current stock/requirements list, shows the status as at the last planning run and has therefore not yet been updated.