

Unit # 6 (Business Information Systems – II)

UNIT : 6 [Business Information Systems - I]

- Electronic Commerce and Electronic Business
- information Systems to support Business functions – Enterprise Resource Planning (ERP), Enterprise Information Portal (EIP), Customer Relationship Management (CRM), Supply Chain Management (SCM)
- Decision Support Systems (DSS), Group DSS, Executive Support in Enterprise

E-commerce

- ◆ *Electronic commerce*, commonly known as *e-commerce*, *eCommerce* or *e-comm*, refers to the buying and selling of products or services over electronic systems such as the Internet and other computer networks.
- ◆ However, the term may refer to more than just buying and selling products online. For example, Online purchase of goods or services by credit cards or PayPal .
- ◆ It also includes the entire online process of developing, marketing, selling, delivering, servicing and paying for products and services.

E-commerce

- ◆ Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction's life-cycle, although it may encompass a wider range of technologies such as e-mail, mobile devices and telephones as well.

E-commerce Types

- ◆ E-commerce types represent a range of various schemas of transactions which are distinguished according to their participants.

Business-to-Business (B2B)

Business-to-Consumer (B2C)

Business-to-Employee (B2E)

Business-to-Government (B2G)

Government-to-Business (G2B)

Government-to-Government (G2G)

Government-to-Citizen (G2C)

Consumer-to-Consumer (C2C)

Consumer-to-Business (C2B)

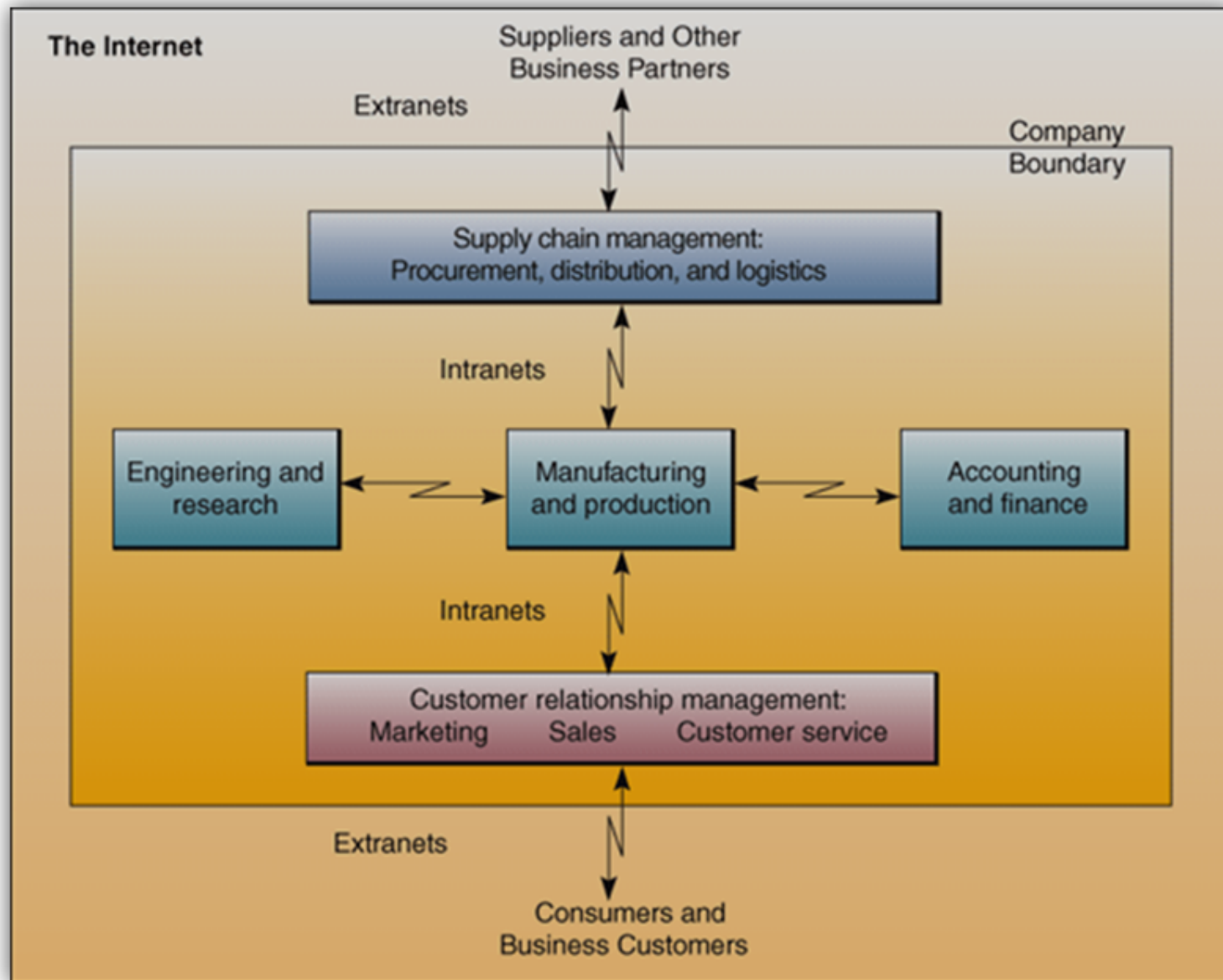
E-business

- ◆ The application of *Information and Communication Technologies* (ICT) in support of all the activities of business.
- ◆ *E-business* refers to a broader definition of e-commerce, not just the buying and selling of goods and services, but also servicing customers, collaborating with business partners, conducting e-learning, and processing electronic transactions.
- ◆ In practice, e-business is more than just e-commerce.
- ◆ While e-business refers to more strategic focus with an emphasis on the functions that occur using electronic capabilities, e-commerce is a subset of an overall e-business strategy.

E-business

- ◆ E-business involves business processes spanning the entire value chain : electronic purchasing and supply chain management, processing orders electronically, handling customer service, and cooperating with business partners.
- ◆ E-business software solutions allow the integration of intra and inter firm business processes.

An E-business Enterprise



The E-Business Enterprise

- ◆ Businesses are becoming E-Business enterprises.
- ◆ The Internet and Internet-like networks - inside the enterprise (intranets), and between an enterprise and its trading partners (extranets) - have become the primary information technology infrastructure that supports the business operations of many companies.
- ◆ E-Business enterprises rely on such technologies to
 - *reengineer and revitalize internal business processes*
 - *implement electronic commerce systems among businesses and their customer suppliers and*
 - *promote enterprise collaboration among businesses teams and workgroups*

The E-Business Enterprise

- ◆ E-Business enterprise depends on the Internet, intranets and other information technologies to implement and manage E-Business operations and electronic commerce and collaboration.
- ◆ Enterprise collaboration systems involve the use of groupware tools to support communication, coordination and collaboration among the members of networked teams and workgroups.

Functional Areas of ISs

| Functional Area | Information Systems | Examples of typical systems |
|---------------------------|--|---|
| Accounting and Finance | Systems used for managing, controlling, and auditing the financial resources of the organization. | <ul style="list-style-type: none"> • Inventory management • Accounts payable • Expense accounts • Cash management • Payroll processing |
| Human Resource | Systems used for managing, controlling, and auditing the human resources of the organization. | <ul style="list-style-type: none"> • Recruiting and hiring • Education and training • Benefits management • Employee termination • Workforce planning |
| Marketing | Systems used for managing new product development, distribution, pricing, promotional effectiveness, and sales forecasting of the products and services offered by the organization. | <ul style="list-style-type: none"> • Market research and analysis • New product development • Promotion and advertising • Pricing and sales analysis • Product location analysis |
| Production and Operations | Systems used for managing, controlling, and auditing the production and operations resources of the organization. | <ul style="list-style-type: none"> • Inventory management • Cost and quality tracking • Materials and resource planning • Customer service tracking • Customer problem tracking • Job costing • Resource utilization |

Sales and Marketing Information System

- ◆ Responsible for selling the organization's product or service.
- ◆ Marketing is concerned with identifying the customers for the firm's product or services, determining what they need or want, planning and developing products and services to meet their needs, and advertising and promoting these products and services.
- ◆ Sales is concerned with contacting customers, selling the products and services, taking orders, and following up on sales.

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- ◆ Sales is concerned with identifying the customers for the firm's products or services, developing products and services to meet customer's needs, promoting these products and services, selling the products and services and providing ongoing customer support.

Sales and Marketing Information System - Examples

| System | Description | Organizational Level |
|-------------------------|--|-----------------------------|
| Order processing | Enter, process and track orders | Operational |
| Market analysis | Identify customers and markets using data on demographics, markets, consumer behavior and trends | Knowledge |
| Pricing analysis | Determine prices for products and services | Management |
| Sales trend forecasting | Prepare 5-years sales forecasts | Strategic |

Manufacturing and Production Systems

- ◆ Responsible for actually producing the firm's goods and services.
- ◆ Manufacturing and production systems deal with the planning, development and maintenance of production facilities, the establishment of production goals, the acquisition, storage and availability of production materials and the scheduling of equipment, facilities, materials and labor required to fashion products.

Manufacturing and Production Systems

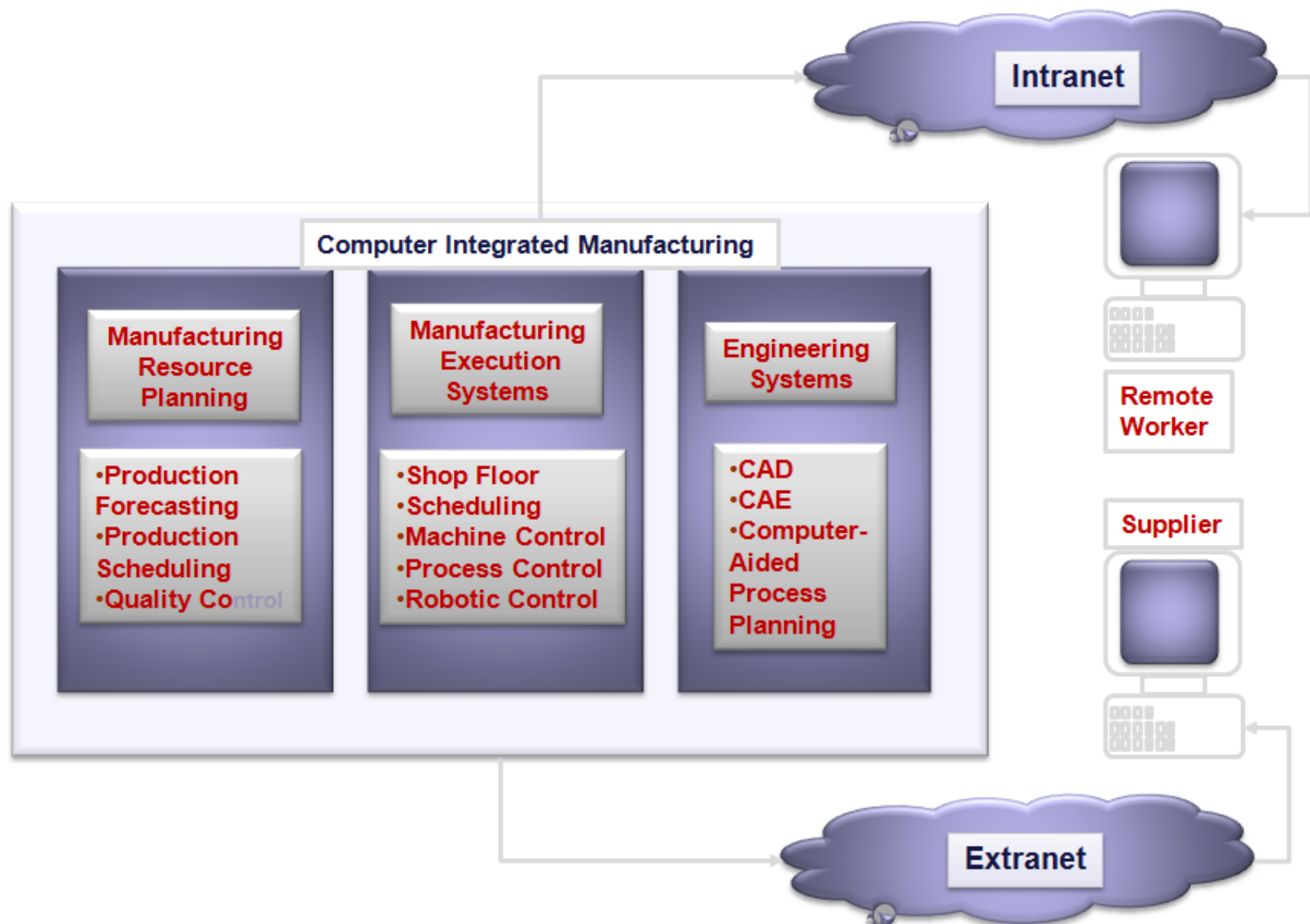
- ◆ Responsible for actually producing the firm's goods and services.
- ◆ Manufacturing and production systems deal with the planning, development and production of goods and services, the establishment of facilities, the availability of resources, storage and distribution of materials, and the controlling of equipment and production processes.

**Systems that deal with
the planning, development and production
of
products and services and
with controlling the flow of production.**

Manufacturing and Production Systems

| System | Description | Organizational Level |
|------------------------------------|--|-----------------------------|
| Machine control | Control the actions of machines and equipment | Operational |
| Computer-aided design (CAD) | Design new products using the computer | Knowledge |
| Production planning | Decide when and how many products should be produced | Management |
| Facilities location | Decide where to locate new production facilities | Strategic |

Manufacturing and Production Systems



Finance and Accounting System

- ◆ Responsible for managing the firm's financial assets, such as cash, stocks, bonds and other investments in order to maximize the return on these financial assets.
- ◆ The financial function is also in charge of managing the capitalization of the firm.
- ◆ The accounting function is responsible for maintaining and managing the firm's financial records - receipts, disbursements, depreciation, payroll - to account for flow of funds in a firm.
- ◆ Finance and accounting share related problems - how to keep track of a firm's financial assets and fund flows.

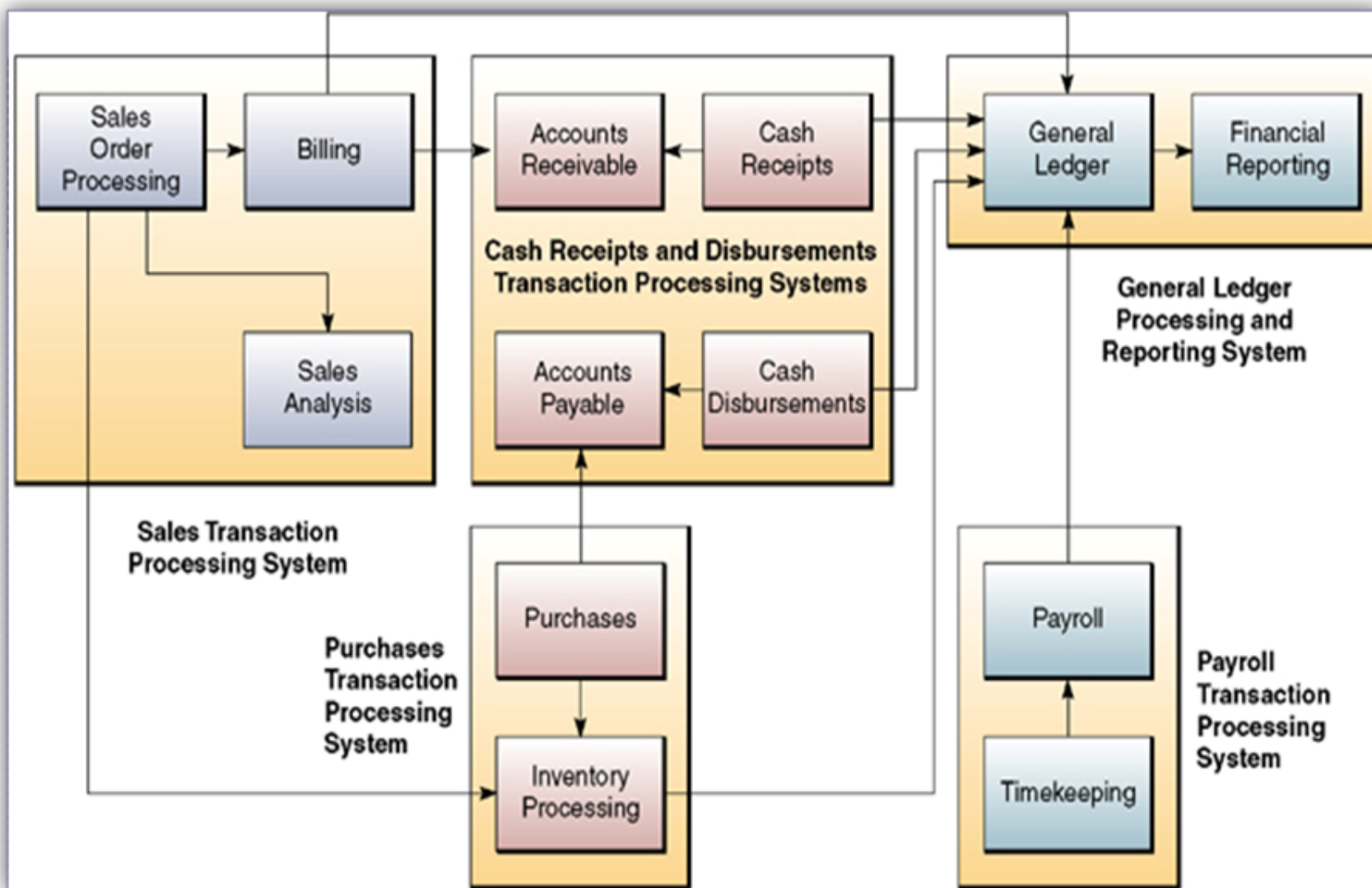
Finance and Accounting System

- ◆ Responsible for managing the firm's financial assets, such as cash, stocks, bonds and investments in order to maximize the return.
- ◆ The firm's financial system is responsible for managing the capital.
- ◆ The firm's financial system is responsible for managing the firm's financial assets and fund flows.
- ◆ Finance is responsible for managing the firm's financial assets and fund flows.

Finance and Accounting System

| System | Description | Organizational Level |
|---------------------|--|-----------------------------|
| Accounts receivable | Track money owed the firm | Operational |
| Portfolio analysis | Design the firm's portfolio of investments | Knowledge |
| Budgeting | Prepare short-term budgets | Management |
| Profit planning | Plan long-term profits | Strategic |

Finance and Accounting System - Examples



Human Resource Systems

- ◆ Responsible for attracting, developing and maintaining the firm's work force.
- ◆ Human resource ISs support activities such as identifying potential employees, maintaining complete records on existing employees and creating programs to develop employees' talents and skills.

Human Resource Systems

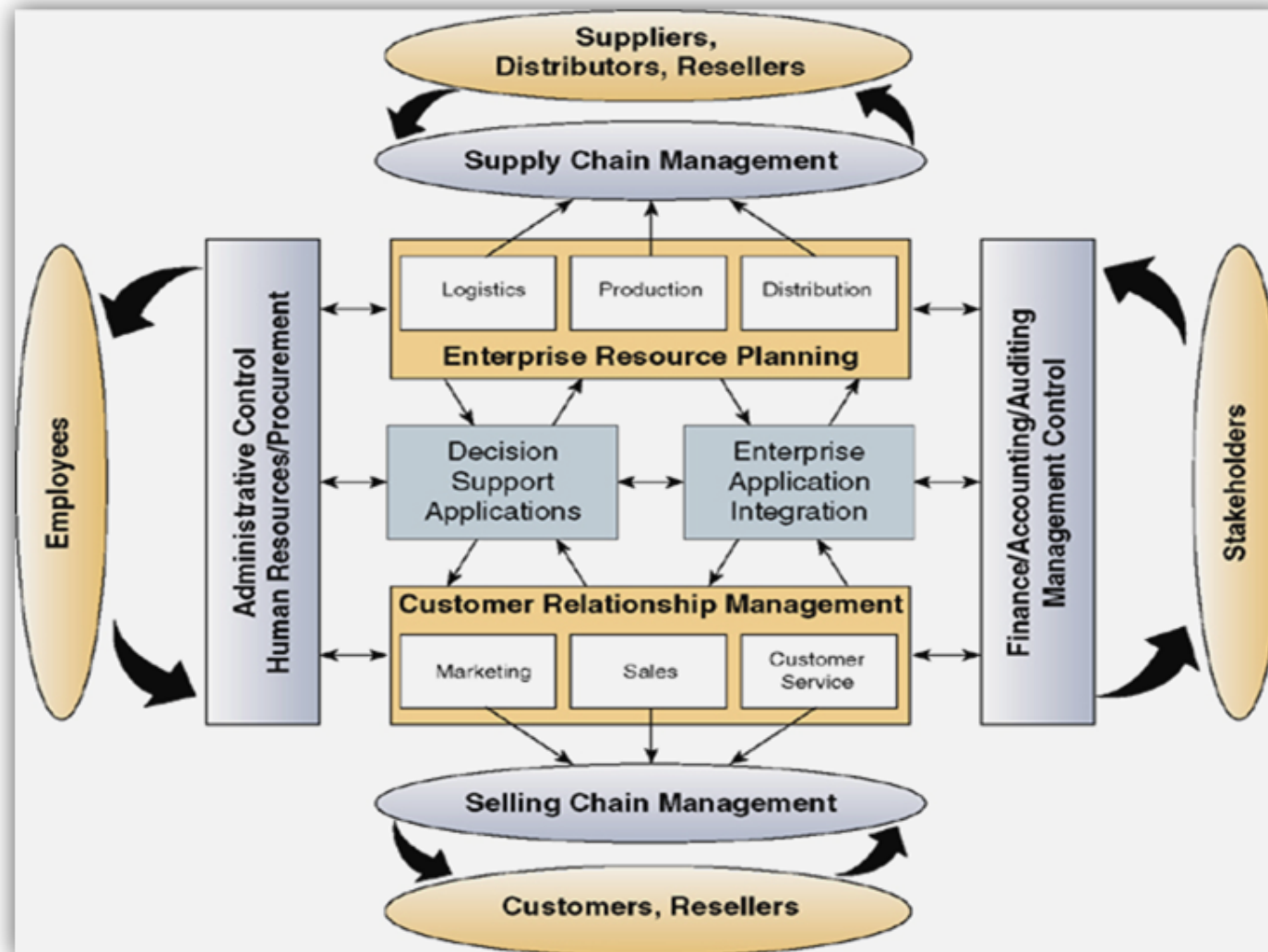
- ◆ Responsible for attracting, developing and maintaining the firm's work force.
- ◆ Human resource systems are responsible for identifying potential employees, maintaining employee records, and tracking employee skills, job performance & training and support planning for employee compensation and career development.

**System that
maintain employee records,
track employee skills,
job performance & training and support planning
for
employee compensation and
career development.**

Human Resource Systems

| System | Description | Organizational Level |
|--------------------------|---|-----------------------------|
| Training and development | Track employee training skills and performance appraisals | Operational |
| Career pathing | Design career paths for employees | Knowledge |
| Compensation analysis | Monitor the range and distribution of employee wages, salaries and benefits | Management |
| Human resource planning | Plan the long-term labor force needs of the organization | Strategic |

The e-Business Application Architecture



The e-Business Application Architecture

- ◆ E-business applications are integrated into cross-functional enterprise application clusters like :
 1. Enterprise Resource Planning (ERP)
 2. Customer Relationship Management (CRM)
 2. Decision support
 3. Supply Chain Management (SCM)
 4. Selling chain Management

ERP

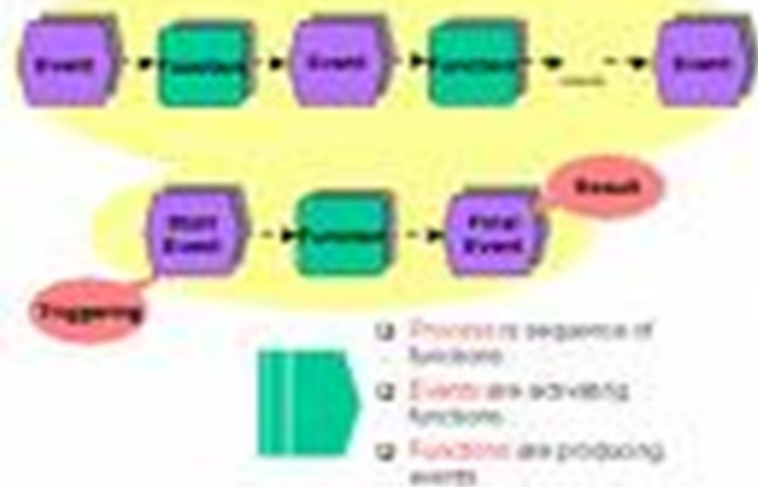


MRP
(Materials
Requirement
Planning)

MRP II
(Manufacturing
Resource
Planning)

ERP
(Enterprise
Resource
Planning)

**ERP II (or x-
ERP) (Extended
ERP)**



Enterprise Resource Planning

- ◆ ERP is the backbone of e-Business. In other words, ERP is a business operating system, the equivalent of the Windows OS for back-office operations.
- ◆ Enterprise Resource Planning (ERP) is an integrated computer-based system used to manage internal and external resources, including tangible assets, financial resources, materials, and human resources.
- ◆ Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders.

Enterprise Resource Planning

- ◆ ERP is the backbone of a Business. In other words, ERP is a business process management system that integrates all the business processes for the entire organization.
- ◆ ERP is a cross-functional enterprise system that serves as a framework to integrate and automate many of the business processes that must be accomplished within the manufacturing, logistics, distribution, accounting, finance, human resource functions of a business.
- ◆ ERP is a business process management system that integrates all the business processes for the entire organization.

Enterprise Resource Planning

- ◆ ERP is being recognized as a necessary ingredient for the efficiency, agility, and responsiveness to customers and suppliers that an e-business enterprise needs to succeed in the dynamic world of e-commerce.
- ◆ Companies are finding major business value in installing ERP software in two major ways:
 1. ERP creates a framework for integrating and improving their back-office systems that results in major improvements in customer service, production, and distribution efficiency.
 2. ERP provides vital cross-functional business processes and supplier and customer information flows supported by ERO systems.

Enterprise Resource Planning

Cross-functional business processes and supplier and customer information flows supported by ERP systems



Enterprise Resource Planning

- ◆ An ERP system can either reside on a centralized server or be distributed across modular hardware and software units that provide "services" and communicate on a local area network.
- ◆ The distributed design allows a business to assemble modules from different vendors without the need for the placement of multiple copies of complex and expensive computer systems in areas which will not use their full capacity.
- ◆ ERP software is a family of software modules that supports the business activities involved in these vital back office processes.

Venders of ERP Software

- ◆ mySAP from SAP
- ◆ SAP R/3 from SAP
- ◆ Oracle e-Business Suit from Oracle
- ◆ PeopleSoft from Oracle
- ◆ Baan from Infor Global solutions
- ◆ NetERP from NetSuite Inc.
- ◆ Epicor Enterprise from Epicor

Advantages of ERP Software

- ◆ Sales forecasting, which allows inventory optimization
- ◆ Order tracking, from acceptance through fulfillment
- ◆ Revenue tracking, from invoice through cash receipt
- ◆ Matching purchase orders (what was ordered), inventory receipts (what arrived), and costing (what the vendor invoiced)
- ◆ Eliminate the need to synchronize changes between multiple systems—consolidation of finance, marketing and sales, human resource, and manufacturing applications.
- ◆ Enable standard product naming/coding.
- ◆ Provides a comprehensive enterprise view (no "islands of information"). They make real-time information available to management anywhere, any time to make proper decisions.
- ◆ ERP protect sensitive data by consolidating multiple security systems into a single structure.

Disadvantages of ERP Software

- ◆ Re-engineering business processes to fit the ERP system may damage competitiveness and/or divert focus from other critical activities.
- ◆ ERP can cost more than less integrated and/or less comprehensive solutions.
- ◆ High switching costs increase vendor negotiating power vis a vis support, maintenance and upgrade expenses.
- ◆ Overcoming resistance to sharing sensitive information between departments can divert management attention.
- ◆ Integration of truly independent businesses can create unnecessary dependencies.
- ◆ Extensive training requirements take resources from daily operations.

CRM

- ◆ **Customer Relationship Management (CRM):** A cross-functional e-business application that integrates and automates many customer serving processes in sales, direct marketing, account and order management, and customer service and support.
- ◆ CRM systems also create an IT framework that integrates all of these processes with the rest of a company's business operations.
- ◆ CRM systems consist of a family of software modules that perform the business activities involved in such front office processes.
- ◆ CRM software provides the tools that enable a business and its employees to provide fast, convenient, dependable, and consistent service to its customers.

Benefits of CRM

Benefits of CRM includes :

- ◆ Allows a business to identify and target their best customers; those who are the most profitable to the business, so they can be retained as lifelong customers for greater and more profitable services.
- ◆ Enables real-time customization and personalization of products and services based on customer wants, needs, buying habits, and life cycles.
- ◆ Also used to keep track of when a customer contacts the company, regardless of the contact point.
- ◆ Enables a company to provide a consistent customer experience and superior service and support across all the contact points a customer chooses.

SCM

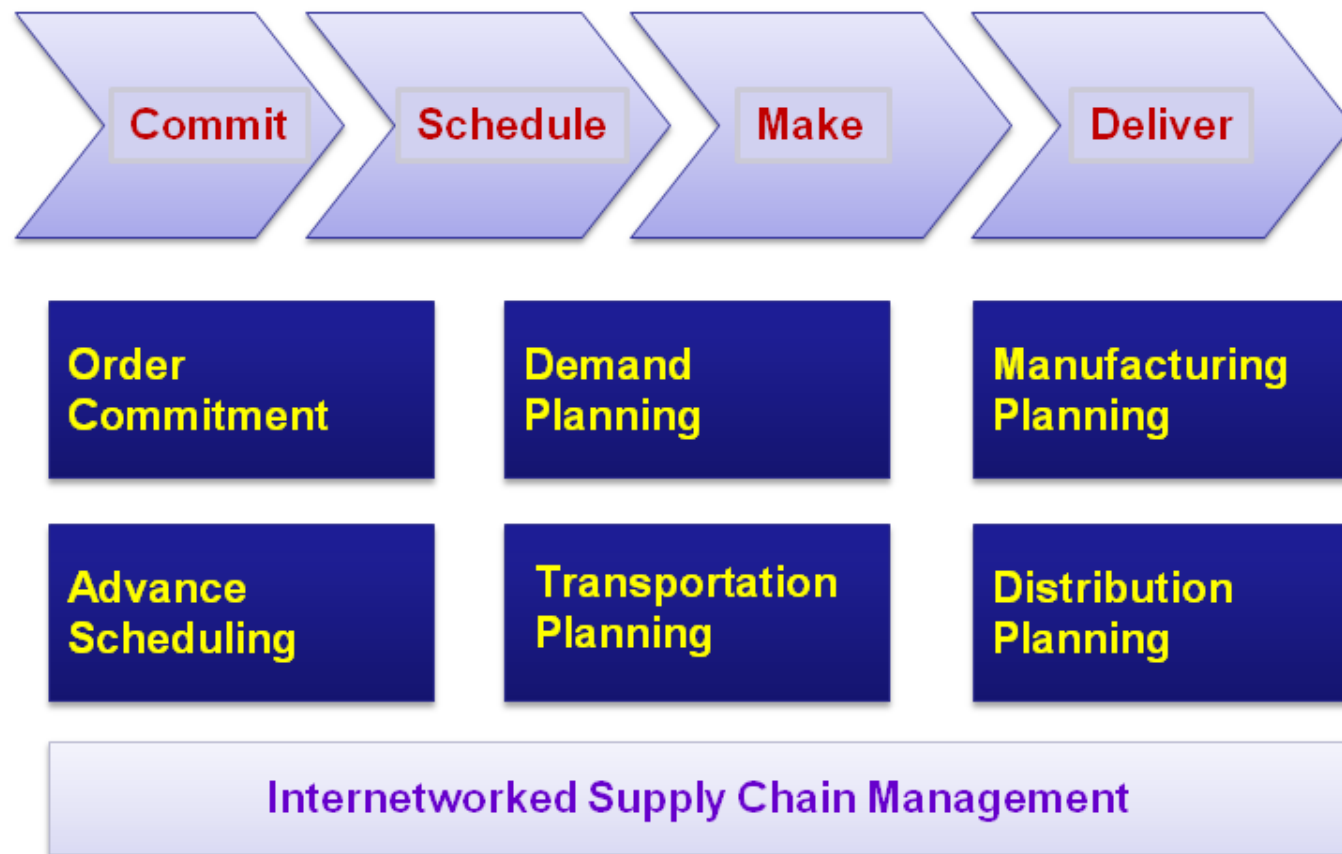
- ◆ **Supply Chain Management (SCM):** Supply Chain Management: Integrating management practices and information technology to optimize information and product flows among the processes and business partners within a supply chain.
- ◆ Supply Chain Management (SCM) is the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers.
- ◆ Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption.
- ◆ SCM is a top strategic objective for many companies. It is an absolute requirement if they want to meet their e-commerce customer value imperative: what the customer wants, when and where it's wanted, at the lowest possible cost.

SCM

- ◆ The interrelationships with other businesses needed to build and sell a product make up a network of business relationships that is called the supply chain.
- ◆ Cross-functional e-business systems like supply chain management reengineer and streamline traditional supply chain processes.
- ◆ The demands of e-commerce are pushing manufacturers to use their intranets, extranets, and e-commerce Web portals to help them reengineer their relationships with suppliers, distributors, and retailers.
- ◆ The objective is to significantly reduce costs, increase efficiency, and improve supply chain cycle times.
- ◆ The result is much more effective distribution and channel networks among business partners.

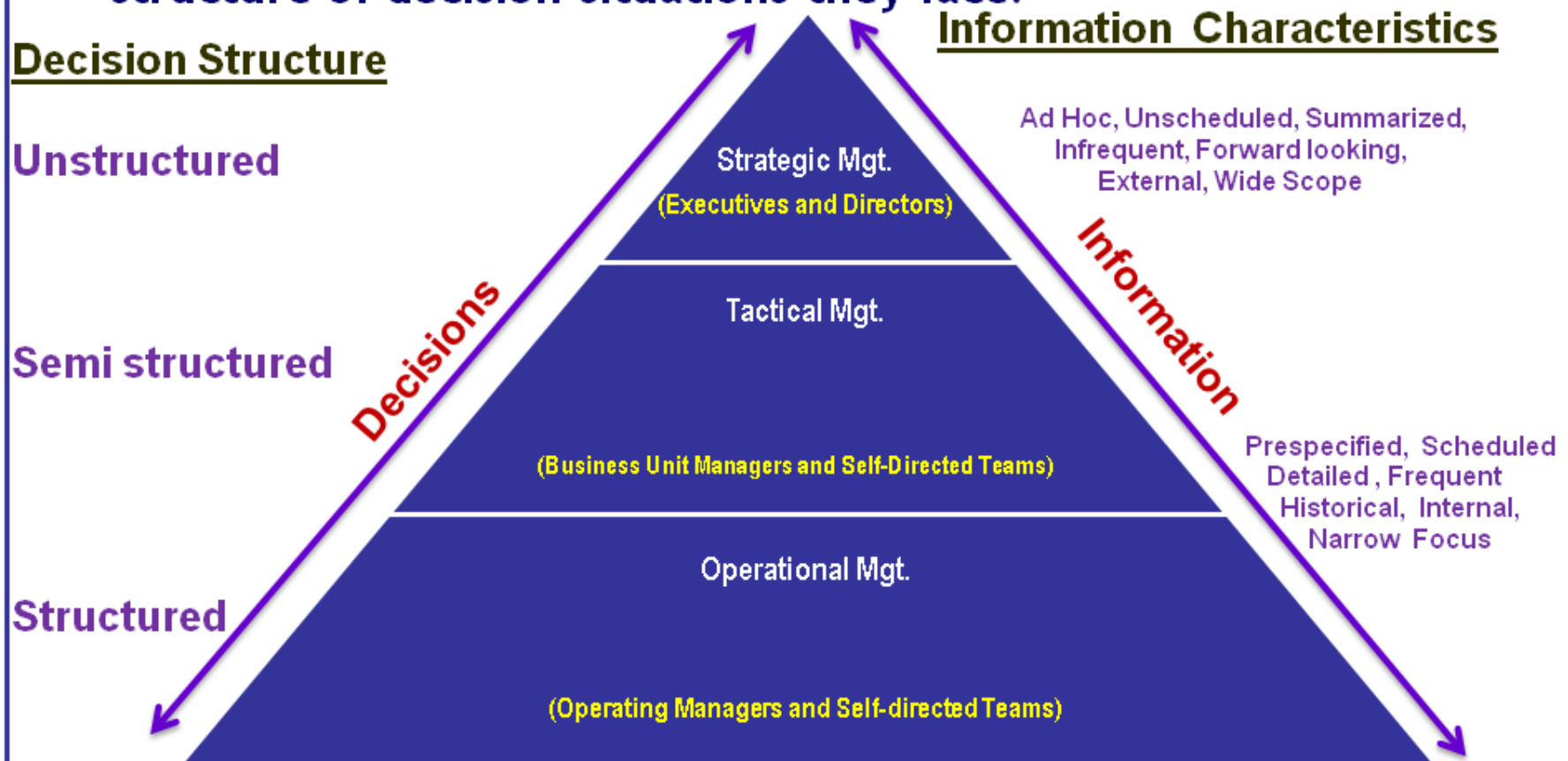
SCM

- ◆ All of the objectives of supply chain management are aimed at achieving agility and responsiveness in meeting the demands of a company's customers and the needs of their business partners.



Information Requirements of Decision Makers

- ◆ The type of information required by directors, executives, managers and members of self-directed teams is directly related to the level of management decision making involved and the structure of decision situations they face.



Decision Support Systems


- ◆ DSSs are computer-based information systems that provide interactive information support to managers and business professionals during the decision-making process.
- ◆ DSSs serve the management, operations, and planning levels of an organization and help to make decisions, which may be rapidly changing and not easily specified in advance.
- ◆ Decision support system use (1) Analytical models (2) specialized databases (3) a decision maker's own insights and judgments and (4) an interactive, computer-based modeling process to support the making of semistructured or unstructured business decisions.

Comparison DSSs and MISs

| | MIS | DSS |
|---|--|---|
| Decision Provided | Provide information about the performance of the organization | Provide information and decision support techniques to analyze specific problems or opportunities |
| Information form and frequency | Periodic, exception, demand and push reports and responses | Interactive inquiries and responses |
| Information format | Prespecified, fixed formats | Ad hoc, flexible and adaptable format |
| Information processing methodology | Information produced by extraction and manipulation of business data | Information produced by analytical modeling of business data |

Decision Support Systems

◆ Activities of the major types of analytical modeling:



| | |
|-------------------------|---|
| What-if analysis : | <ul style="list-style-type: none">• Observing how changes to selected variables affect other variables. |
| Sensitivity analysis : | <ul style="list-style-type: none">• Observing how repeated changes to a single variable affect other variables |
| Goal-seeking analysis : | <ul style="list-style-type: none">• Making repeated changes to selected variables until a chosen variable reaches a target value. |
| Optimization analysis : | <ul style="list-style-type: none">• Finding an optimum value for selected variables, given certain constraints. |
| | |
| | |
| | |

Decision Support Systems

Benefits

- ◆ Improves personal efficiency
- ◆ Speed up the process of decision making
- ◆ Increases organizational control
- ◆ Encourages exploration and discovery on the part of the decision maker
- ◆ Speeds up problem solving in an organization
- ◆ Facilitates interpersonal communication
- ◆ Promotes learning or training
- ◆ Generates new evidence in support of a decision
- ◆ Creates a competitive advantage over competition
- ◆ Helps automate managerial processes

Group Decision Support Systems

- ◆ **Group Decision Support Systems (GDSS)** - An interactive, computer-based system that facilitates solution of unstructured problems by a set of decision-makers working together as a group.
- ◆ It aids groups, especially groups of managers, in analyzing problem situations and in performing group decision making tasks.

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