TOPIC 3

INTRODUCTION TO ENTERPRISE SYSTEMS

UNIVERSITAS INDONESIA

Veritas, Probitas, Justitia

FAKULTAS
ILMU KOMPUTER

SISTEM SISTEM PERUSAHAAN

CSIM602262

Learning Objectives

1. Student can explain the **role of enterprise systems** in supporting business processes.

2. Student can explain the **evolution and key business benefits** of enterprise systems.

3. Student can explain the **pros and cons of implementing an ERP system.**

4. Student can explain the **different categories of data** within SAP®ERP.

5. Student can explain **organizational structure** used in SAP ERP

3.1
THE EVOLUTION OF INFORMATION SYSTEMS

The Evolution of ERP

The ERP systems evolved as a result of three things:

(1) the advancement of the hardware and software technology (computing power, memory, and communications) needed to support the system,

(2) the development of a vision of integrated information systems, and

(3) the reengineering of companies to shift from a functional focus to a business-process focus.

Computer Hardware and Software Development

- Computer hardware and software developed rapidly in the 1960s and 1970s.

- The first practical business computers were the mainframe computers of the 1960s.

- Although these computers began to change the way business was conducted, they were not powerful enough to provide integrated, real-time data for business decision making.

- Over time, computers got faster, smaller, and cheaper—leading to today's proliferation of mobile devices.

- In the 1970s, relational database software was developed, providing businesses with the ability to store, retrieve, and analyze large volumes of data.

Early Attempts to Share Resources

- By the mid-1980s, telecommunications developments allowed users to share data and peripherals on local networks.

- Usually, these networks were groups of computers connected to one another within a single physical location.

- This central computer–local computer arrangement is now called a client-server architecture. Servers (central computers) became more powerful and less expensive and provided scalability.

- Scalability means that the capacity of a piece of equipment can be increased by adding new hardware.

Early Attempts to Share Resources (con't)

- By the end of the 1980s, much of the hardware and software needed to support the development of ERP systems was in place: fast computers, networked access, and advanced database technology (DBMS)

  – The software that holds that data in an organized fashion, and that allows for the easy retrieval of data, is the database management system (DBMS).

- The final element required for the development of ERP software was understanding and acceptance from the business community.

  – **Many businesspeople did not yet recognize the benefits of integrated information systems nor were they willing to commit the resources to develop ERP software.**

The Manufacturing Roots of ERP

- The concept of an integrated information system took shape on the factory floor.

- Manufacturing software advanced during the 1960s and 1970s, evolving from simple inventory-tracking systems to material requirements planning (MRP).

- MRP is a production-scheduling methodology that determines the timing and quantity of production runs and purchase-order releases to meet a master production schedule.

- MRP software allowed a plant manager to plan production and raw materials requirements by working backward from the sales forecast, the prediction of future sales.

The Manufacturing Roots of ERP (con't)

- The basic functions of MRP could be handled by mainframe computers; however, the advent of electronic data interchange (EDI).

  - the direct computer-to-computer exchange of standard business documents—allowed companies to handle the purchasing process electronically, avoiding the cost and delays resulting from paper purchase order and invoice systems.

Management's Impetus to Adopt ERP

- The hard economic times of the late 1980s and early 1990s caused many companies to downsize and reorganize.

- These company overhauls were one stimulus for ERP development.

- Companies needed to find some way to avoid the following kind of situation (which they had tolerated for a long time).

  - Inefficient decision making related to production planning, results on over-production or under-production of products, which finally impacts on higher operational expense, unhappy customers, and company's profit
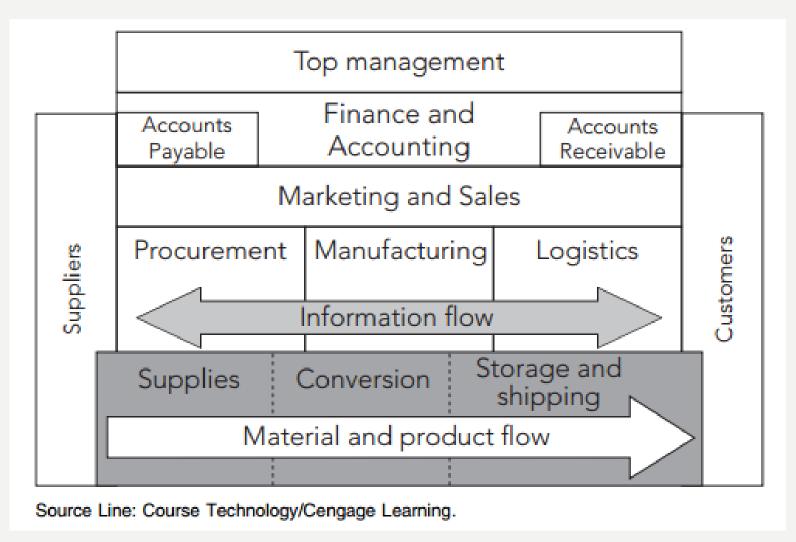
Management's Impetus to Adopt ERP (con')

- Eventually, the management of large companies decided they could no longer afford the type of inefficiencies caused by the functional model of business organization.

- The functional business model illustrates the concept of silos of information, which limit the exchange of information between the lower operating levels.

  - Instead, the exchange of information between operating groups is handled by top management, which might not be knowledgeable about an individual functional area.
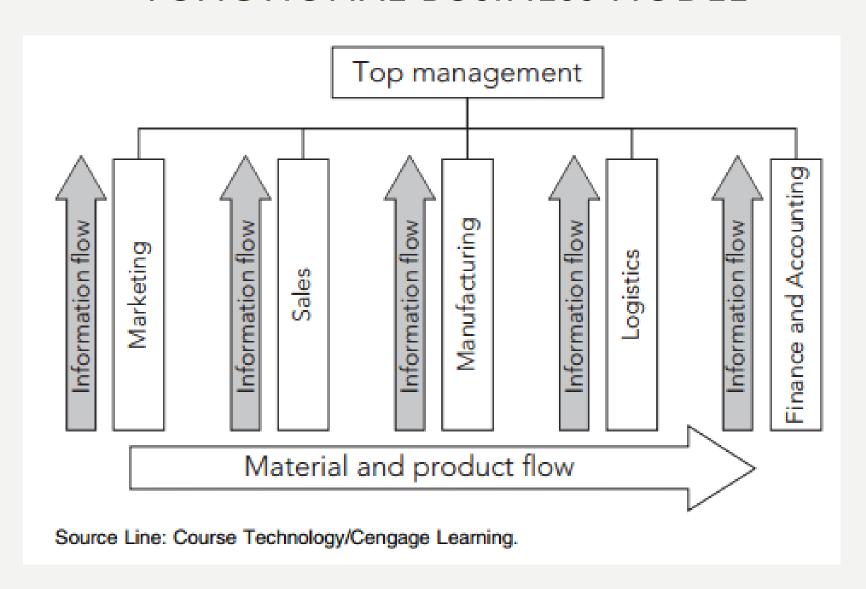
Management's Impetus to Adopt ERP (con')

- The functional model was very useful for decades, and it was successful in the company where there was limited competition and where flexibility and rapid decision making were not requirements for success.

- In a process-oriented company, the flow of information and management activity is "horizontal" across functions, in line with the flow of materials and products.

  – In this organizational model, the functional business model, with its separate silos of information, is gone. Now information flows between the operating groups without top management's involvement.

INFORMATION AND MATERIAL FLOWS IN A PROCESS-ORIENTED BUSINESS MODEL

Source Line: Course Technology/Cengage Learning.

INFORMATION AND MATERIAL FLOWS IN A FUNCTIONAL BUSINESS MODEL
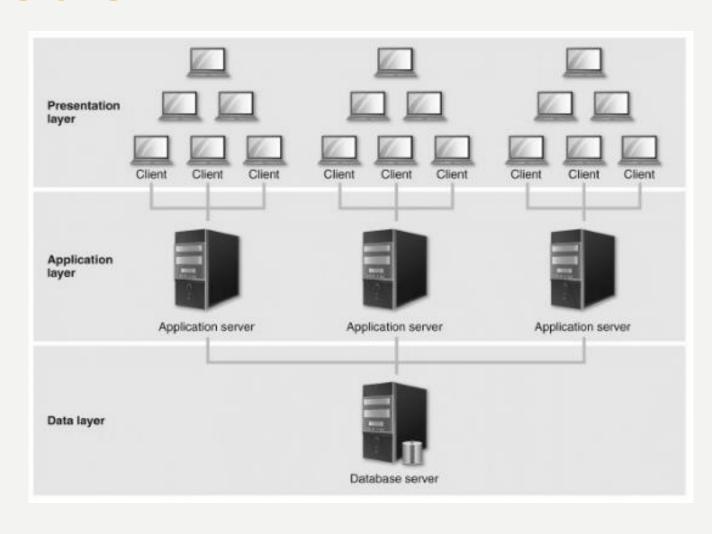

Source Line: Course Technology/Cengage Learning.

The Evolution of ERP (in Summary)

❖ In the 1960s: most software packages included inventory capability (inventory tracking systems)

❖ In the 1970s: MRP (Materials Requirements Planning) system used a master production schedule and a bill of materials file with the list of materials needed to produce each item

❖ In the 1980s: MRPII systems incorporated the financial accounting systems along with manufacturing and materials management systems

❖ By the 1990s: ERP systems provided seamless integration of all information flows in the company – financial accounting, human resource, supply chain management and customer information

Architecture of Enterprise System

- The architecture of an ES refers to the technical structure of the software, the ways that users interact with the software, and the ways the software is physically managed on computer hardware
  - Client-server
  - Service-oriented

Layer of the Three-tier Client-server Architecture

Client-server

- Internet uses a three-tier architecture

- Advantages:

  - Reduced costs

  - Scalability

- Scalability refers to the ability of software and hardware to support a greater number of users over time

Service-oriented Architecture

- **Web services**
  - Used to expose ES (and other system) functionality
  - Standard interface – input and output
- **Composite applications**
  - Connect multiple applications via Web services (including mashups or composite applications)
  - Build new capabilities without changing the underlying applications
- **Main advantages:**
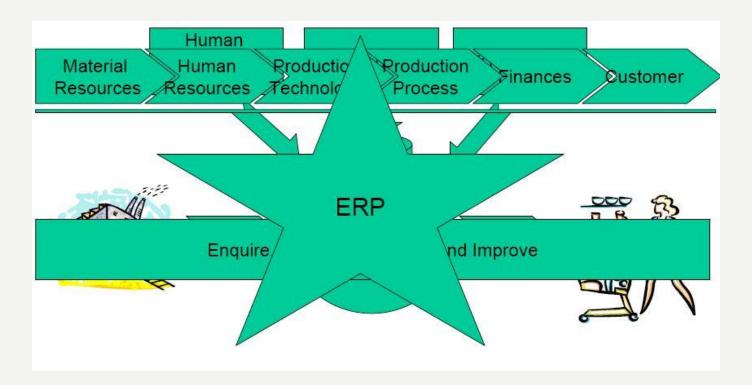 - Standardization is easy
  - Lower costs & complexity of integration
  - Reuse
  - Flexibility

3.2
THE EMERGENCE OF ERP SOFTWARE

What is ERP Systems?

- The software tools used to manage enterprise data
- A packaged business software system to
  - automate and integrate the majority of business processes
  - share common data and practices
  - produce and access information in a real-time environment
- ERP systems focus primarily on intra-company processes— that is, the operations that are performed within an organization—and they integrate functional and cross-functional business processes.
  - Typical ERP systems support Operations (Production), Human Resources, Finance & Accounting, Sales & Distribution, and Procurement.

➡ **An ERP system introduces "best practices" which are defined as "simply the best way to perform a process"**

ERP as Integrated System

- The goal is to provide **quick and effective access to information**
- From stand alone systems to **integrated system** to support business processes
- Common information model
- Standardized interfaces

ERP is Used in …

- Aerospace & Defense
- Automotive
- Banking
- Chemicals
- Consumer Products
- Defense & Security
- Engineering, Const.
- Healthcare
- High Tech
- Higher Education
- Industrial Machinery
- Insurance
- Life Sciences
- Logistics Service Prod
- Media
- Mill Products
- Mining
- Oil & Gas
- Pharmaceuticals
- Postal Services
- Professional Services
- Public Sector
- Railways
- Retail
- Telecommunications
- Utilities
- Wholesale Distribution

SAP ® R/3

- SAP was the first company to create a fully integrated and global ERP system, SAP® R/3, which could manage end-to-end processes for companies that operated in many different countries, with multiple languages and currencies.

- Although companies are moving toward a process view of organizations, and our book takes a process view of business operations, the functional view still persists in many organizations.

- The capabilities of an ERP system are often described in terms of modules or specific capabilities,

ERP Software Emerges: SAP and R/3

- 1972: five former IBM systems analysts in Mannheim, Germany formed *Systemanalyse und Programmentwicklung* (Systems, Applications and Products in Data Processing, or SAP)

- SAP ERP: Latest versions of ERP systems by SAP and other companies allow:
  - All business areas to access the same database
  - Elimination of redundant data and communications lags
  - Data to be entered once and then used throughout the organization

- SAP's goals:
  - Develop a standard software product that could be configured to meet the needs of each company
  - Data available in real time
  - Users working on computer screens, rather than with voluminous printed output
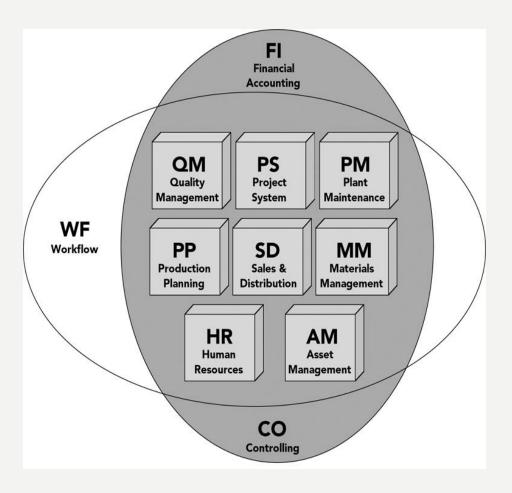
SAP ® R/3 Modules

- Production Planning (PP)
- Materials Management (MM)
- Sales and Distribution (SD)
- Plant Maintenance (PM)
- Project Systems (PS)
- Quality Management (QM)

- Financial Accounting (FI)
- Management Accounting / Controlling (CO)
- Human Resources (HR)
- Business Intelligence (BI)

SAP ERP

- SAP ECC 6.0 (Enterprise Central Component 6.0)
  - Sales and Distribution (SD)
  - Materials Management (MM)
  - Production Planning (PP)
  - Quality Management (QM)
  - Plant Maintenance (PM)
  - Asset Management (AM)
  - Human Resources (HR)
  - Project System (PS)
  - Financial Accounting (FI)
  - Controlling (CO)
  - Workflow (WF)

(Courtessy of SAP AG)

SAP ERP Modules [1]

- The Sales and Distribution (SD) module records sales orders and scheduled deliveries. Information about the customer (pricing, address and shipping instructions, billing details, and so on) is maintained and accessed from this module.

- The Materials Management (MM) module manages the acquisition of raw materials from suppliers (purchasing) and the subsequent handling of raw materials inventory, from storage to work-in-progress goods to shipping of finished goods to the customer.

- The Production Planning (PP) module maintains production information. Here production is planned and scheduled, and actual production activities are recorded.
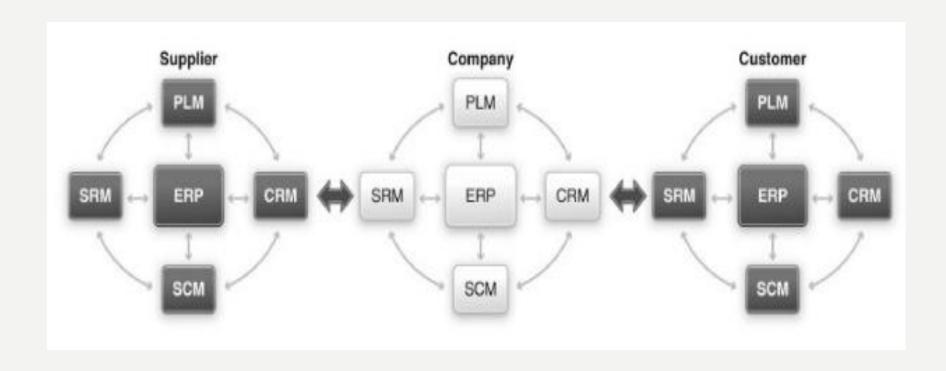
SAP ERP Modules [2]

- The Quality Management (QM) module plans and records quality control activities, such as product inspections and material certifications.

- The Plant Maintenance (PM) module manages maintenance resources and planning for preventive maintenance of plant machinery in order to minimize equipment breakdowns.

- The Asset Management (AM) module helps the company manage fixed-asset purchases (plant and machinery) and related depreciation.

- The Human Resources (HR) module facilitates employee recruiting, hiring, and training. This module also includes payroll and benefits.

SAP ERP Modules [3]

- The Project System (PS) module facilitates the planning for and control over new research and development (R&D), construction, and marketing projects. This module allows for costs to be collected against a project, and it is frequently used to manage the implementation of the SAP ERP system. PS manages build to-order items, which are low-volume, highly complex products such as ships and aircrafts.

The ES Architecture Suite
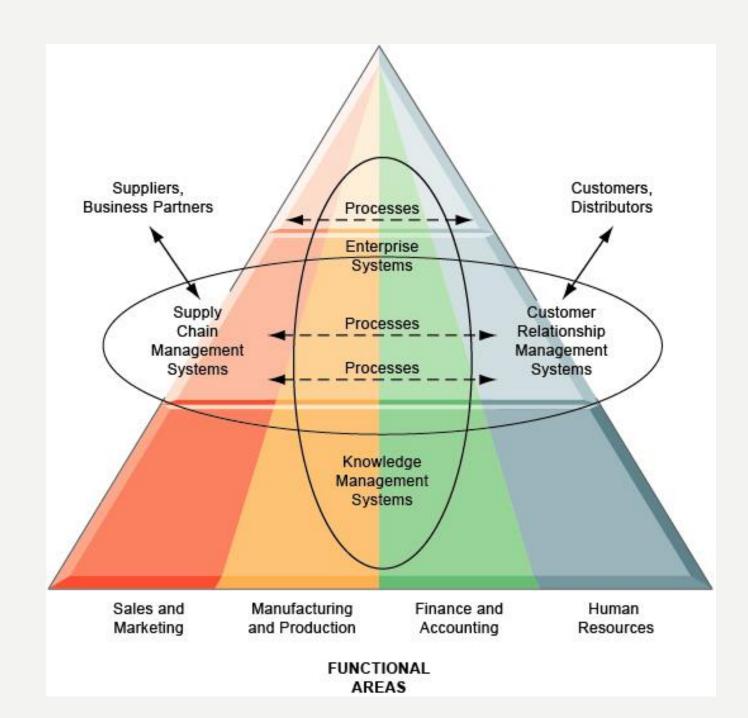
Enterprise Systems Application Suite

- **Collection of inter-company systems and intra-company ERP system is called an application suite.**

- It is important to note that one of the key benefits of utilizing a complete suite of software is that the data and processes are integrated among the systems in the suite.

- That is, although they are separate systems, they are designed so that they work together in an integrated manner.
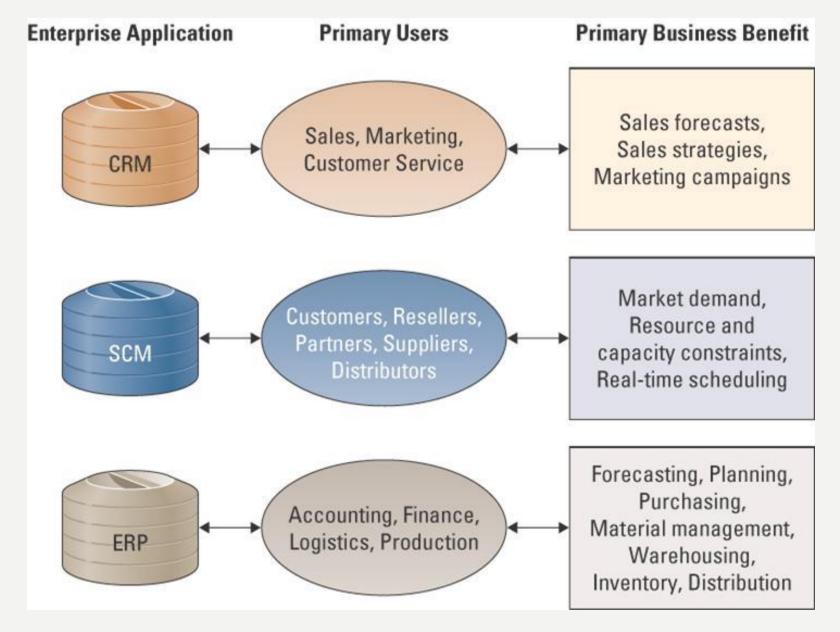
Enterprise Systems Application Suite

- Supply Chain Management (SCM) – manage production planning, transportation, logistics.

- Supplier Relationship Management (SRM) – manage quotation, contracts

- Product Lifecycle Management (PLM) – manage research, design, and product management

- Customer Relationship Management (CRM) – manage marketing, sales, service

Enterprise Application

Enterprise Application

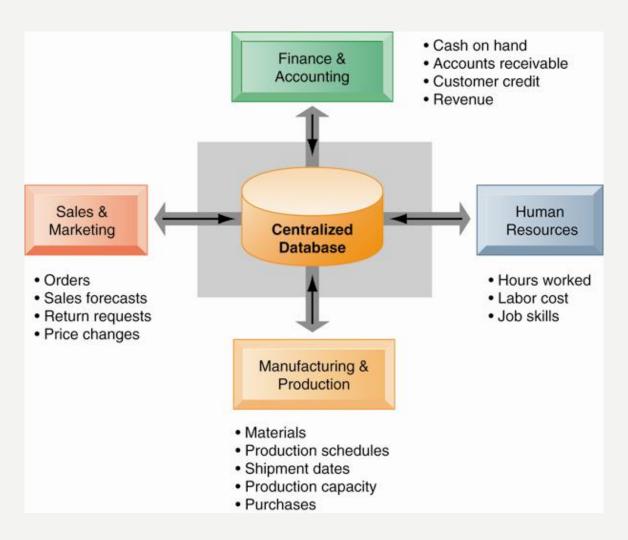| Enterprise Application	Primary Users	Primary Business Benefit
CRM	Sales, Marketing, Customer Service	Sales forecasts, Sales strategies, Marketing campaigns
SCM	Customers, Resellers, Partners, Suppliers, Distributors	Market demand, Resource and capacity constraints, Real-time scheduling
ERP	Accounting, Finance, Logistics, Production	Forecasting, Planning, Purchasing, Material management, Warehousing, Inventory, Distribution

How Enterprise Systems Work

Enterprise systems feature a set of integrated software modules and a central database that enables data to be shared by many different business processes and functional areas throughout the enterprise

3.3
ERP BENEFITS

Before and After ERP: Business Standpoint

Criteria	Before ERP	With ERP
Cycle time	Costly bottlenecks	Time and cost reduction of business processes
Transactions processing	Multiple transactions use multiple data files	Faster transactions, using common data. Reduces the time and cost of multiple updates
Financial management	Increased cost of excess inventory, cost of overdue accounts receivable	Improves operational performance (e.g. Less excess inventory, reduction in accounts receivable)
Business processes	Proliferation of fragmented processes with duplication of effort	Re-engineering around a business model that conforms with "best practices"
Productivity	Lack of responsiveness to customers and suppliers	Improvements in financial management and customer service
Supply chain management	Lack of integration	Linkages with suppliers and customers
E-business	Web-based interfaces support isolated systems and their components	Web-based interfaces are front-end to integrated systems
Information	Lack of tactical information for effective monitoring and control of organizational resources	Allows cross-functional access to the same data for planning and control. Provides widely available information
Communications	Lack of effective communications with customers and suppliers	Facilitates organizational communications with customers and suppliers

Before and After ERP: Business Standpoint

Criteria	Before ERP	With ERP
Information systems	Stand-alone systems	Integrated systems
Coordination	Lack of coordination among business functions (e.g. manufacturing and sales)	Supports coordination across business functions
Databases	Non-integrated data; data have different meanings (e.g. Customer); inconsistent data definition	Integrated data; data have the same meaning across multiple functions
Maintenance	Systems are maintained on a piecemeal basis; inconsistencies result; it's costly to maintain separate legacy systems	Uniform maintenance; changes affect multiple systems
Interfaces	Difficult to manage interfaces between systems	Common interfaces across systems
Information	Redundant; inconsistent information	Consistent real-time information (e.g. about customers, vendors)
System architecture	May not be state of the art	Relies on a client-server model
Processes	Incompatible processes	Consistent business processes which are based upon an information model
Applications	Disparate applications (e.g. many different purchasing systems)	Single applications (e.g. common purchasing system)

Business Benefits of ERP

ERP Performance Outcomes	Sweden Average*	U.S. Average*
Quickened information response time	3.81	3.51
Increased interaction across the enterprise	3.55	3.49
Improved order management/order cycle	3.37	3.25
Decreased financial close cycle	3.36	3.17
Improved interaction with customers	2.87	2.92
Improved on-time delivery	2.82	2.83
Improved interaction with suppliers	2.78	2.81
Reduced direct operating costs	2.74	2.32
Lowered inventory levels	2.60	2.70

*scale: 1 (not at all) to 5 (a great extent)
Sources: Mabert, Soni and Venkataramanan, 2000; Olhager and Selldin, 2003.

Tangible Benefits of ERP

Tangible Benefits	% of Companies
Inventory reduction	32
Personnel reduction	27
Productivity improvement	26
Order management improvement	20
Financial close cycle reduction	19
IT cost reduction	14
Procurement cost reduction	12
Cash management improvement	11
Revenue/profit increase	11
Transportation/logistics cost reduction	9
Maintenance reduction	7
Online delivery improvement	6

Source: Fryer, Bronwyn, "The ROI Challange", CFO, September 1999, p.90

Intangible Benefits with ERP

Intangible Benefits	% of Companies
Information/visibility	55
New/improved processes	24
Customer responsiveness	22
Integration	13
Standardization	12
Flexibility	9
Business performance	7
Supply/demand chain	5

Source: Fryer, Bronwyn, "The ROI Challange", CFO, September 1999, p.90

Company's Motivation to Implement ERP

Company's Motivation to Implement ERP	Swedish Average*	U.S. Average*
Replace legacy systems	4.11	4.00
Simplify and standardize systems	3.67	3.85
Gain strategic advantage	3.18	3.46
Improve interactions with suppliers, customers	3.16	3.55
Ease of upgrading systems	2.96	2.91
Link to global activities	2.85	3.17
Restructure company organization	2.70	2.58
Pressure to keep up with competitors	2.48	2.90

*scale: 1 (not at all) to 5 (a great extent)

ERP Design Alternatives

Option	Cost and Time	Advantages	Disadvantages
Vanilla ERP implementation	$150 million over 5 years	Complete standardization of business processes based upon vendor's "best practices"	Competitors have access to the same system Disruption of operations over 3-5 years
Partial ERP implementation (e.g. selected modules)	$108 million over 2-3 years	Partial changes in business processes	Disruption of operations over 2-3 years
In-house development	$240 million over 7-10 years	Custom-designed ERP system – unique from competitors	Long-term analysis and design process; high expenses
Status quo	No cost but no gain	No business process change; little disruption of operations	May provide a competitive disadvantage because competitors have an ERP system

ERP Implementation Approach

Implementation Approach	Swedish (%)	U.S. (%)
Single ERP package	55.6	39.8
Single ERP package with other systems	30.1	50
Multiple ERP packages with other systems	6.5	4.0
Best-of-breed from several ERP packages	3.9	3.9
Totally in-house developed	2.0	0.5
In-house plus specialized packages	2.0	1.0

ERP Modules Supported by Vendors

Function	SAP	Oracle	PeopleSoft
Sales order processing	Sales and Distributions (SD)	Marketing Sales Supply Chain	Supply Chain Management
Purchasing	Materials Management (MM)	Procurement	Supplier Relationship Management
Production Planning	Production Planning (PP)	Manufacturing	
Financial Accounting	Financial Accounting (FA)	Financials	Financial Management Systems
Management Accounting	Controlling (CO)		
Human Resources	Human Resources (HR)	Human Resources	Human Capital Management

Source: Vendor Websites

ERP Cost Components

ERP Cost Component	Swedish (%)	U.S. (%)
Software	24.2	30.2
Hardware	18.5	17.8
Consulting	30.1	24.1
Training	13.8	10.9
Implementation team	12.0	13.6

Another consideration is **Length of time required for implementation** (which causes disruption of business)

SAP ERP Software Implementation

- A truly integrated information system requires integrating all functional areas, but for various reasons, **not all companies that adopt SAP software use all of the SAP ERP modules.**

- When a company **uses modules from different vendors, additional software must be created to get the modules to work together.** Another approach is companies integrate different systems using **batch data transfer** processes that are performed periodically. In those cases, however, the company no longer has accurate data available in real time across the enterprise.

  - SAP's NetWeaver development platform eases the integration of SAP ERP with other software products.

SAP ERP Software Implementation

- There are countless examples of large implementations failing, and it is easy to understand why.

- Without top management commitment, large projects are doomed to fail.

- After a company chooses its major modules, it must make an incredible number of decisions on how to configure the system. These configuration options allow the company to customize the modules it has chosen to fit its needs.

  - For example, in the Financial Accounting (FI) module, a business might need to define limits on the dollar value of business transactions that certain employees can process.

SAP ERP Software Implementation

- SAP ERP's design incorporates best practices for a wide variety of processes.

- A best practice is the best, most efficient way of handling a certain business process.

- If a company's business practices do not follow one of the best practices incorporated in the SAP ERP design, then the business must redesign its practices so it can use the software.

- Although some customization is possible during implementation, many companies find they must still change some of the ways they work to fit the software.

Why Do Some Companies Have More Success with ERP Than Others?

- ERP just computerizes ineffective way of doing business, unless the company change its business process

- Some executives and IT managers don't take enough time for a proper analysis during the planning and implementation phase.

- Some executives and IT managers skimp on employee education and training.

- Some companies do not place the ownership or accountability for the implementation project on the personnel who will operate the system.

  – This lack of ownership can lead to a situation in which the implementation becomes an IT project rather than a company-wide project.

Why Do Some Companies Have More Success with ERP Than Others? (con't)

- Unless a large project such as an ERP installation is promoted from the top down, it is doomed to fail; top executives must be behind a project 100 percent if it is going to be successful.

- ERP implementation brings a tremendous amount of change for users of the system. Managers need to effectively manage that change in order to ensure a smooth implementation.

- A recent academic study attempting to identify the critical success factors of ERP implementations showed that a good project manager was critical and central to success of a project.

ERP Issues

- Use package ERP system or develop from scratch?
- The biggest mistake made in implementing ERP, especially in a manufacturing environment, **is to redesign the new system to work in the old environment** (Honig, 1999)

Should Every Business Buy an ERP Package?

- For a particular business, some of its operations—or certain segments of its operations—might not be a good match with the constraints inherent in ERP. Therefore, it is imperative for a business to analyze its own business strategy, organization, culture, and operation before choosing an ERP approach.

- A 1998 article in theHarvard Business Reviewprovides examples that show the value of planning before trying to implement an ERP system:

  - Applied Materials gave up on its system when it found itself overwhelmed by the organization changes involved.

  - Kmart in 2002 wrote off $130 million because of a failed ERP supply chain project. At the time, Kmart was not happy with its existing supply chain software, and it attempted to implement another product too quickly.

3.4 CATEGORIES OF DATA WITHIN SAP ERP

Data in an Enterprise System

❖ **Three types of data**

- ▪ Organizational data (levels, elements)

- ▪ Master data

- ▪ Transaction data
  - • Associated with process steps

1. Organizational Data/Level/Element

❖ Defines the structure of the enterprise in terms of legal or business purposes. Examples include:

- Legal entities, plants, storage areas, sales organizations, profit centers, subsidiaries, factories, warehouses

❖ Client, Company, and Plant

❖ Data rarely changes (static data)

Organizational Level Data – Client

- ❖ Highest organizational level in SAP ERP
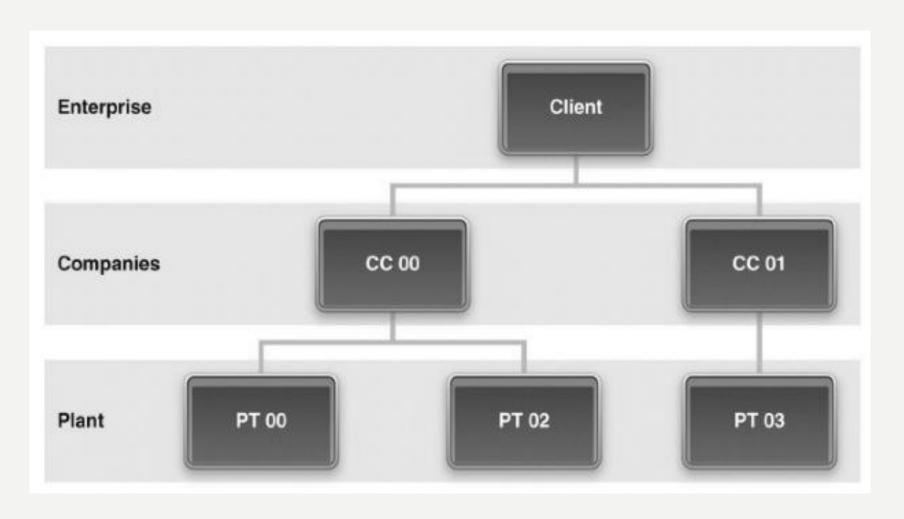- ❖ Represents the enterprise consisting of many companies or subsidiaries

Organizational Level Data - Company Code

❖ Each company within the enterprise is represented by a company code.

❖ Each company code represents a separate legal entity, and it is the central organizational element in financial accounting.

❖ That is, financial statements required for legal reporting purposes are maintained at the company code level.

❖ A client can have multiple company codes, but a company code must belong to only one client.

Organizational Level - Plant

❖ An organizational element that performs multiple functions and is relevant to several processes.

❖ Represents **factory, warehouse, office, distribution center, etc**.

❖ Following functions are typically performed:

- Products/services are created

- Materials are stored and used for distribution

- Production planning is carried out

- Service or maintenance is performed

Organizational Data

2. Master Data

- Master data represent entities associated with various processes.
  - For example, processes involve buying materials from vendors and selling materials to customers. In this example, customers, vendors, and materials are represented in an ERP system using master data.

- **Typically include**
  - General data (across company codes)
  - Financial data (company code specific)
  - Area-specific data (Sales, Purchasing, Plant)

Example of Material Master Data

- The most commonly used master data in an organization is the material master. Materials are used in numerous processes.

- They are purchased, sold, produced, and planned for.

- They are used in maintenance and service, and in projects.

- Consequently, material master data are some of the most complex and extensively utilized data in an ERP system.
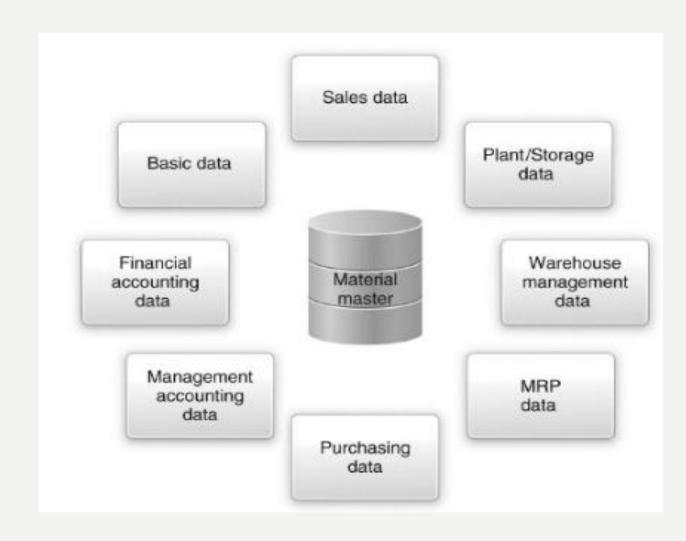
Material Master Data

- **Material master data is used in numerous processes**
  - Procurement – who and how much
  - Fulfilment – product availability and shipping conditions
  - Production
  - Material planning
  - Asset management
  - Project systems
  - Lifecycle data management

Material Master Data [2]

❖ Materials data may be grouped into *views* relevant to one or more processes

❖ Basic data (materials number, description, weight) are relevant to almost all processes

❖ Data are grouped based on

– Process

– Material type

– Organization element

❖ Material type can impact screens, department/function data to be maintained, material numbers, appropriate procurement, and general ledger accounts

Material Master Data [3]

Material Types

- **Raw materials (ROH)**
  - Purchased, not sold, used in production
  - Purchasing- and production-related views
  - No sales-related view
- **Semi-finished goods (HALB)**
  - Produced using other materials (ROH, HALB)
  - Used in the production of other materials (HALB, FERT)
  - Not purchased or sold

Material Types [2]

- **Finished goods (FERT)**
  - Produced using other materials (ROH, HALB)
  - Sold to customers
  - No-purchase related view

- **Trading goods (HAWA)**
  - Purchased and resold without additional processing
  - Significantly, the company does not perform any additional processing of the material prior to reselling it.
  - Therefore, the material master for trading goods will include data related to purchasing and selling but not production.

Material Groups

- Materials with similar characteristics

- For example, materials used in production or in sales such as tires and tubes—which are raw materials—and wheel assemblies—which are semi finished goods—can be included in one material group called production.

- In retail, we may have categories such as footwear, clothing, beverages

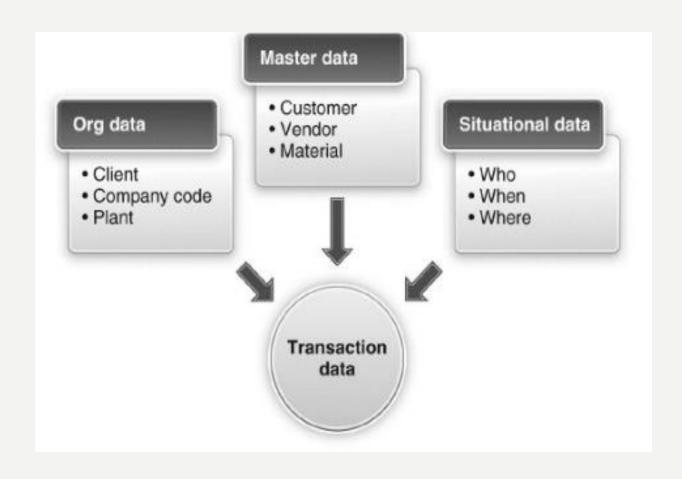- Materials are grouped so that they can be managed collectively (e.g., planning)

The use of material by different organizational levels

- Same material can be used differently by different organizational levels
  - Different company codes
    - HALB in one, FERT in another
  - Different plants
    - Only exports or imports in specified plants, not all
  - Different sales-related organizational elements
    - Wholesale vs. retail

3. Transaction Data

- Data generated during execution of process steps

- Requires

  – Organizational data

  – Master data

  – Situational data

    Who, what, when and where…..

- Example: Sales order creation

  – Organizational elements: Client, Company Code, Sales Area

  – Master Data: Customer, Material

  – Situational data: Date, Time, Person

Transaction Data
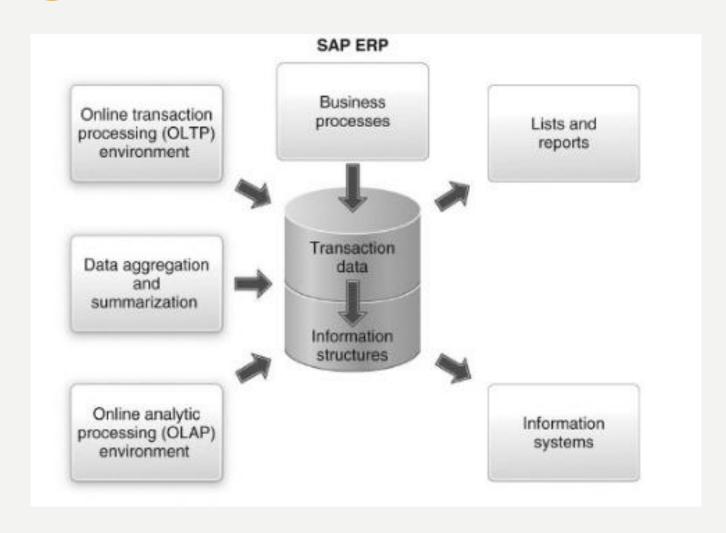
Documents

- Record of transactions
  - Transaction documents
    - Requisition, purchase order, invoice, delivery document, etc.
  - FI documents
    - Record the impact on financial accounting
  - CO documents
    - Record the impact on management accounting
  - Material documents
    - Record the impact on material status (value, location)

Reporting

- Transactional system (OLTP) vs. informational system (OLAP)
  - OLTP (transactional)
    - Detailed, transactional data
  - Data warehouse
    - Data aggregation and reduction using
      - Qualitative reduction by aggregating by time period
      - Quantitative reduction by selecting key figures (KPI)
      - In ERP: Information structures
      - In BW: Infocubes, info providers, etc.
  - OLAP (informational)
    - Various analysis tools
    - In ERP: Information systems (OLAP lite)
    - In BW: Various reporting tools

Reporting Options within SAP ERP

Components of Information Structures

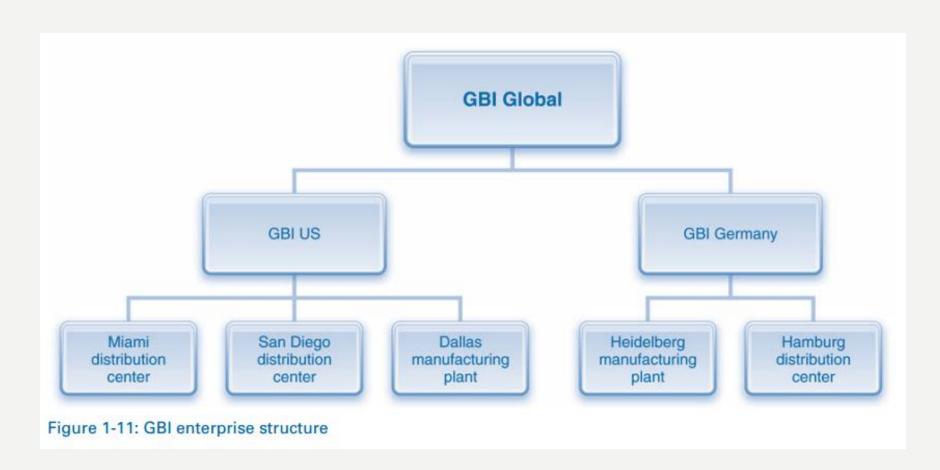| Period	Characteristic		Key figures	
Date	Customer	Material	Sales quantity	Sales amount
5/12/09	Rocky mountain bikes	DXTR8000	23	$64,400
5/19/09	Philly bikes	PRTR8000	45	$135,000
5/23/09	Beantown bikes	DXTR8000	34	$95,200
....	....	....	....	....

3.4
INTRO TO GBI ORGANIZATIONAL STRUCTURE

Global Bike Incorporated (GBI)

- GBI is a fictional company, and its operations have been greatly simplified to make its business processes and its SAP ERP system easier for you to work with.

- GBI was founded in 2001 following the merger of two bicycle manufacturers, one based in the United Sates and the other in Germany.

- GBI has three lines of business: deluxe and professional touring bikes, men's and women's off-road bikes, and bike accessories.

- GBI sells its bikes to a network of specialized dealers throughout the world, and it procures its raw materials from a variety of suppliers globally.

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GBI Enterprise Structure

Figure 1-11: GBI enterprise structure

References

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