ERP, SCM, CRM

Pertemuan 11-12

Kemampuan Khusus:

Mahasiswa mampu menunjukkan bagaimana sistem informasi mampu meningkatkan kinerja organisasi (C3)

Materi :

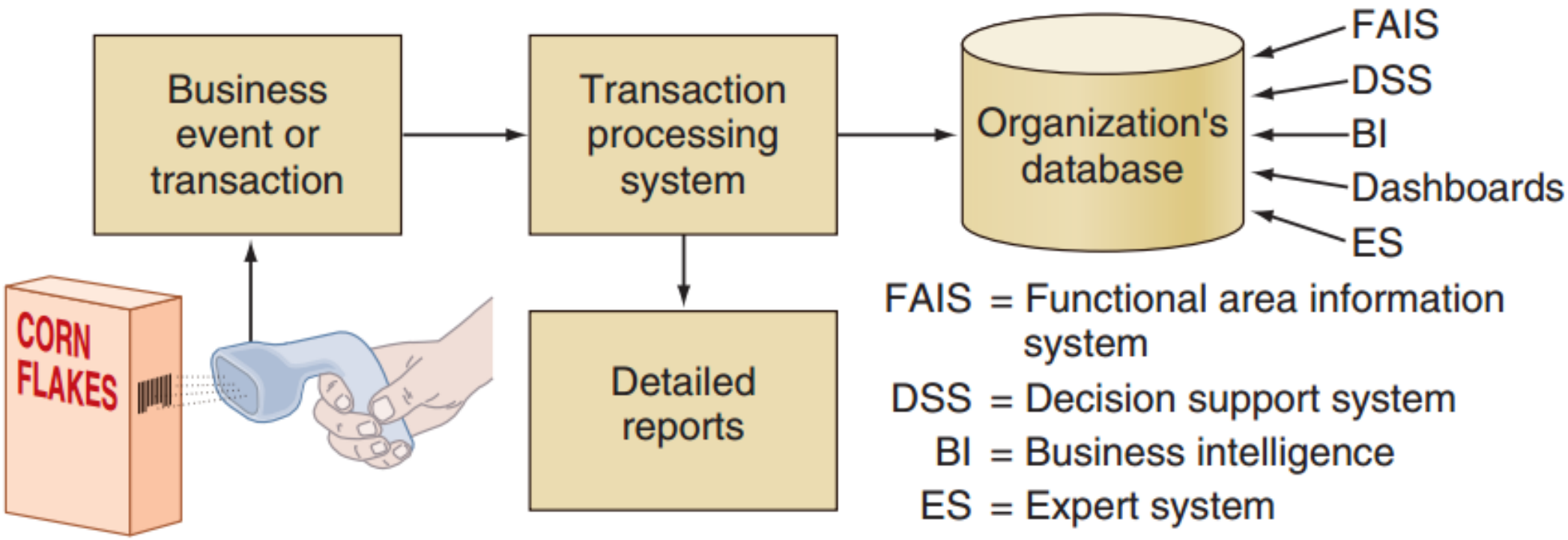
1. Transaction Processing Systems
2. Functional Area Information System
3. Enterprise Resource Planning (ERP) System
4. ERP Support for Business Processes
5. Defining customer Relationship management
5. Operational Customer Relationship Management Systems
6. Analytical Customer Relationship Management System
7. Supply Chains
8. Supply Chain Management
9. Information Technology Support for Supply Chain Management.

1. Transaction Processing Systems

1.1 Transaction Processing Systems

- A **transaction** is any business event that generates data worthy of being captured and stored in a database.
- Examples of transactions are a product manufactured, a service sold, a person hired, and a payroll check generated. In another example, when you are checking out of Walmart, each time the cashier swipes an item across the bar code reader is one transaction.
- A transaction processing system (TPS) supports the monitoring, collection, storage, and processing of data from the organization's basic business transactions, each of which generates data.
- The TPS collects data continuously, typically in real time—that is, as soon as the data are generated—and it provides the input data for the corporate databases.
- The TPSs are critical to the success of any enterprise because they support core operations.

1.2 How Transaction Processing Systems Manage Data



2. Functional Area Information System

2.1 Information System for Accounting and Finance

- primary mission of the accounting and finance functional areas is to manage money flows into, within, and out of organizations.
- This mission is very broad because money is involved in all organizational functions.
- accounting and finance information systems are very diverse and comprehensive.

2.2 Financial Planning and Budgeting

- **Financial and economic forecasting**: Knowledge about the availability and cost of money is a key ingredient for successful financial planning.
- **Budgeting**: An essential component of the accounting/finance function is the annual budget, which allocates the organization's financial resources among participants and activities.
- Budget allows management to distribute resources in the way that best supports the organization's mission and goals.

2.3 Managing Financial Transactions

- Many accounting/finance software packages are integrated with other functional areas.
- For example, Peachtree by Sage (www.peachtree.com) offers a sales ledger, a purchase ledger, a cash book, sales order processing, invoicing, stock control, a fixed assets register, and more.

- Organizations, business processes, and business activities operate with, and manage, financial transactions. Consider these examples:

1. Global Stock Exchanges
2. Managing multiple Currencies
3. Virtual Close
4. Expense Management Automation

2.4 Investment Management

- Managing these investments is a complex task, for several reasons such as:

1. Organizations have literally thousands of investment alternatives dispersed throughout the world to choose from.

- Investment decisions require managers to evaluate financial and economic reports provided by diverse institutions, including federal and state agencies, universities, research institutions, and financial services firms.
- To monitor, interpret, and analyze the huge amounts of online financial data, financial analysts use two major types of IT tools: (1) Internet search engines and (2) business intelligence and decision support software.

2.5 Control and Auditing

Most common forms of financial control:

1. **Budgetary Control** : After an organization has finalized its annual budget, it divides those monies into monthly allocations. Managers at various levels monitor departmental expenditures and compare them against the budget and the operational progress of corporate plans.
2. **Auditing**: Auditing has two basic purposes: (1) to monitor how the organization's monies are being spent and (2) to assess the organization's financial health. Internal auditing is performed by the organization's accounting/finance personnel.

2.5 Control and Auditing (Lanj)

3. Financial ratio analysis: to monitor the company's financial health by assessing a set of financial ratios. Included liquidity ratios (the availability of cash to pay debt), activity ratios (how quickly a firm converts noncash assets to cash assets), debt ratios (measure the firm's ability to repay long-term debt), and profitability ratios (measure the firm's use of its assets and control of its expenses to generate an acceptable rate of return).

2.6 Information System for Marketing

1. In-House Logistics & Materials Management

- Logistics management deals with ordering, purchasing, inbound logistics (receiving), and outbound logistics (shipping) activities.
- Related activities include inventory management and quality control.

2. Inventory Management

- inventory management determines how much inventory an organization should maintain. Both excessive inventory and insufficient inventory create problems. Overstocking can be expensive, because of storage costs and the costs of spoilage and obsolescence.

2.6 Information System for Marketing

3. Quality Control

- Quality control systems used by manufacturing units provide information about the quality of incoming material and parts, as well as the quality of in-process semi finished and finished
- These systems record the results of all inspections and then compare these results with established metrics. They also generate periodic reports that contain information about quality products.

4. Computer-Integrated Manufacturing

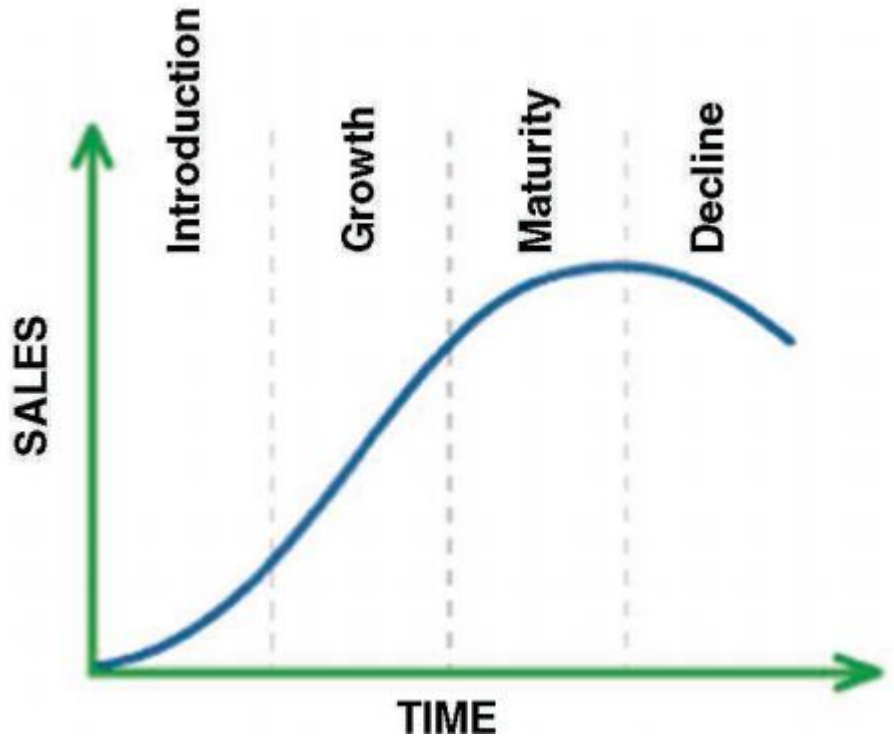
- Computer-integrated manufacturing (CIM) (also called digital manufacturing) is an approach that integrates various automated factory systems. CIM has three basic goals: (1) to simplify all manufacturing technologies and techniques, (2) to automate as many of the manufacturing processes as possible, and (3) to integrate and coordinate all aspects of design, manufacturing, and related functions via computer systems.

2.6 Information System for Marketing

5. Product Lifecycle Management

- Product lifecycle management (PLM) is a business strategy that enables manufacturers to share product-related data that support product design and development and supply chain operations.
- PLM applies Web-based collaborative technologies to product development

Figure Product Lifecycle



2.6 Information System for Human Resource Management

- Initial **human resource information system (HRIS)** applications dealt primarily with transaction processing systems, such as managing benefits and keeping records of vacation days.
- Organizations are using IT to perform some key HR functions: **recruitment, HR maintenance and development, and HR planning and management**.

1. Recruitment

- Recruitment involves finding potential employees, evaluating them, and deciding which ones to hire.
- In addition, IT can assist in related activities such as testing and screening job applicants.

2.6 Information System for Human Resource Management

2. Human Resources Development

- After employees are recruited, they become part of the corporate human resources pool, which means they must be evaluated and developed. IT provides support for these activities.
- IT also plays an important role in training and retraining. Some of the most innovative developments are taking place in the areas of intelligent computer-aided instruction and the application of multimedia support for instructional activities.

3. Human Resources Planning and Management.

IT support is particularly valuable in the following three areas:

- Payroll and employees' records
- Benefits administration
- Employee relationship management

3. ERP(Enterprise Resource Planning) Systems

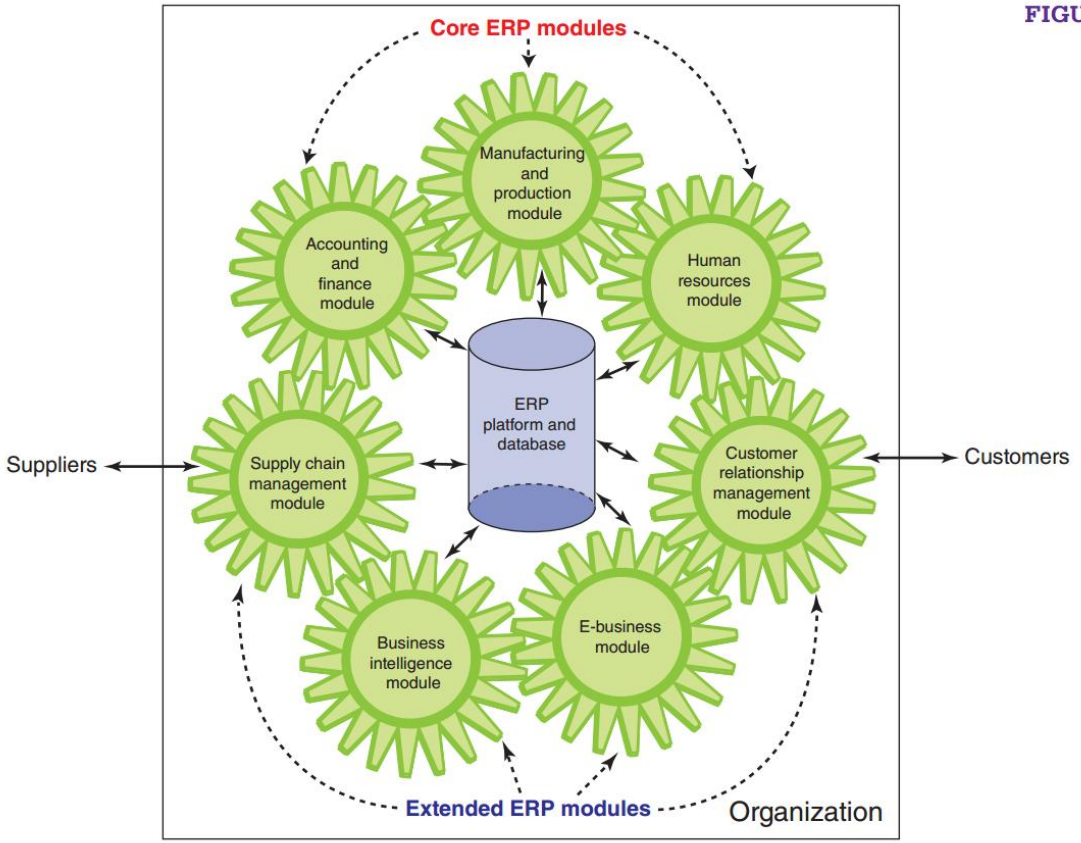
3.1 ERP

- Historically, the functional area information systems were developed independent of one another, resulting in ***Information Silos***. These silos did not communicate well with one another, and this lack of communication and integration made organizations less efficient.
- Enterprise resource planning (ERP) systems are designed to correct a lack of communication among the functional area IS. ERP systems resolve this problem by tightly integrating the functional area IS via a common database.
- ERP systems adopt a business process view of the overall organization to integrate the planning, management, and use of all of an organization's resources, employing a common software platform and database.

3.2 ERP II System

- ERP systems were originally deployed to facilitate business processes associated with manufacturing, such as raw materials management, inventory control, order entry, and distribution.
- ERP II systems are interorganizational ERP systems that provide Web-enabled links among a company's key business systems—such as inventory and production—and its customers suppliers, distributors, and other relevant parties.

3.2 ERP II System (Lanj)



FIGURI

- The various functions of ERP II systems are now delivered as e-business suites. The major ERP vendors have developed modular, Web-enabled software suites that integrate ERP, customer relationship management, supply chain management, procurement, decision support, enterprise portals, and other business applications and functions.

3.3 Benefits and Limitations of ERP

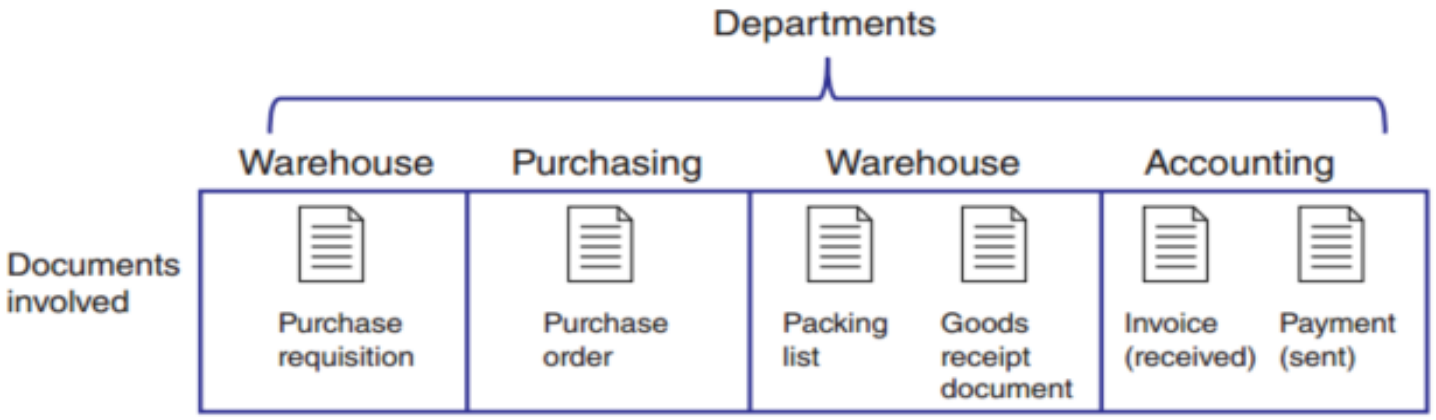
- Organizational Flexibility and agility
- Decision Support
- Quality and Efficiency
- Failure to involve affected employees in the planning and development phases and in change management processes

- Trying to accomplish too much too fast in the conversion process
- Insufficient training in the new work task required by the ERP system
- The Failure to perform proper data conversion and testing for the new system

4. ERP Support for Business Processes

4.1 Procurement Process

- The procurement process originates when a company needs to acquire goods or services from external sources, and it concludes when the company receives and pays for them.
- This process involves three main departments—Warehouse, Purchasing, and Accounting.

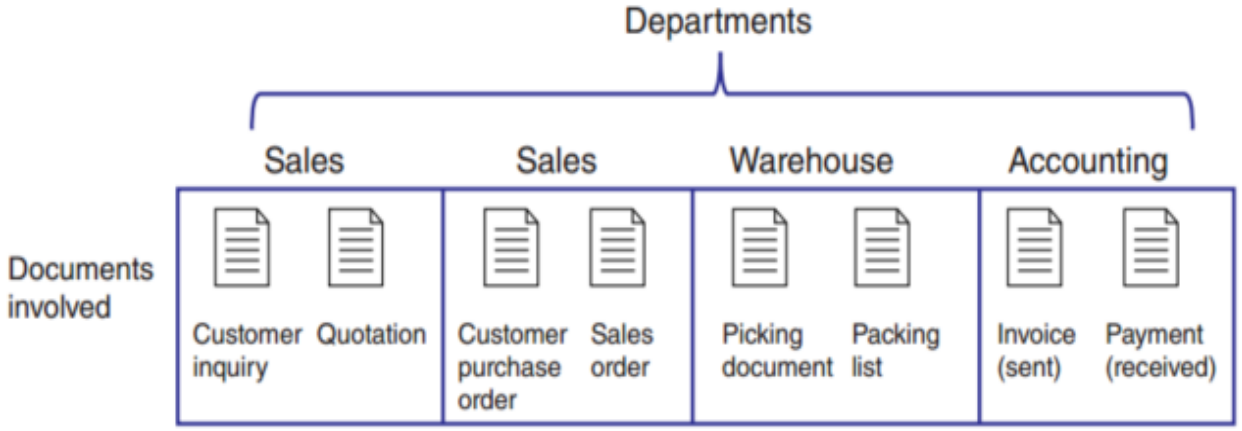


4.2 The Order Fulfillment Process

- In contrast to procurement, in which the company purchases goods from a vendor, in the order fulfillment process, also known as the order-to-cash process, the company sells goods to a customer.
- The fulfillment process can follow two basic strategies: sell-from-stock and configure-toorder.

4.2 The Order Fulfillment Process

- Sell-from-stock involves fulfilling customer orders directly using goods that are in the warehouse (stock).
- These goods are standard, meaning that the company does not customize them for buyers.
- configure-to-order, the company customizes the product in response to a customer request.

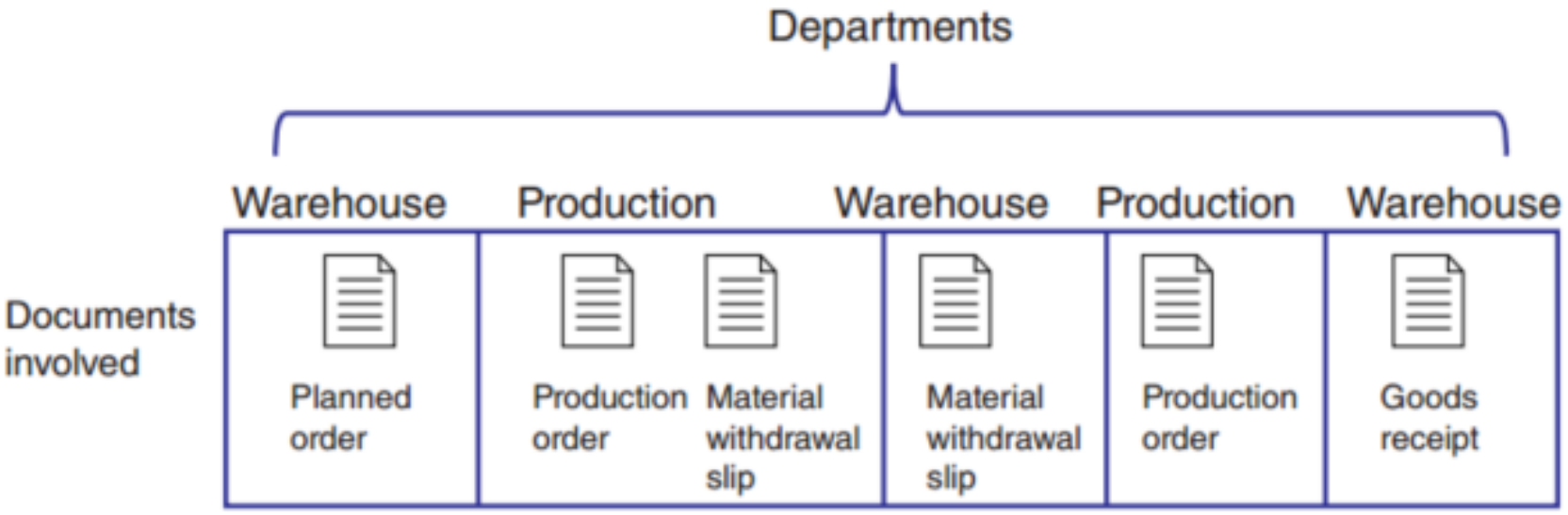


4.3 The Production Process

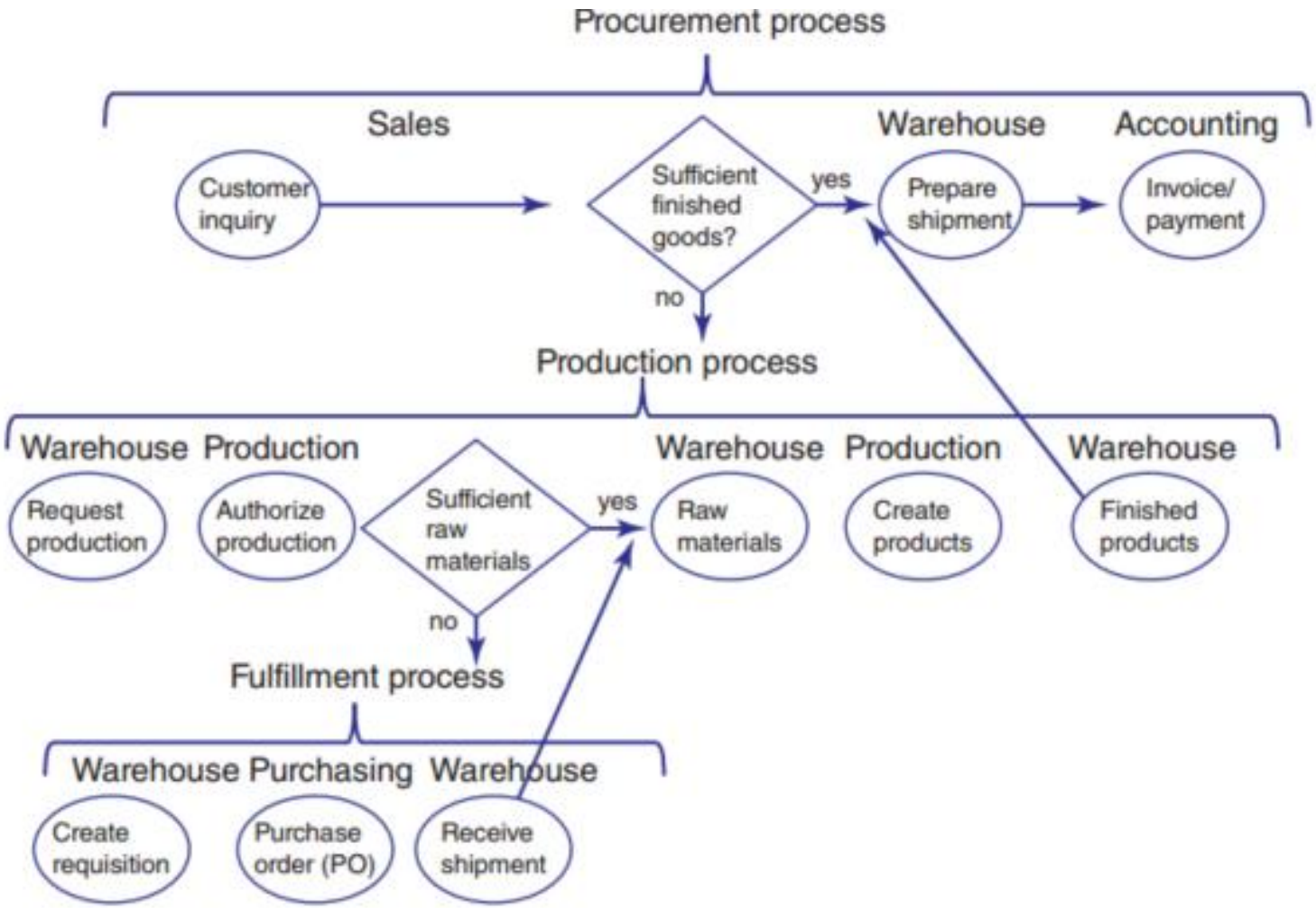
- The production process does not occur in all companies because not all companies produce physical goods. In fact, many businesses limit their activities to buying (procurement) and selling products (e.g., retailers).
- The production process can follow two different strategies: make-to-stock and make-to-order.
- **Make-to-stock** occurs when the company produces goods to create or increase an inventory; that is, finished products that are stored in the warehouse and are available for sales.
- **Make-to-order** occurs when production is generated by a specific customer order

4.3 The Production Process

- Manufacturing companies that produce their own goods manage their interdepartmental production process across the Production and Warehouse departments.



4.4 Integrated Processes with ERP Systems

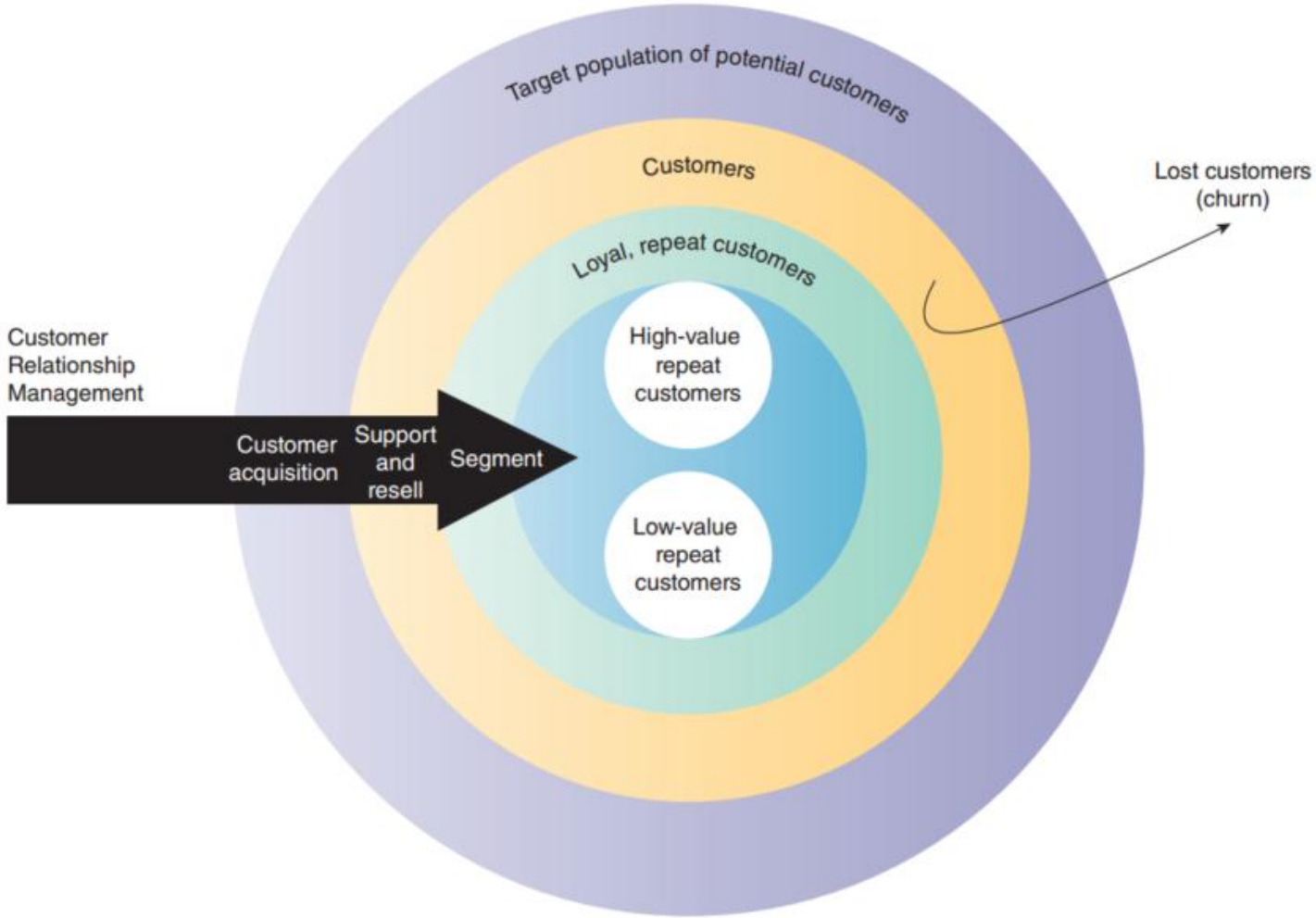


5. Defining Customer Relationship Management

5.1 CRM

- Customer relationship management returns to personal marketing. That is, rather than market to a mass of people or companies, businesses market to each customer individually.
- CRM approach is designed to achieve ***customer intimacy.***
- The CRM approach is enabled by information technology in the form of various systems and applications.
- Modern CRM strategies and systems build sustainable long-term customer relationships that create value for the company as well as for the customer.
- CRM helps companies acquire new customers and to retain and expand their relationships with profitable existing customers.

5.2 CRM Process



5.3 CRM and Supply Chain Management

6. Operational CRM System

6.1 Customer-Facing Applications

- In customer-facing CRM applications, an organization's sales, field service, and customer interaction center representatives interact directly with customers. These applications include customer service and support, sales force automation, marketing, and campaign management.

6.1 Customer-Facing Applications (Lanj)

Customer Service and Support

- Customer service and support refers to systems that automate service requests, complaints, product returns, and requests for information.
- Today, organizations have implemented customer interaction centers (CIC), where organizational representatives use multiple channels such as the Web, telephone, fax, and face-to-face interactions to communicate with customers. The CIC manages several different types of customer interaction.

Sales Force Automation

- Sales force automation (SFA) is the component of an operational CRM system that automatically records all of the components in a sales transaction process.
- SFA systems include a contact management system, which tracks all communications between the company and the customer, the purpose of each communication, and any necessary follow-up. This system eliminates duplicated contacts and redundancy, which in turn reduces the risk of irritating customers.

6.2 Marketing

- **Cross-selling** is the marketing of additional related products to customers based on a previous purchase. This sales approach has been used very successfully by banks. For example, if you have a checking and savings account at your bank, then a bank officer will recommend other products for you, such as certificates of deposit (CDs) or other types of investments.
- **Upselling** is a strategy in which the salesperson provides customers with the opportunity to purchase related products or services of greater value in place of, or along with, the consumer's initial product or service selection.
- For example, if a customer goes into an electronics store to buy a new television, a salesperson may show him a pricey 1080i HD LED television placed next to a less expensive LCD television in the hope of selling the more expensive set
- **Bundling** is a form of cross-selling in which a business sells a group of products or services together at a lower price than their combined individual prices. For example, your cable company might bundle cable TV, broadband Internet access, and telephone service at a lower price than you would paid for each service separately

6.3 Campaign Management

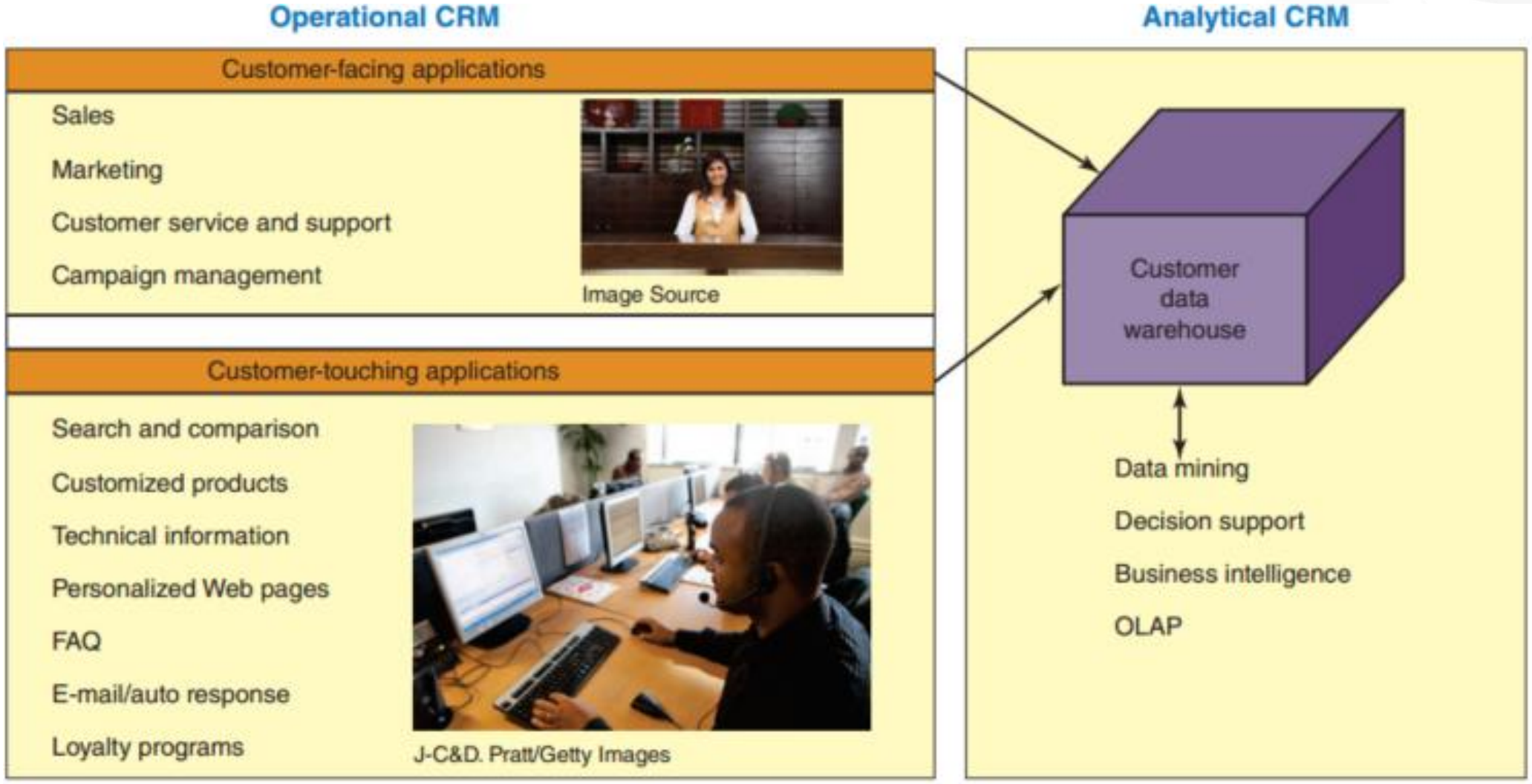
- Campaign management applications help organizations plan campaigns that send the right messages to the right people through the right channels.
- Organizations manage their campaigns very carefully to avoid targeting people who have opted out of receiving marketing communications.
- Furthermore, companies use these applications to personalize individual messages for each particular customer.

7. Analytical CRM Systems

7.1 Analytical CRM Systems

- Analytical CRM systems provide business intelligence by analyzing customer behavior and perceptions.
- For example, analytical CRM systems typically provide information concerning customer requests and transactions, as well as customer responses to the organization's marketing, sales, and service initiatives.
- These systems also create statistical models of customer behavior and the value of customer relationships over time, as well as forecasts about acquiring, retaining, and losing customers.

7.2 Relationship Between Operational CRM & Analytical CRM



8. Supply Chain

8.1 Supply Chain

- A supply chain is the flow of materials, information, money, and services from raw material suppliers, through factories and warehouses, to the end customers. A supply chain also includes the organizations and processes that create and deliver products, information, and services to the end customers.
- Supply chains enhance trust and collaboration among supply chain partners, thus improving supply chain visibility and inventory velocity.

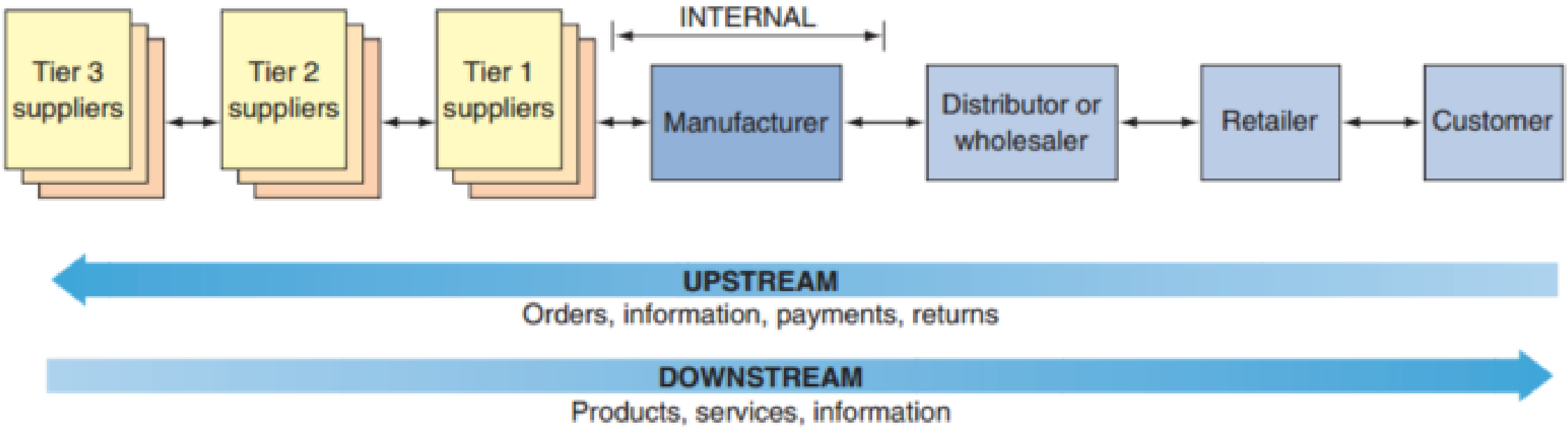
8.1 Supply Chain (Lanj)

- Supply chain visibility refers to the ability of all organizations within a supply chain to access or view relevant data on purchased materials as these materials move through their suppliers' production processes and transportation networks to their receiving docks
- Supply chains are a vital component of the overall strategies of many modern organizations. To utilize supply chains efficiently, a business must be tightly integrated with its suppliers, business partners, distributors, and customers.

8.2 3 Segments of Supply Chains

- *Upstream*, where sourcing or procurement from external suppliers occurs. In this segment, supply chain managers select suppliers to deliver the goods and services the company needs to produce its product or service.
- Internal, where packaging, assembly, or manufacturing takes place. SC managers schedule the activities necessary for production, testing, packaging, and preparing goods for delivery. In addition, they monitor quality levels, production output, and worker productivity.
- Downstream, where distribution takes place, frequently by external distributors

8.3 Generic Supply Chain



9. Supply Chain Management

9.1 Supply Chain Management

- **Supply chain management (SCM)** is to improve the processes a company uses to acquire the raw materials it needs to produce a product or service and then deliver that product or service to its customers.
- There are five basic components of SCM: **Plan, Source, Make, Deliver, Return.**

9.1 Supply Chain Management (Lanj)

Plan

- Planning is the strategic component of SCM.
- Organizations must have a strategy for managing all the resources that are involved in meeting customer demand for their product or service.
- Planning involves developing a set of metrics (measurable deliverables) to monitor the organization's supply chain to ensure that it is efficient and it delivers high quality and value to customers for the lowest cost.

Source

- In the sourcing component, organizations choose suppliers to deliver the goods and services they need to create their product or service.
- Supply chain managers develop pricing, delivery, and payment processes with suppliers, and they create metrics to monitor and improve their relationships with their suppliers.

9.1 Supply Chain Management (Lanj)

Make

- This is the manufacturing component.
- Supply chain managers schedule the activities necessary for production, testing, packaging, and preparation for delivery.
- This component is the most metric-intensive part of the supply chain, where organizations measure quality levels, production output, and worker productivity

Deliver

- This component, often referred to as logistics, is where organizations coordinate the receipt of customer orders, develop a network of warehouses, select carriers to transport their products to their customers, and create an invoicing system to receive payments.

9.2 Return

- Return: Supply chain managers must create a responsive and flexible network for receiving defective, returned, or excess products back from their customers, as well as for supporting customers who have problems with delivered products.

10. Information Technology Support for Supply Chain Management

10.1 Electronic Data Interchange (EDI)

- Electronic data interchange (EDI) is a communication standard that enables business partners to exchange routine documents, such as purchasing orders, electronically.
- EDI formats these documents according to agreed-upon standards (e.g., data formats). It then transmits messages over the Internet using a converter, called translator.

- Benefits:

1. Minimizes data entry error,
2. Length of message can be shorter and Secure
3. Reduces cycle time
4. Increases productivity
5. Enhances customer service
6. Minimizes paper usage and storage

10.1 Electronic Data Interchange (EDI)

Disadvantages

- Business processes sometimes must be restructured to fit EDI requirements
- Using several standards in order to communicate with multiple business partners

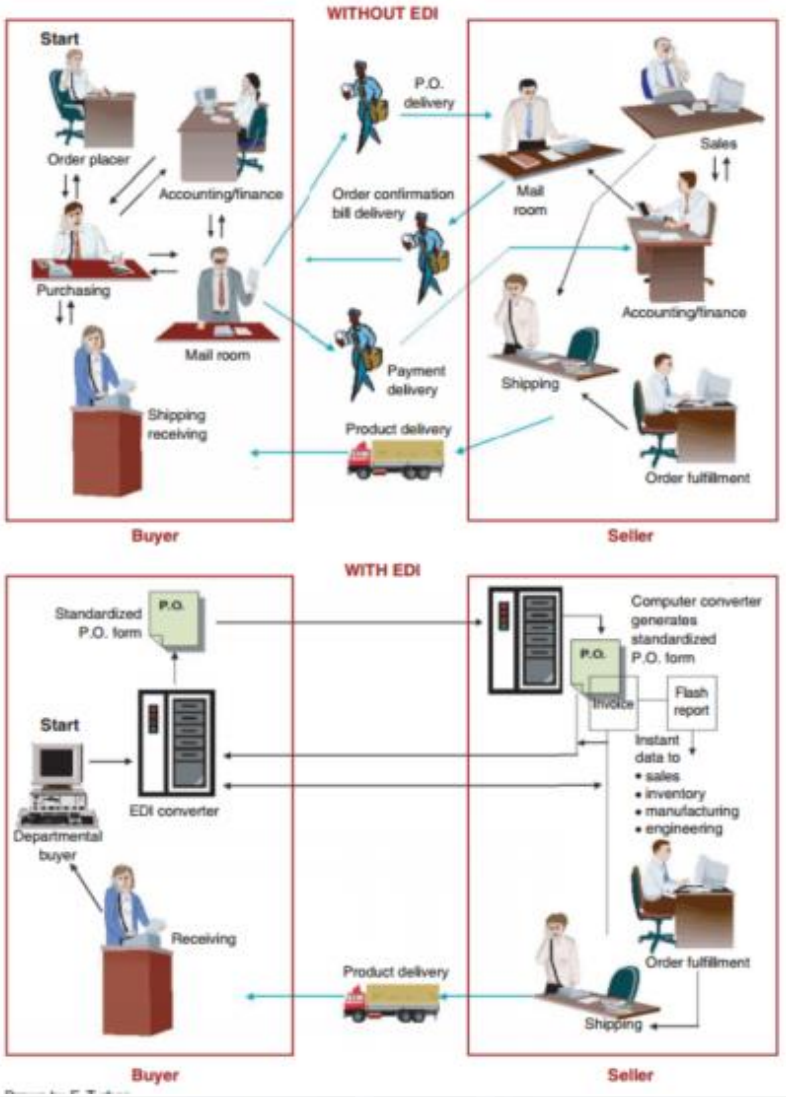
Today World!!

- Every business has a broadband connection to the Internet and where multi megabyte design files, product photographs, and PDF sales brochures are routinely e-mailed, the value of reducing a structured e-commerce message from a few thousand XML bytes to a few hundred EDI bytes is negligible. As a result, EDI is being replaced by XML-based Web services.

10.2 Extranets

- Extranets link business partners over the Internet by providing them access to certain areas of each other's corporate intranets.
- The primary goal of extranets is to foster collaboration between and among business partners. A business provides extranet access to selected B2B suppliers, customers, and other partners. These individuals access the extranet through the Internet.
- Extranets enable people located outside a company to collaborate with the company's internal employees. They also allow external business partners to enter the corporate intranet, via the Internet, to access data, place orders, check the status of those orders, communicate, and collaborate.

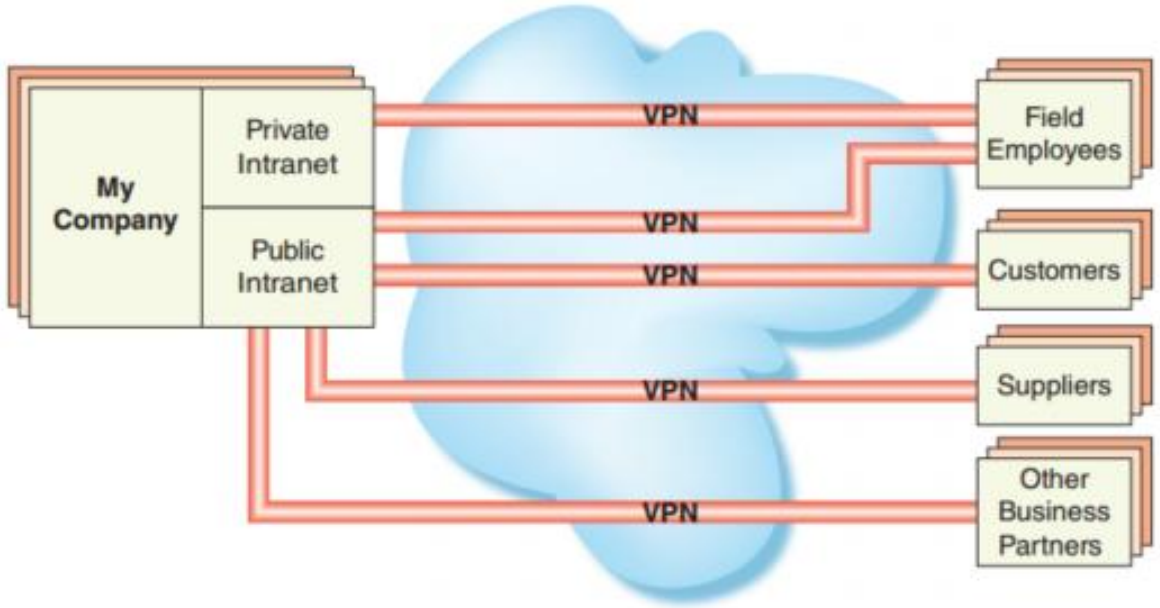
10.2 Extranets



10.2 Extranets (Lanj)

Structure of an extranet

- Extranets use virtual private network (VPN) technology to make communication over the Internet more secure.
- The major benefits of extranets are faster processes and information flow, improved order entry and customer service, lower costs



Summary

- Customer relationship management (CRM) is an organizational strategy that is customer focused and customer driven. That is, organizations concentrate on assessing customers' requirements for products and services and then on providing high-quality, responsive services.
- Operational CRM systems support the front-office business processes that interact directly with customers (i.e., sales, marketing, and service). The two major components of operational CRM systems are customer-facing applications and customer-touching applications.

Summary

- Electronic data interchange (EDI) is a communication standard that enables the electronic transfer of routine documents, such as purchasing orders, between business partners. Extranets are networks that link business partners over the Internet by providing them access to certain areas of each other's corporate intranets. The main goal of extranets is to foster collaboration among business partners.

Summary

- Enterprise resource planning (ERP) systems integrate the planning, management, and use of all of the organization's resources. The major objective of ERP systems is to tightly integrate the functional areas of the organization. This integration enables information to flow seamlessly across the various functional areas.