

Chapter 2

SAP Business Suite

SAP Business Suite is composed of various business software applications. They enable companies to plan and execute processes while saving on operating costs and, at the same time, tapping into new business opportunities. The SAP Business Suite applications are based on the SAP NetWeaver platform and support the best-practice methods of all branches. In addition, the suite provides integrated business applications and functions from the realms of finance, controlling, human resources, assets management, production, purchasing, product development, marketing, distribution, service, supply chain management and IT management.

2.1 SAP Business Suite as Standard Software

The term *standard software* refers to a group of programs that can be used to process and resolve a series of similar tasks. These programs can generally be adapted to fit user-specific needs through targeted configuration, or *customizing*. Configuration in this sense means that process steps, process chains and individual functions—as reusable parts of process steps—can be influenced by entering configuration data (usually in several database tables).

Standard software can aid in preventing normal processes, such as invoice verification or transport planning, from having to be covered by the functions of individual programs. Individual software often leads to fragmented systems that are difficult to maintain, and also causes a great deal of integration work and complex data exchange efforts. Examples of standard software include the Microsoft Office package, which contains programs for word processing, address administration, presentation generation, etc., and SAP Business Suite, with its functional components mentioned at the start of this chapter.

Standard software can frequently be implemented in businesses at a much lower price than individual software. The complex, bug-ridden and pricey software development process has already been taken care of by standard software producers, such that the respective programs can be directly procured and installed. The

implementation project for new software can be directly targeted at configuring processes, generating master files, training users and transitioning from any previously used software. Due to the fact that many users are already working with the same standard software, a great deal of experience has flowed into its development and optimization, from which new customer's profit. In addition, standard solutions are regularly updated and often offer 24/7 maintenance service.

A company's decision to implement standard or individual software in a new information system must be well thought out, and depends on a few prerequisites. Standard software is flexible and frequently offers several advantages, such as a long-term guarantee of functional improvements by the producer or adaptability to changing business processes. On the other hand, the disadvantage is that the standard software might only contain 50–80% of the desired functions, with the rest having to be added via other products or individual extensions.

Whether or not these advantages apply in individual cases depends on the technical and organizational prerequisites: One criterion is whether the IT infrastructure of a company is outdated or no longer maintainable. An outdated system can often be replaced in the process of introducing standard software. Usually, however, parts of the IT infrastructure must continue to run and be linked to a new solution. In such cases, it could be that the standard software offers no suitable interface, such that either elaborate supplementary programs are required or the use of individual solutions becomes necessary. From an organizational standpoint, the standard software should at least cover the majority of a company's needs.

A further, often very important criterion is the willingness of a company to invest in a uniform software platform with the aim of gaining cost and infrastructure advantages with a harmonious IT system throughout all corporate and application areas.

2.2 Layer Models and Components of an SAP System

An SAP system such as SAP Business Suite can be divided into three layers:

- Technical hardware layer
- Technical software layer
- Application component layer

In this chapter, we will present the two primary software layers of the SAP system that bring to life business processes within a company—with a special eye to logistics.

- **The application platform SAP NetWeaver**

This layer includes the central system (kernel) and the application server (AS), which are necessary to operate all SAP applications. SAP NetWeaver is described in more detail in the Sect. [2.3](#).

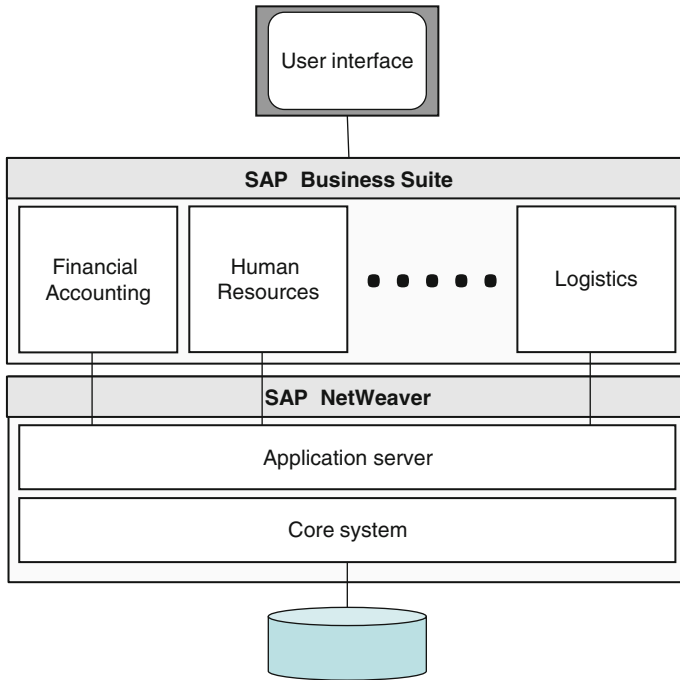


Fig. 2.1 Basic software layers of an SAP system

- **The application family SAP Business Suite**

This layer offers a portfolio of business applications, an overview of which is provided Sect. 2.4. More detail on the logistics components can be found further on in the book.

Figure 2.1 depicts the basic software layers of an SAP system.

The software layers of an SAP system, in turn, operate on various technical hardware layers. The hardware and server layers are composed of the following elements:

- **Database server**
The server on which the database of the SAP system is operated.
- **Application and integration server**
The server on which the applications run and through which they are integrated.
- **Internet server**
Servers that supply Web access to the applications.
- **Presentation layer**
Generally the computer or hand-held device on which the consumer uses the applications.

Figure 2.2 shows how the individual software layers can be distributed over several servers (computers) with dedicated functional areas.

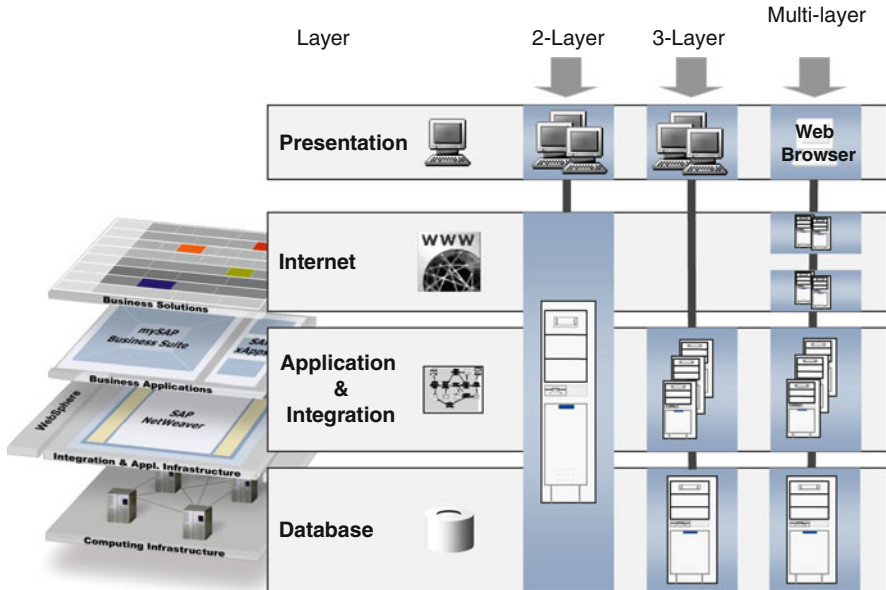


Fig. 2.2 Technical hardware layers (servers) of an SAP system

In the simplest case, only a two-layer arrangement is utilized, in which the database and application programs operate on *one* server. Access is then granted via local computers (PCs), which as a rule are equipped with a local user interface, the SAP GUI (Graphical User Interface). Optionally, the system can also be installed on a Web server to enable Web-based user interface technologies (so-called Web Dynpros).

The more common arrangement is either the triple- or multi-layer model. In the case of the triple-layer model, user access is also enabled via the SAP GUI or Web Dynpro; however, the individual application processes can be distributed over several servers within an application layer, which makes the system very easy to scale, i.e. adapt to larger numbers of users by connecting additional application servers. This scaling option also exists in the multi-layer model, which has the advantage of an additional scaling option for Internet access via a Web server.

2.3 SAP NetWeaver

With SAP NetWeaver, SAP offers a comprehensive application server to operate SAP applications and other supplementary partner products. SAP NetWeaver has a variety of functional areas and modules which together support the operation of the actual business applications. Figure 2.3 provides an overview of these areas:

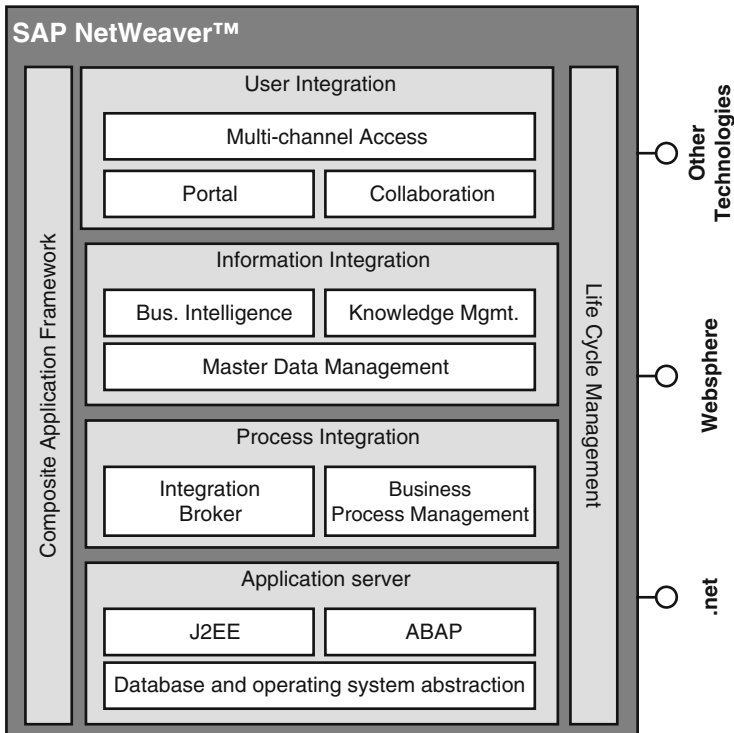


Fig. 2.3 Functional view of SAP NetWeaver

- The *application server* (SAP NetWeaver Application Server [SAP NetWeaver AS]), with its Java and ABAP stack, along with the technical database and operating system abstraction, form the basis for the technical operation of the applications.
- *Process integration* (SAP NetWeaver Process Integration, [SAP NetWeaver PI]) employs its integration broker to aid in integrating the individual applications with each other as well as other in-house systems or external business partners. The Business Process Management component represents the coordinated unit for complex business processes with preset communication procedures.
- *Information integration*, via SAP NetWeaver Master Data Management (SAP NetWeaver MDM), ensures the consistent distribution of master data in an application bundle and for uniform quality of the distributed data.
- *Knowledge management* enables the assessment of unstructured information from a variety of data sources, such as text documents, presentations or HTML files, with the aid of central, role-specific access points. It also supplies a multi-application, full-text search.
- *SAP NetWeaver Business Warehouse* (SAP NetWeaver BW) serves as the central collection of performance data from all SAP applications and other sources that can, in turn, be used for statistical evaluations.

- *User integration* provides users of application components with a central access point and a homogenous depiction of the application context from various applications (including non-SAP applications). Via the user integration and the portal, collaboration scenarios can also be processed.

Following this rough functional overview of SAP NetWeaver, we will now proceed down one level and have a look at the SAP NetWeaver basement, so to speak. Figure 2.4 shows an overview of the SAP NetWeaver from a technical standpoint.

Linked to the respective operating system, SAP NetWeaver possesses a kernel similar to an operating system that blocks the superordinate application server from

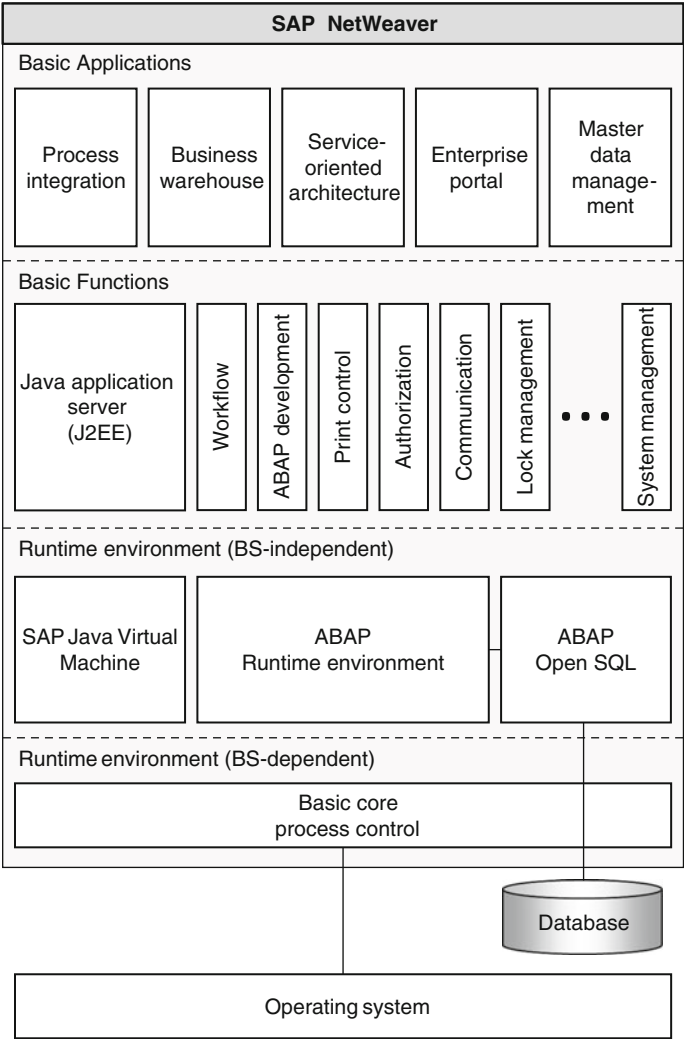


Fig. 2.4 Technical view of SAP NetWeaver

the quirks of the hardware and operating system, thus harmonizing operation of the application server.

One important advantage to the harmonization of the IT system landscape is an improved maintainability of the applications, which no longer need to worry about the respective release-specific “peculiarities” of the operating system and database.

With the ABAP and Java runtime environments, SAP NetWeaver serves as the basis of almost all SAP applications, which can thus be run in a homogenous environment. ABAP is SAP’s own programming language, which began as a reporting language similar to COBOL. ABAP has been further developed into a high-performance, object-oriented programming tool that is especially suited for the development of business process applications due to its language constructs. An efficient runtime control enables independence of all application processes, such that a faulty program will have no effect on other programs.

Advantages of ABAP

Many programmers turn up their noses at ABAP, yet the fact that SAP systems are built on SAP’s own programming language conveys several advantages: On one hand, SAP, and thus the user, has complete control over the extent of the language and implementation, which guarantees a high degree of quality. On the other hand, the source text of the complete ABAP-based application and base system is provided along with the software, such that your company has access to all of the possibilities of expanding it to your needs. Program code enhancements can be easily incorporated in a controlled manner via so-called *enhancement spots*, without the danger of collision with SAP maintenance releases and corrections.

In Java applications, the main complaint for a long time was a lack of process decoupling of Java Enterprise applications, i.e. if a program ran uncontrolled, it could pull down the entire application server. SAP worked on this problem as well, generating its own runtime environment for Java, the Java Virtual Machine, which provides for the independence of Java processes as they occur in the ABAP environment.

Certification According to Java EE 1.5

Version 7.1 of SAP NetWeaver Application Server Java is completely certified according to Java EE 1.5.

2.3.1 Application Support via SAP NetWeaver

SAP NetWeaver attaches AS (application support) functions to the OS-independent ABAP and Java runtime environments, which provide uniform basic functions for the entire Business Suite (see Fig. 2.4):

- **Transaction concept**

The transaction concept in the SAP system makes sure that business operations belonging together are also consistently saved together. If, for example, an invoice is generated from a customer order, not only should the complete invoice be saved, but the order itself should consistently show the respective status.

- **Process control, work processes, load distribution**

The process control distributes processor capacity to the individual users running application programs on an application server. In addition, it makes sure that users who have just logged on and newly invoked processes start on the server with the lowest load.

- **Lock concept**

The lock concept prevents more than one person from making changes to a single business object at the same time (without knowledge of each other's activity). For instance, this function would prevent an employee in Dallas from editing a customer order while another employee in Portland is canceling that same order. If someone is working on an object in edit mode, other users who attempt to access the process receive a message and can only access it in view mode. In some newer transactions, a further concept with so-called *optimistic locks* is employed, which allows more than one person to access certain parts of the object.

- **User management and authorization control**

Via a comprehensive role and authorization concept, you can precisely define which users or user groups can display, edit or run certain objects and processes. A call center employee, for example, is allowed to generate new orders and invoices but not to correct invoices because this is not part of that person's sphere of authority.

- **Print management**

Printers can be centrally managed within an SAP system. Printer queues are provided and enable efficient processing of printer jobs from various applications. The print management also includes the integration of Adobe (Interactive) Forms.

- **Communication and service-oriented architecture**

Technical communication within the system via application interfaces (application-to-application, or A2A) is available here, as is communication with business partners via standard interfaces (business-to-business, or B2B).

A service-oriented architecture (SOA) is also available, which is part of the process integration. The majority of SAP applications are equipped with Web services, such that simple communication is possible. The services are pre-defined on the application object level; that is, they fulfill business operation functions (such as generation of a customer order). Further communication processes are provided by fax and e-mail integration.

- **Workflow**

SAP NetWeaver comes with a complete workflow control that is used extensively in the applications. This workflow control can be configured in a variety of ways and integrated into the Office functions of the SAP system.

- **Development environment and Correction and Transport System**

A complete ABAP and Java development environment is integrated into SAP NetWeaver, which makes it especially easy, particularly in the case of ABAP, to expand the system and implement current processes.

The Correction and Transport System enables you to easily import completed developments and settings or corrections performed by SAP into other SAP systems and adapt them to the coding status of the respective system.

2.3.2 Three Significant Concepts of SAP Systems

Three significant components that concern the basic functions and applications of SAP NetWeaver as well as the SAP Business Suite are the client concept, the ability to establish organizations, and the adaptation of the systems to customer-specific business processes (called *Customizing* and the *Implementation Guide* in the SAP system).

The *client* in an SAP system is a concept for the comprehensive logical separation of various work areas within the system. Technically speaking, a client is the first key field of every application database table. When a user logs into an SAP system, he or she always enters a client number (000–999). For this, the user has to be defined in that particular client. After a successful login, the user only has access to the data and processes present in that client. Data of other clients is not accessible (it can neither be displayed nor edited). This enables separately operating organizations to work parallel to one another in their own client areas within a single SAP system without influencing one another (but a maximum of 150 clients per system is recommended for performance reasons). Via integration processes, data transfer can also take place between clients.

Thus, the client is a strict, organizational separating criterion for users working independently on an SAP system. Figure 2.5 displays the technical criteria *System* and *Client*.

For users working in separate organizations within the same company, further organizational layers are available that are developed in the applications:

- **Separate systems for corporate subsidiaries and/or regions**

Such a case is characterized by complete logical and technical system separation, uniform usage, data integration via SAP NetWeaver PI, common or separate technical financial processing.

- **Separate system-internal clients for corporate subsidiaries and/or regions**

This case is characterized by complete logical separation with common usage of technical system resources, uniform usage, data integration via SAP NetWeaver PI, and common or separate financial processing.

- **Internal company code for corporate subsidiaries and/or regions**

This case is characterized by complete technical financial separation with a common use of technical system and logistics resources, uniform usage, and common or separate financial processing.

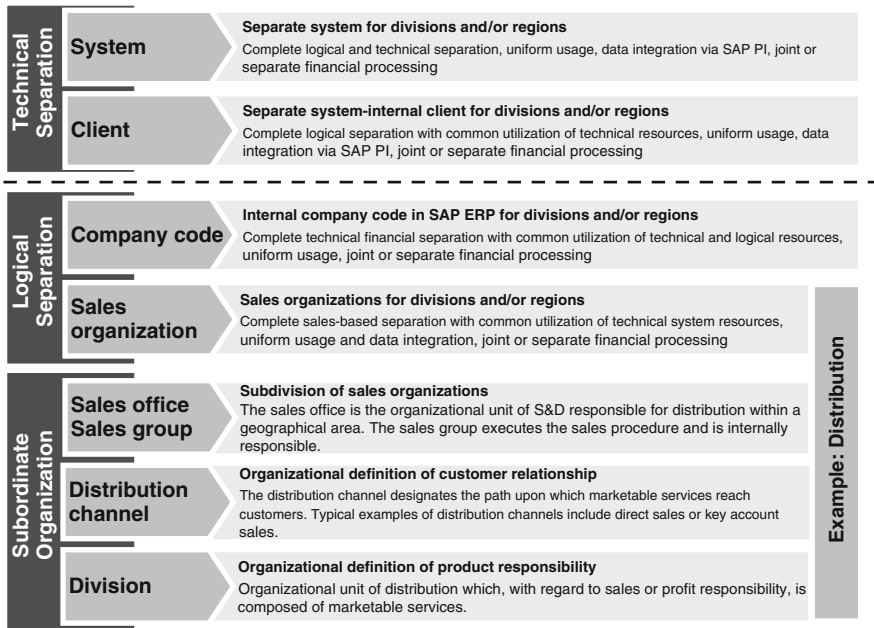


Fig. 2.5 Organizational layers of an SAP system

- Sales organization for divisions and/or regions**
 This case is characterized by complete technical sales separation with common usage of technical system resources, uniform usage and data integration, common or separate financial processing.
- Subdivision of sales organizations**
 The sales office is the organizational unit of the sales and distribution department, responsible for distribution within a geographical area. The sales group executes the sales procedure and is internally responsible.
- Organizational definition of customer relationship**
 The distribution channel designates the path upon which marketable services reach customers. Typical examples of distribution channels include direct sales or key account sales.
- Organizational definition of product responsibility**
 This case is characterized by the distribution department forming an organizational unit which, with regard to sales or profit responsibility, is composed of marketable services.

There are further specific organizational hierarchies within the individual applications. For instance, in purchasing, there are purchasing organizations and purchasing groups. In distribution, there are sales organizations, distribution channels, etc. These organizational layers enable users to work together within a single client of the SAP system, while on the other hand being limited to their respective organizational areas.

(Example: A purchaser from Chicago is not authorized to create orders for St. Louis and, of course, cannot generate an annual balance sheet in Financial Accounting.)

As explained above, configuration capability is an extremely important feature of business software. In the SAP system, this configurability is known as *Customizing* or *Implementation Guide*. The latter is divided into the individual configuration areas according to functional aspects. Using Customizing (which is really configuration and not changing the system coding), you can, for instance, very precisely control which processes within the Business Suite can be performed and how the individual process steps are composed.

Figure 2.6 shows an example from the realm of customer orders (distribution):

1. Define the available order types (sales document type), such as express order, direct sales, standard order and their functional details (such as a credit limit check).
2. Define which of your distribution organizations are allowed to use which order types (for example, only direct sales orders for shop sales).
3. Define which order items are to be permitted in which order types and what parameters are included. For example, you could exclude a service option (such as performance of maintenance) for direct sales.

Customizing an SAP system allows you to make extensive settings (in the *Sales* area alone, there are about 100 screens offering process settings), which you can use in an optimal manner where necessary to simplify processes. However, you can also deliberately keep the settings simple.

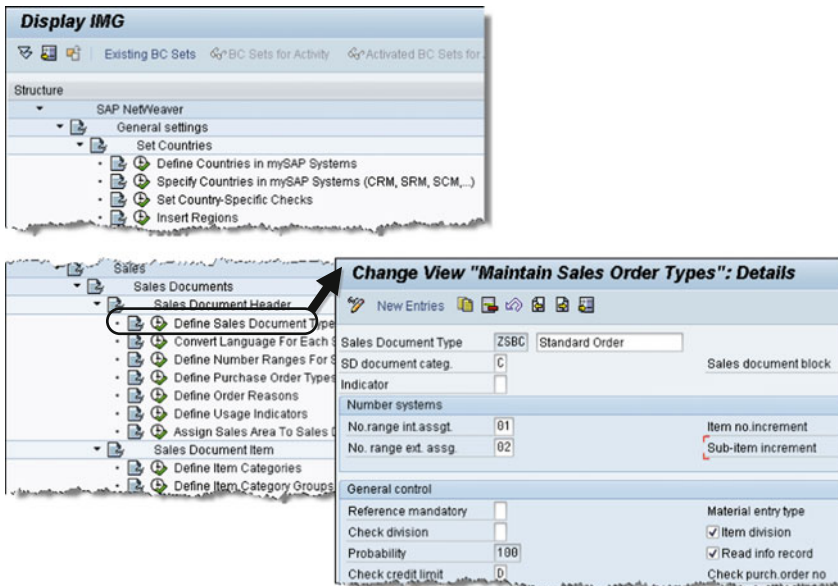


Fig. 2.6 Excerpt from Implementation guide with customizing settings for a customer order (distribution) and details of an order type

2.3.3 *Application Components*

SAP NetWeaver Process Integration (SAP NetWeaver PI) is responsible for data exchange (interoperability) within a system environment as well as with external business partners.

Definition of Interoperability

Interoperability is the ability of two or more system components to exchange and utilize information.

With the aid of this data exchange, you can go beyond individual applications, profiting from the functions of the integrated environment, yet still keep overall operating costs low.

SAP NetWeaver PI provides the following major interoperability functions:

- **A2A and B2B integration within and between application systems and business partners**

Business-to-business and application-to-application scenarios can be expanded across all messaging technologies and product limits. This includes integration with Microsoft BizTalk and IBM WebSphere servers. Using communication-specific adapters, SAP NetWeaver PI can be employed for EDI communication in the various conventional formats (EDIFACT, ANSI, X.12, ODETTE, VDA, etc.).

- **Interoperability of Web services**

SAP NetWeaver PI provides for the interoperability of corporate applications and Web services with external components, in order to enable service-oriented solutions.

- **Service-oriented architecture**

The Enterprise Service Repository was introduced as an extension of interoperability with Web services. It contains Web service interfaces to all SAP applications. These Web services are defined on a business semantics level—that is, they possess a granularity that corresponds to access in the realm of business processing (e.g. creating a customer order).

- **Business Process Management**

SAP NetWeaver PI enables the definition and control of complex business processes that require repeated communication between business partners.

As an additional function, SAP NetWeaver PI offers the administration of heterogeneous system environments (e.g. using the System Landscape Directory) and the management of the coexistence of various portals, whereby two portals are logically joined in order to combine content from an SAP NetWeaver portal and non-SAP portal technology.

SAP NetWeaver Business Warehouse (SAP NetWeaver BW) is a company-wide data warehouse that collects and stores data from a large variety of sources and makes it available in *InfoProvider* for the analysis of corporate performance data.

Nowadays, the integration of various source systems in a single enterprise data warehouse such as SAP NetWeaver BW poses one of the greatest challenges. Due to the sometimes extremely heterogeneous system environments, not only do various technical platforms need to be connected, but you also have to watch out for any divergent semantics of master and transaction data, in which case, by the way, it is wise to consolidate data in order to facilitate analysis. In addition, an enterprise data warehouse should provide flexible structures and layers, to enable quick response to new company developments that often occur as a result of alterations to business objectives, fusions and takeovers.

SAP NetWeaver BW covers these basic features and also offers a very high degree of performance, including the option of memory-managed data storage (via the Business Accelerator). Through integrated presentation tools (e.g. Business Explorer, BEx) and the evaluation and display functions of SAP BusinessObjects, SAP NetWeaver BW provides every user in an enterprise with an overview of required performance data precisely tailored to his or her purposes.

Employing SAP NetWeaver Business Warehouse presents several advantages:

- Less complexity, improved flexibility and very flexible data modeling
- The integration of large, complex and heterogeneous system environments with data integration across the entire enterprise
- Enables operational reporting with the aid of real-time data acquisition

SAP NetWeaver Master Data Management (SAP NetWeaver MDM) offers central master data processing within a complex integrated network. For this purpose, the software makes sure that important master data, such as business partner data or product master data, are only entered into the system once and then consistently distributed among all systems. This results in a high degree of data quality, as the data is not corrupted by duplicates or incorrect spelling. With SAP BusinessObjects tools, such as Data Services, Data Quality and Data Integrator, the laborious process of master data comparison and completion is made considerably easier. Typical master data errors that must be eliminated for an efficient and fault-free process include, for example:

- Spelling mistakes: *George Miller* instead of *George Miller*
- Missing data: Palo Alto without a ZIP code
- Incorrect format: telephone number without a hyphen, *1234567* instead of *123-4567*
- Incorrect codes: currency code *CAN* instead of *CDN* for Canadian dollars
- Duplication: double master data entries, *G. Smith* and *George Smith*

SAP NetWeaver Portal provides the user-based integration of all necessary information for the respective user in a single work environment (see Fig. 2.7).

It includes access to the business processes in the SAP environment necessary to the user as well as evaluations from the Business Warehouse, Internet access to business-related content, documents from Office applications and applications from third-party providers. Access to the various systems is ensured by a single sign-on logic (SSO), in which logging into the portal once suffices, and all subsequent sign-

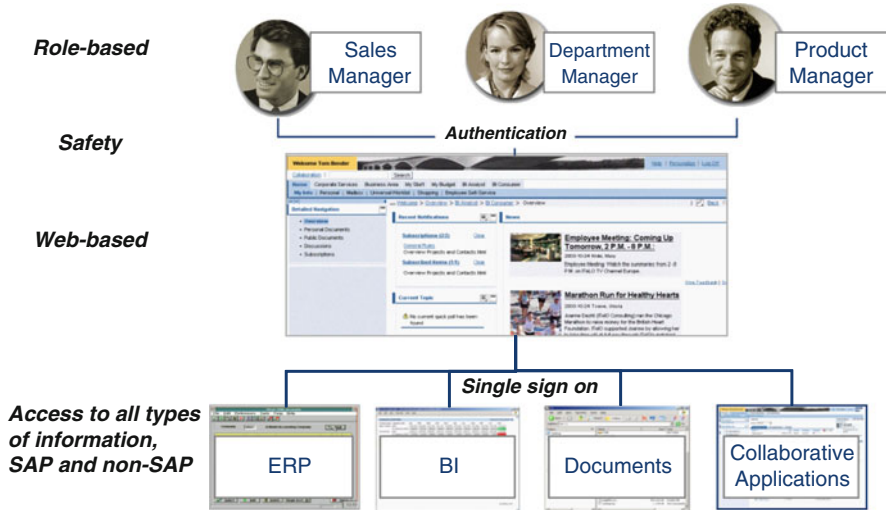


Fig. 2.7 SAP NetWeaver portal

ons are automatically authenticated via the portal. The roles defined in the portal ultimately determine which authorizations a user has in the individual systems.

SAP NetWeaver Enterprise Search—formerly known as TREX—is a cross-system search with a uniform user interface. It offers a search infrastructure necessary for universal searches and the respective data model, as well as central administration and operation functions. Many of the logistics elements mentioned in this book are already integrated into Enterprise Search, such as material, customer, sales order, supplier, delivery and order, such that you can search for these elements in a targeted manner using a free-text search.

2.4 Components of SAP Business Suite

SAP Business Suite is an arrangement of business applications based on SAP NetWeaver, designed to offer a comprehensive solution for all of a company's standardized business processes. It emerged a few years ago from the SAP R/3 system, which was released in 1992. SAP Business Suite expanded the R/3 system, having a monolithic architecture, with a series of self-contained products. Generally, complex business processes span several components of SAP Business Suite. Figure 2.8 presents an example for such a business process (make-to-order).

SAP ERP primarily consists of the components FI (Finance), CO (Controlling), MM (Materials Management), SD (Sales and Distribution), LES (Logistics Execution System), LO (Logistics), PP (Production Planning) and HCM (Human Capital Management). These components commonly form the core functionality utilized by SAP users.

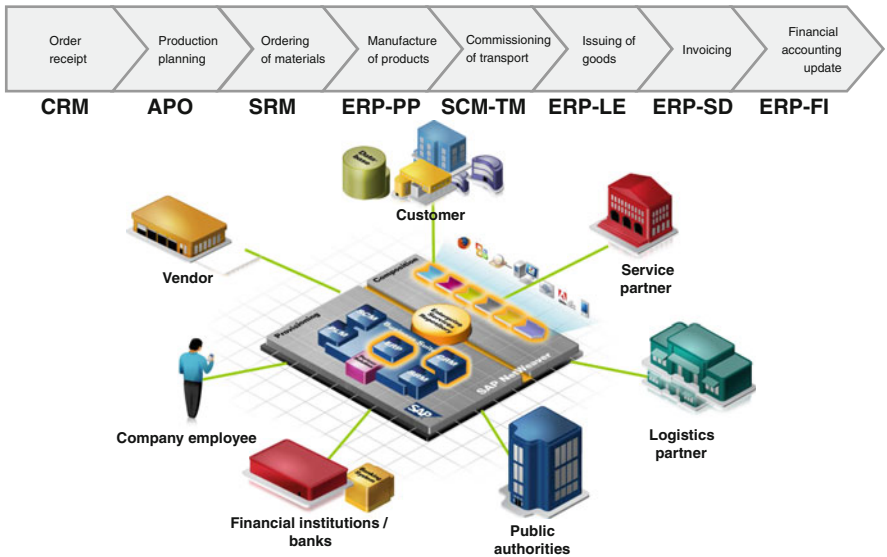


Fig. 2.8 Business process in SAP Business Suite

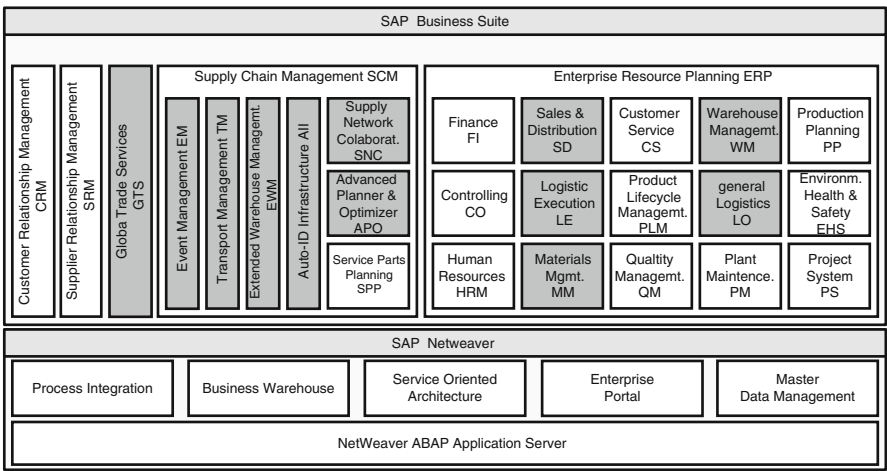


Fig. 2.9 Overview of the logistics (gray) and other components of SAP Business Suite

SAP ERP Central Component (SAP ECC)
The central components of ERP (FI, CO, MM, SD, LES, LO, PP and HCM) are also anchored in the SAP portfolio under the name SAP ERP Central Component (SAP ECC).

The core components within SAP ERP are complemented by further components such as SAP Environment, Health and Safety Management (SAP EHS Management) for the processing of dangerous goods.

SAP ERP has also been supplemented in the Business Suite with a number of components especially for the realms of Supply Chain Management (SAP SCM), Customer Relationship Management (SAP CRM) and Supplier Relationship Management (SAP SRM). There are also other components for special purposes, such as SAP BusinessObjects Governance, Risk and Compliance (GRC) solutions.

In Fig. 2.9, you can see an overview of the primary components of SAP Business Suite. Components that are explained in detail in this book are highlighted in gray.

2.4.1 Core Logistics Components in SAP ERP

As explained in the previous section, there are several components within SAP ERP that are directly or indirectly linked to logistics processes. These components, which are only briefly introduced here, are presented in more detail further on in the two volumes of this book.

The *Sales and Distribution components* (SD) include all functions having to do with the sale of goods or services in the broader sense (see also Chap. 6, “Distribution Logistics”). Among others, they include:

- Processing of offers and sales orders
- Availability check (determining the availability of goods for sale)
- Generation of a delivery schedule
- Credit and risk management in connection with the sales process (credit limit check)
- Conditions and pricing (determining the sales price)
- Invoicing, including payment card processing
- Foreign trade and customs processing
- Supplementary functions such as document printing, reports and analyses

General Logistics (LO) contains basic functions used repeatedly in several areas. These include:

- Batch handling, i.e. the processing of partial volumes, or batches, of a material, which are kept in stock separately from other batches of the same material (for example, a production lot)
- Handling unit management, i.e. the processing of transport containers
- Variant configuration, i.e. the description of complex products that can exist in several variations (such as cars)

The *shipping component* (Logistics Execution System, LES) primarily consists of all functions having to do with warehouse storage, shipping processing and the transport of goods (see also Chapter 6 and Volume II):

- Goods receipt process for delivered goods
- Central and decentral warehouse management (Warehouse Management, WM) with the optimization of procedures in the warehouse (Task and Resource Management) and the management of yards (Yard Management)
- Shipping preparation, shipping document generation and the goods-issue process for goods to be shipped out
- Transport preparation and processing, including freight charge calculation
- Delivery management for regular delivery routes from the distribution center to various customers (Direct Store Delivery).

Materials Management (MM) focuses on products that must be managed, procured or paid (see also Chap. 4 “Procurement Logistics”):

- Purchasing functions such as the processing of orders and order purchase requisitions
- Inventory management of materials, including materials evaluation for preparing the balance sheet and material price changes
- Invoice verification for received goods and service invoices
- Taking of inventory to determine and correct stock
- Material master data management

These four logistics components—SD, LO, LES and MM—are strongly integrated within SAP ERP and thus enable effective logistics workflow.

2.4.2 Other Logistics Components in SAP ERP

In addition to the central logistics components mentioned above, we would also like to present those components that have a somewhat more indirect connection to logistics. Further in this book, we will only discuss these components in passing:

- *Production Planning and Control* (Production Planning, PP) includes rough sales and production planning, actual production planning including capacity and requirements planning, production orders, kanban processing, make-to-stock production, make-to-order production and assembly processing. It also covers production planning for process industries.
- *Maintenance* (Enterprise Asset Management, EAM) deals with technical facilities and equipment (plant, machines, vehicles, etc.) that have to be maintained on a regular basis. It supports planned as well as unplanned maintenance and repair measures. Mobile scenarios with hand-held devices are also available.
- *Quality Management* (QM) includes functions for quality planning, testing and control, in addition to auditing management, the generation and maintenance of quality certificates and the maintenance of test equipment. In the process, you can manage inspection lots, record test results and errors, and perform sampling management tasks.

- *Product Lifecycle Management (PLM)* offers all functions necessary for product planning, design and its engineering tasks, product data distribution, the processing of product and recipe data and the respective audits.
- With the *Project System (PS)*, you can generate and administer projects. This component allows you to manage project flow with its task structures and scheduling, as well as project resources and costs.
- The components for the realm of *Environment, Health and Safety Management (SAP EHS Management)* provide a variety of functions within the context of safety. Not only are product safety and hazardous materials management and testing covered, but also waste management, job safety and industrial medicine.
- The components for *Customer Service (CS)* enable you to establish a customer interface with an interaction center for other ERP components (such as Sales and Distribution, Service, and Maintenance) in order to facilitate the execution of individual processes in cooperation with customer service representatives and customers themselves.
- *SAP for Retail* has a wide scope of retail-specific functions including, for instance, point of sale or direct store delivery. In many cases, the retail functions are tailored to a very high turnover, since that is where a large number of transactions in the sales and end-consumer area are carried out.

All of the components cited enable either an expansion of logistics processes into neighboring application areas or a branch-specific shaping of logistics processes.

2.4.3 SAP Supply Chain Management (SAP SCM)

SAP Supply Chain Management (SAP SCM) complements SAP ERP with important components offering planning-based as well as execution-based functions for logistics processes. The components mentioned only briefly here will be examined in more detail in a subsequent chapter:

- *SAP Extended Warehouse Management (SAP EWM)* is the functionally very extensive successor to the SAP ERP component *Warehouse Management (WM)*. It can be employed as a stand-alone system for complete warehouse management, including all contiguous processes (see also Volume II, Chapter 3, “Warehouse Logistics and Inventory Management”).
- *SAP Transportation Management (SAP TM)* offers complete transportation processing, from order acceptance, transportation planning and sub-contracting, to invoicing customers and service providers. It can be operated as a stand-alone system and was also conceived for use by logistics service providers (see also Volume II, Chapter 2, “Transport Logistics”).
- *SAP Event Management* is a tool with which processes can be tracked in several ways (such as transport tracking) and critical conditions in a process can be

actively determined and reported to users. SAP Event Management can be configured and used for all status management and tracking tasks (see also Volume II, Chapter 5, “Controlling and Reporting”).

- *SAP Auto-ID Infrastructure* (SAP AII) integrates RFID technology into business processes. It allows users to establish a bridge between RFID readers and business processes in the application (see also Volume II, Chapter 5).

Another important component is *SAP Advanced Planning & Optimization* (SAP APO). It offers a series of functional areas that focus on long- or medium-term as well as operative planning in an enterprise:

- *Supply Chain Monitoring* serves to monitor the logistics chain.
- *Supply Chain Collaboration* enables collaboration with suppliers and customers.
- *Demand Planning* (DP) allows medium-term planning of requirements based on a prognosis for demand of your company’s products on the market.
- *Supply Network Planning* (SNP) integrates the areas of Procurement, Production, Distribution and Transport. It thus enables tactical planning decisions and those pertaining to procurement sources based on a global model.
- *Global Availability Check (Available-to-Promise)* (Global Available-to-Promise, gATP) allows product-availability checks on a global basis. It also supports product substitutions and place-of-delivery substitutions (see also Volume II, Chapter 2).
- *Transportation Planning* (Transportation Planning and Vehicle Scheduling, TP/VS) enables optimal intermodal planning for incoming and outgoing deliveries. The actual transportation processing, however, takes place in ERP (see also Volume II, Chapter 2).

The optimization and planning functions of SAP APO can contribute greatly to improving efficiency, especially in larger companies with divided logistics.

2.4.4 SAP Customer Relationship Management (SAP CRM)

SAP Customer Relationship Management (SAP CRM) is a comprehensive solution to the management of your customer relationships. It supports all customer-oriented business divisions, from marketing to sales to service, and even customer interaction channels, such as the Interaction Center, the Internet and mobile clients.

2.4.5 SAP Supplier Relationship Management (SAP SRM)

SAP Supplier Relationship Management (SAP SRM) is a solution that enables the strategic planning and central control of relationships between a company and its suppliers. It allows very close connections between suppliers and the purchasing

process of a firm, with the goal of making the procurement processes simpler and more effective. SAP SRM supports processes such as ordering, source determination, the generation of invoices and credit memos, supplier qualification and Supplier Self-Services.

2.4.6 SAP BusinessObjects Global Trade Services

SAP BusinessObjects Global Trade Services is a subcomponent of *SAP BusinessObjects Governance, Risk and Compliance (GRC) Solutions*. With SAP BusinessObjects Global Trade Services, you can automate international trade processes and manage business partners and documents while making sure that your company is in observance of continually changing international laws. You will find details on this component in Volume II, Chapter 4, “Trade Formalities—Governance, Risk, Compliance”.

2.4.7 Other Non-logistics Components of SAP ERP

The following components are also part of SAP ERP and, for the sake of completeness, will only be briefly mentioned below:

- *Financing and Invoicing* (FI) includes G/L accounting, accounts payable, accounts receivable, bank accounting and assets accounting.
- *Cost Accounting* (Controlling, CO) provides components for general cost accounting, product cost accounting, and profitability and market segment analysis, among other topics.
- *Business Planning and Control* (Strategic Enterprise Management, SEM) supports such functions as business consolidation, business planning and simulation and profit center accounting.
- *Human Resources Management* (Human Capital Management, HCM) enables you to execute processes in the realms of human resources management, labor time management, payroll accounting, event management, personnel development and cost planning.

In many cases, these components serve as the financial backbone of the logistics process. For instance, FI and CO are frequently the first components implemented in an enterprise when the utilization of SAP logistics solutions is planned.

2.5 Summary

SAP Business Suite offers your enterprise a comprehensive and useful collection of business process components for the management of almost all business processes. SAP NetWeaver provides a favorable basis upon which to gain high flexibility with regard to hardware, databases, integration and user interaction.

The next chapter will introduce the organizational and master data that are employed in SAP logistics applications. From a technical standpoint, they form the data foundation of all logistics processes.

Logistic Core Operations with SAP

Procurement, Production and Distribution Logistics

Kappauf, J.; Lauterbach, B.; Koch, M.

2011, VIII, 264 p., Hardcover

ISBN: 978-3-642-18203-7