

## MM System Overview

### Introduction

The R/3 System developed by SAP sets the market pace for flexible standard software. Using advanced development techniques, SAP has produced a sophisticated system which provides you with data processing solutions for all business areas.

The application components of the R/3 System are characterized by their high degree of functionality, and take advantage of the latest technology. The high level of integrated applications within the R/3 System guarantees consistency of data throughout the system and throughout your company (see Figure 1-1).

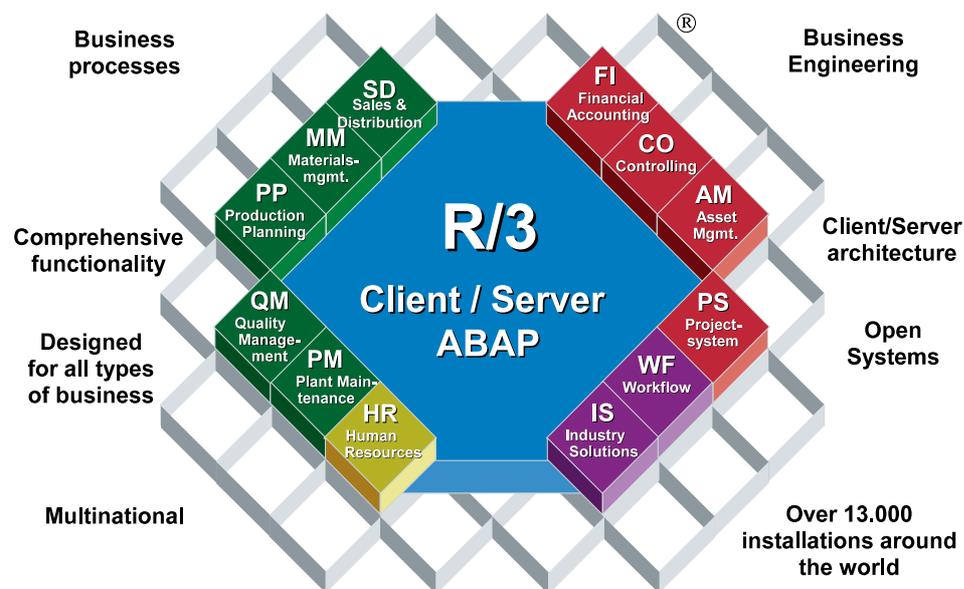


Fig. 1-1: R/3 System

The Materials Management application component supports materials management functions and processes in day-to-day business operations. Hardly any other field makes such wide-ranging and conflicting demands on a standard software package. This is due to:

- Industry-specific requirements
- Product-specific features
- Factors involving company policy
- Moreover, there are links and interfaces to other commercial applications.

- MM component The MM (Materials Management) application component includes the following transactions and functions:
- Material requirements planning
  - Material procurement
  - Inventory management
  - Invoice verification
  - Material valuation
  - External services management

Figure 1-2 shows the functions provided by R/3 MM.



Fig. 1-2: R/3 MM: Scope of Functions

Material requirement planning

R/3 MM can be logically integrated with other SAP application components including:

- Production planning and control
- Warehouse management

R/3 MM provides the basis for material requirements planning (MRP) through its integration with the R/3 System purchasing and warehouse/inventory systems application subcomponents.

Consumption-based, material requirements planning depends on consumption (usage) data. This data is used to generate procurement proposals either on the reorder point principle or using forecasts. Additional requirements are recorded as requisitions and are allocated to the responsible buyers in purchasing. In the process, appropriate order quantities are determined and an adequate service level is ensured.

Purchasing

Comprehensive functionality is provided for purchasing to optimize relevant work processes. This ranges from generating purchase requisitions to printing out

purchase orders and longer-term purchase agreements. Purchasing decides whether orders can be placed using existing quotations, or if it is necessary to first issue additional RFQs. To a large extent, POs can be created automatically on the strength of data already available, as in the case where items are allocated to outline purchase agreements. In addition, the system provides information for:

- Vendor evaluation purposes
- Vendor selection
- Volumes (regarding a material or a vendor)
- Monitoring ordering activities

Functions are also available that allow buyers and material planners to obtain information on:

- Stock levels
- Stock availability (in terms of location and time)
- Vendors
- PO histories
- Delivery dates
- Open-order quantities

Transactions that lead to changes in stock levels are handled within the component. These can include:

- Goods receipts
- Return deliveries
- Planned and unplanned stock withdrawals
- Stock transfers
- Reservations
- Stock adjustments

Through real-time entry, checking and correction of the movement of goods, data is kept as up-to-date as possible and error levels are reduced to a minimum. This is an essential prerequisite for accurate and efficient materials planning and control.

At the time of goods receipt, all relevant data is defaulted from the PO. The system keeps track of under-deliveries and over-deliveries. With each material movement, the change in quantities of stock on hand is updated. Stock values are updated through the automatic account determination facility.

The warehouse management component allows you to define and administer complex warehouse structures. The structures can be divided into different physical or logical units, such as high-rack (high-bay) and block storage areas. They can be organized and administered on a random basis or on the fixed storage bin principle. The system uses defined strategies that indicate where goods can be placed in storage, from which location they are to be taken, or where order-picking should take place.

The invoice verification (invoice matching or invoice clearance) function clearly demonstrates the degree of integration. Information is available from the material

Inventory Management

Goods Receipt

Warehouse Management

Invoice Verification

master record, the purchase order, and goods receipts. In the ideal case you need only enter the total for the items on the purchase order. If the total matches the pre-planned values, all postings are effected and the invoice is released, or cleared, for payment. If pre-set tolerances are exceeded (for example, quantity, price, and delivery date), payment of the incoming invoice is blocked.

#### Procurement of External Services

MM External Services Management supports the entire bid invitation, contract award/PO placement, and acceptance cycle for procuring externally performed services. The program is completely integrated within Purchasing. Service specifications are created within the framework of the relevant purchasing documents. Requirements are transmitted to Purchasing from Plant Maintenance (PM) and Project System (PS) either automatically or manually.

You can procure planned services, which are services whose precise nature and scope are known at the time of ordering. You can also procure unplanned services, which are services that can only be specified at the time their actual performance is recorded. Value limits facilitate the budgetary control of unplanned services.

Services are recorded through service entry sheets and subsequently accepted. Like all purchasing documents, service entry sheets can be subject to a release (approval) procedure. Accepted entry sheets constitute the basis for the invoice verification process.

<b>Logistics Information System</b>	The logistics information system supports both day-to-day and strategic decision making through variable analyses.
<b>Standard System</b>	With its MM application components, the standard R/3 System covers a wide range of common requirements. Its development has been shaped by the experience and suggestions of users from many different branches of industry. The system is truly international in scope.
<b>Easy to use</b>	The R/3 System requires no special knowledge. Ease of use is ensured by its graphical user interface (GUI) and logical structuring of applications. As a result, you quickly learn your way around the system.
<b>Customizing</b>	The customizing facility allows fast, reliable, and economical implementation and extension of SAP application components at R/3 System customer sites.  Customizing tools facilitate the adaptation of standardized functionality to meet your needs. This allows you to address your company's individual commercial requirements.  All customizing activities use this facility, which is also employed to control the documentation of the project.
<b>Implementation Guide</b>	To support implementation, SAP has developed an on-line <i>Implementation Guide</i> . This facility provides important information which gives an overview of the various R/3 application component functions. Information is also given on configuration and standard system settings. You can branch directly to the configuration functions from within the <i>Implementation Guide</i> .
<b>R/3 System Data Modell</b>	The SAP Enterprise Data Model describes the data architecture of the R/3 System from a business perspective. It provides a transparent representation of information and processes in the application software and describes their interdependence. This leads to a better understanding of the integration and interconnections of the R/3 System at a business level. The transparency of the

Data Model helps you understand of the capabilities of the R/3 System. Consequently, it enables you to make optimal use of the R/3 System.

## Enterprise Information Technology Trends

Marketplace pressures today drive companies to simultaneously reduce both costs and time to market, while improving product quality and capability. Every firm struggles to reengineer itself, its production processes and its products to meet these requirements.

As a result, the successful business of tomorrow will be fundamentally different from the business leaders of today. These differences will extend to every aspect of information systems these companies use. These differences — ranging from real-time data access and ease of use, to open systems and process integration — are also the reasons why the R/3 System serves your needs better than any other solution to ensure your future's success.

## Advantages of the R/3 System: The De Facto Standard

The R/3 System offers you a software solution that covers all commercial processes and transactions commonly occurring in a company or group of companies.

Functionality

All work processes within a company or group of companies are linked through data and functions using the R/3 System.

Integration

The R/3 System has a uniform graphical user interface for all application areas.

User-Friendliness

System-controlled customizing procedures allow you to create solutions from a wide variety of prepared application variants to satisfy individual requirements.

Individual Solutions

Whether in a departmental organization or on the warehouse or factory floor, change is the only facet of your business that will not vary. Adaptability must be universal, and the R/3 System's flexible structure and extensive integration helps make that easier.

Flexible Structure

SAP's enterprise-wide R/3 System solutions meet the needs of constantly changing, continually evolving businesses. The R/3 System's application components are fully integrated. Transaction-related process chains trigger the next activity as needed from engineering to materials management, to production planning, to sales and distribution. The R/3 System's full integration pulls your enterprise together, promoting data access, flexibility, and productivity. No other product or suite of products provides the R/3 System's functional links between processes that multiply the power of each person's work.

Enterprise-Wide Integration

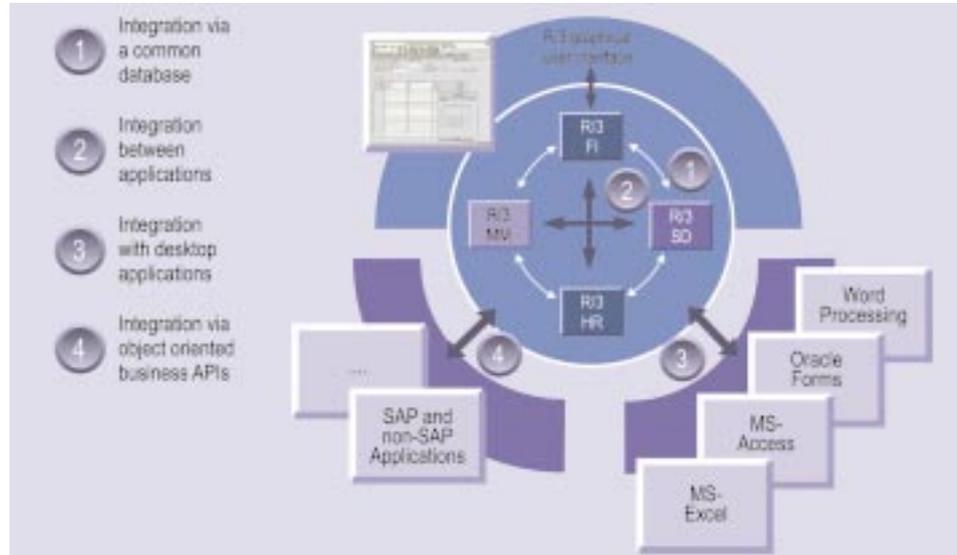


Fig. 1-3: Application Integration in the R/3 System

- Real-Time Information** The R/3 System's ability to "drill down" to whatever level of detail you need is legendary. More than any other product, the R/3 System provides up-to-the-minute, real-time information wherever and whenever you need it.
- Mission-Critical Business Processes** SAP has more than 20 years of experience designing sophisticated application software for backbone and mission critical business processes. Nine of the top ten Fortune 500 companies use SAP software. SAP developed most of the R/3 System's functionality in close cooperation with these customers. Consequently, it has integrated the best business practices of the world's most successful companies into the R/3 System. The R/3 System's business processes are flexible, pragmatic and well documented. Today they form a widely acknowledged standard for Business Process Reengineering (BPR).
- Best of Breed** Users want standard software as well as standard business processes and guidance on how to implement them successfully. With the R/3 System you get the "best of breed" for all common business processes. You do not need to compromise on flexibility. If you need or want to fine tune or tailor your R/3 System, the capability is there.
- Enterprise-Wide, Three-Tier Architecture** The R/3 System remains the only enterprise-wide, three-tiered architecture. The R/3 System's three-tiered client/server architecture separates the system into areas devoted to database, application functionality, and desktop presentation. This structure promotes maximum flexibility, freedom of application component choice and the ability to change and add to the system as your organization grows.

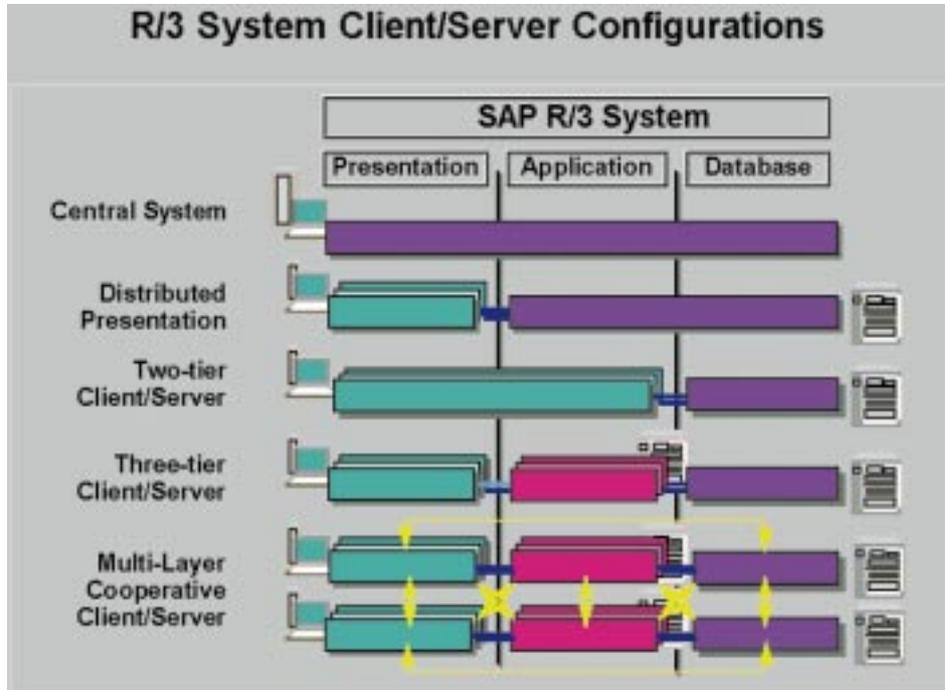


Fig. 1-4: Three-Tier, Multi-Layer Cooperative Client/Server R/3

The development of the Internet, including the World-Wide Web, promises to make dramatic changes in communications between businesses and customers. SAP is working with several partners to develop enhanced Internet extensions for the R/3 System. For additional information, see SAP's Web pages at: <http://www.ext.sap.com>

The R/3 System's integrated structure helps your company make the transition to concurrent engineering. Concurrent engineering cuts time-to-market by stacking up business processes whenever functions can take place concurrently rather than consecutively. The R/3 System's flexibility and integration help you form the real-time workflow application links required for concurrent engineering.

Concurrent Engineering

The R/3 System promotes lean implementation through its modular structure. By selecting key portions of the R/3 System for first-time implementation, and minimizing customization, new users bring the full power of the R/3 System to address their business issues with great speed, at a reasonable cost. Once running, the R/3 System makes it easy to add more functional pieces. Tools on various system levels allow you to fine tune all R/3 System functional modules. Gradually adding functionality makes core solutions available sooner without sacrificing long-term application muscle.

Lean Implementation

Desktop integration in the R/3 System means that whenever you want data moved into a desktop PC application, it is a mouse-click away. Download or export a file to your PC's hard drive and then open it in your favorite spreadsheet or word processor. No awkward or failure-prone communications between hardware or to hinder hinders your productivity.

Desktop Integration

SAP's R/3 System Reference Model helps you determine the opportunities in your organization for improving efficiency and productivity using business process reengineering. The result is the reorganization of your organization around event-driven process chains configured to meet the specific needs of your enterprise. This can help streamline your organization to increase efficiency, customer satisfaction, and profitability.

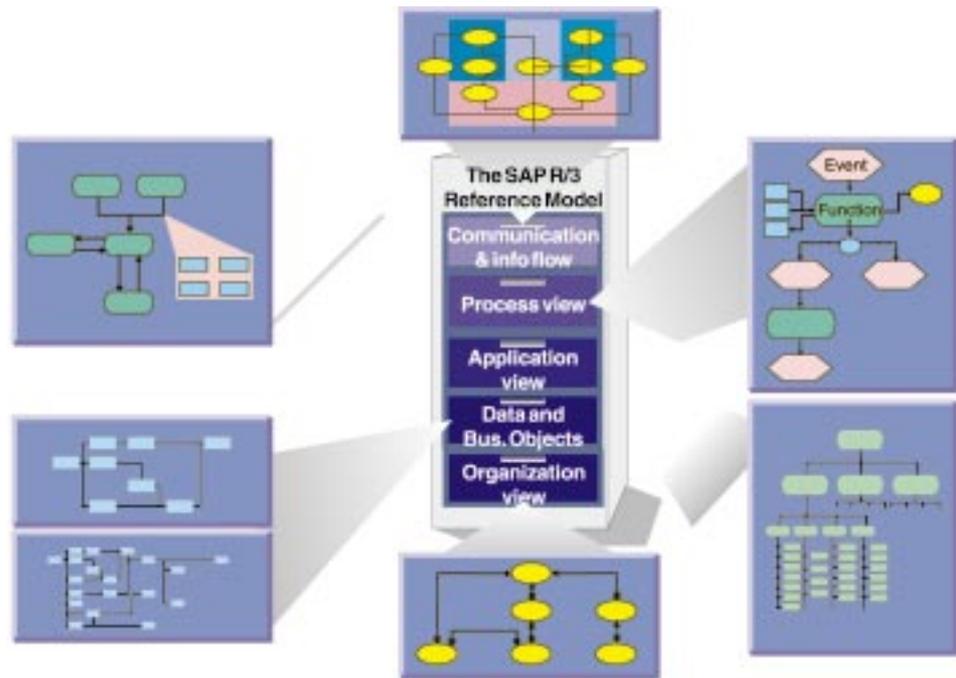


Fig. 1-5: SAP R/3 System's Reference Model

#### Online Integrated Graphics

Online integrated graphics in the R/3 System save you time and effort, while making your information more meaningful. From most locations in the R/3 System, you can instantly create full-color 2-D or 3-D graphics from your data. If you change any data, you can instantly see it affect the graphics you have selected. You can also use your mouse to change graphics manually.

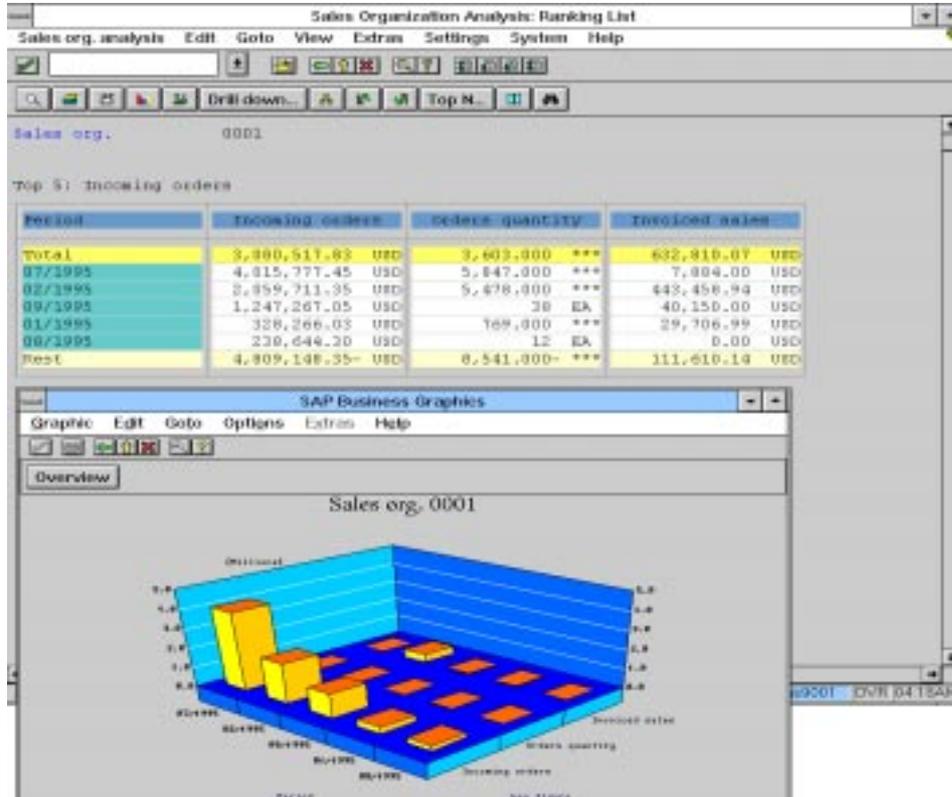


Fig. 1-6: Online Integrated Graphics

No matter how much you customize your R/3 System, you are never far away from open systems standards that link you to the rest of the world. Your R/3 System's servers can run on a number of UNIX-based open systems hardware platforms from vendors such as Bull, Digital, HP, IBM, SNI, Compaq, as well as IBM's AS/400. Client desktop systems include PC-compatible systems, Macintosh, and various Windows NT systems. Choose your central R/3 System relational database from Oracle, Informix, ADABAS, DB2/6000, or Microsoft SQL Server, since all support ANSI-SQL queries. Graphical interface systems include MS Windows, OSF Motif, Presentation Manager, and Macintosh. The R/3 System also supports robust communications technologies including EDI, TCP/IP, CPI-C, OLE 2.0, and OSF/DCE/DME.

Open Systems Standards

**Graphical User Interface** The R/3 System's graphical user interface maintains a number of functions at your fingertips and ready for instant use. You can easily navigate through the R/3 System using pull-down menus, icons, fast-path codes, drill-down buttons, and other features.

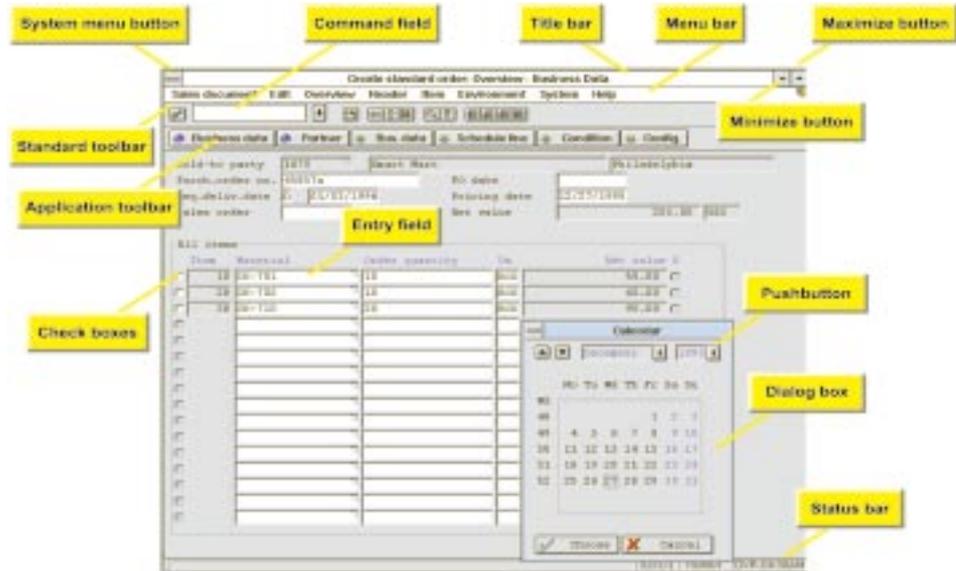


Fig. 1-7: R/3 Graphical User Interface