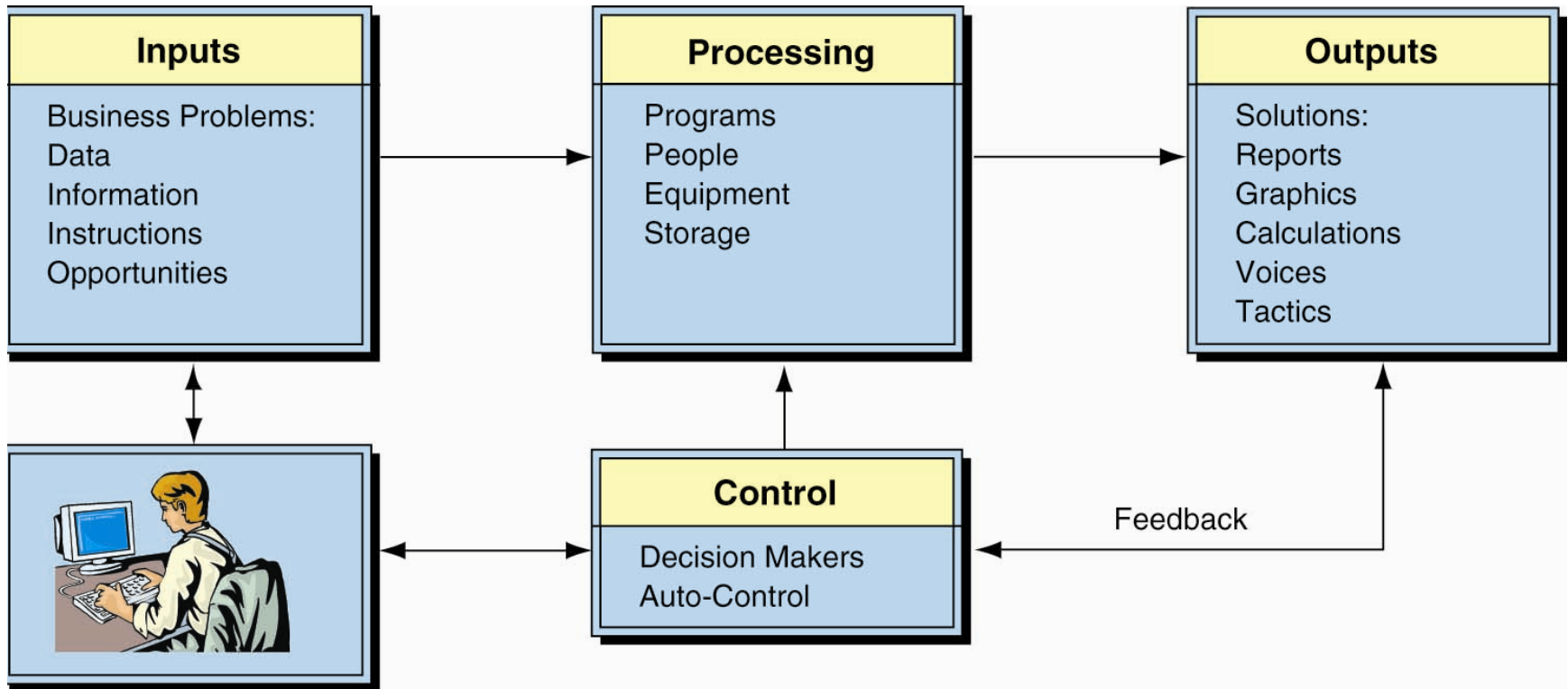


# Information System and Information Technology

An information system (IS) collects, processes, stores, analyzes, and disseminates information for a specific purpose “Application”.

- Hardware
- Software
- Data
- Network
- Procedures
- People

# Schematic view of Information Systems



# Information System and Information Technology

- Difference between Computers and Information Systems
- What is Information Technology?
  - Collection of computing systems used by organisation.

# Adaptive, Agile and Real-Time Enterprise

## ● The Process:

- Recognition of environmental and organizational changes.
- Dealing with changes properly and correctly.
- Becomes a digital and agile enterprise.
- Does not wait for competitors to introduce change.
- Change IS quickly.
- Follow specific activities.

# Specific Activities



- Develop strategic systems ---> Employ unique systems that provide strategic advantage (e.g., new features, low prices, super service)
- Introduce customer-focused systems ---> Making the customer happy is a first priority
- Improve decision making and forecasting Use analytical methods to optimize operations, reduce cost, expedite decision making, support collaboration, automate routine decision.

# Specific Activities



- Restructure business processes and organization structure ---> Restructure business processes to make them more efficient/effective. Use business process management methodology and business process reengineering.
- Use self-service approach ---> Have your customers, employees, or business partners use self-service whenever possible (e.g., tracking status, changing an address, or managing your inventory).

# Specific Activities



- Continuous improvements should be everywhere -> Sustain competitive edge by improving operations, asset management, quality, and performance.
- Use mass customization Fulfill customized orders using efficient procedures and processes. Compete in price with standard product.
- Employ on-demand manufacturing/service Meet the demands of your customers for standard or customized products/services efficiently and effectively.

# Specific Activities



- Promote business alliances --> Create business alliances, even with your competitors, to reduce risks and costs. Collaborate effectively; provide benefits to your partners.
- Innovation and creativity should be part of the culture Encourage innovation and creativity via rewards and collaboration. Encourage learning.
- Use e-commerce and digital systems ---> Automate business processes, procedures, and routine operations. Use new business models.
- Share information and knowledge Encourage information and knowledge creation, storage, and reuse



# Specific Activities

- Go global-but do it carefully --->Buy and/or sell globally, find business partners globally, and outsource offshore. Do it all with proper risk analysis.
- Use leading edge and emerging technologies, including digital ones ---> Keep yourself up on all technological developments, conduct competitive analysis, plan properly, and conduct cost\benefit/risk analyses
- Use enterprise and integrated system --->Integrated system of internal information applications together with partners system facilitate collaboration, reduce costs and errors, and competitive advantage.

# Specific Activities

- Develop strategic systems ---> Employ unique systems that provide strategic advantage (e.g., new features, low prices, super service)
- Introduce customer-focused systems ---> Making the customer happy is a first priority
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# Adaptive, Agile and Real-Time Enterprise

- HP Model - adaptive enterprise:
  - IT as facilitator.
  - Measurement of IT response to business and environmental changes.
  - Simplification of IT support system.
  - Standardization.
  - Modularity.
  - Easy, rapid and inexpensive integration of parts.
  - Collaborative approach.
  - Improvement in business processes.

# Adaptive, Agile and Real-Time Enterprise

- **Benefits of adaptive enterprise:**
  - Increased business agility.
  - Reduced risk.
  - Improved quality of service.
  - Improved total cost of ownership.

# Adaptive, Agile and Real-Time Enterprise

- **Real-time. On-demand IT Support:**
  - Sales people can check inventories and production schedule.
  - Adequate supplies by suppliers.
  - Online payments – balance checking and payment.
- **Information System Failure:**
  - Dot com bubble
  - Go.com of walt disney.

# Information Technology Developments and Trends

- Table 1.4 Page 23

# Information System – Primary Purpose

Collects data, processes it into information then converts information into knowledge for a specific purpose.

- **Data**

- Elementary description of things, events, activities, and transactions that are recorded, classified, and stored, but not organized to convey any specific meaning

- **Information**

- Data that has been organized so that they have meaning and value to the recipient

- **Knowledge**

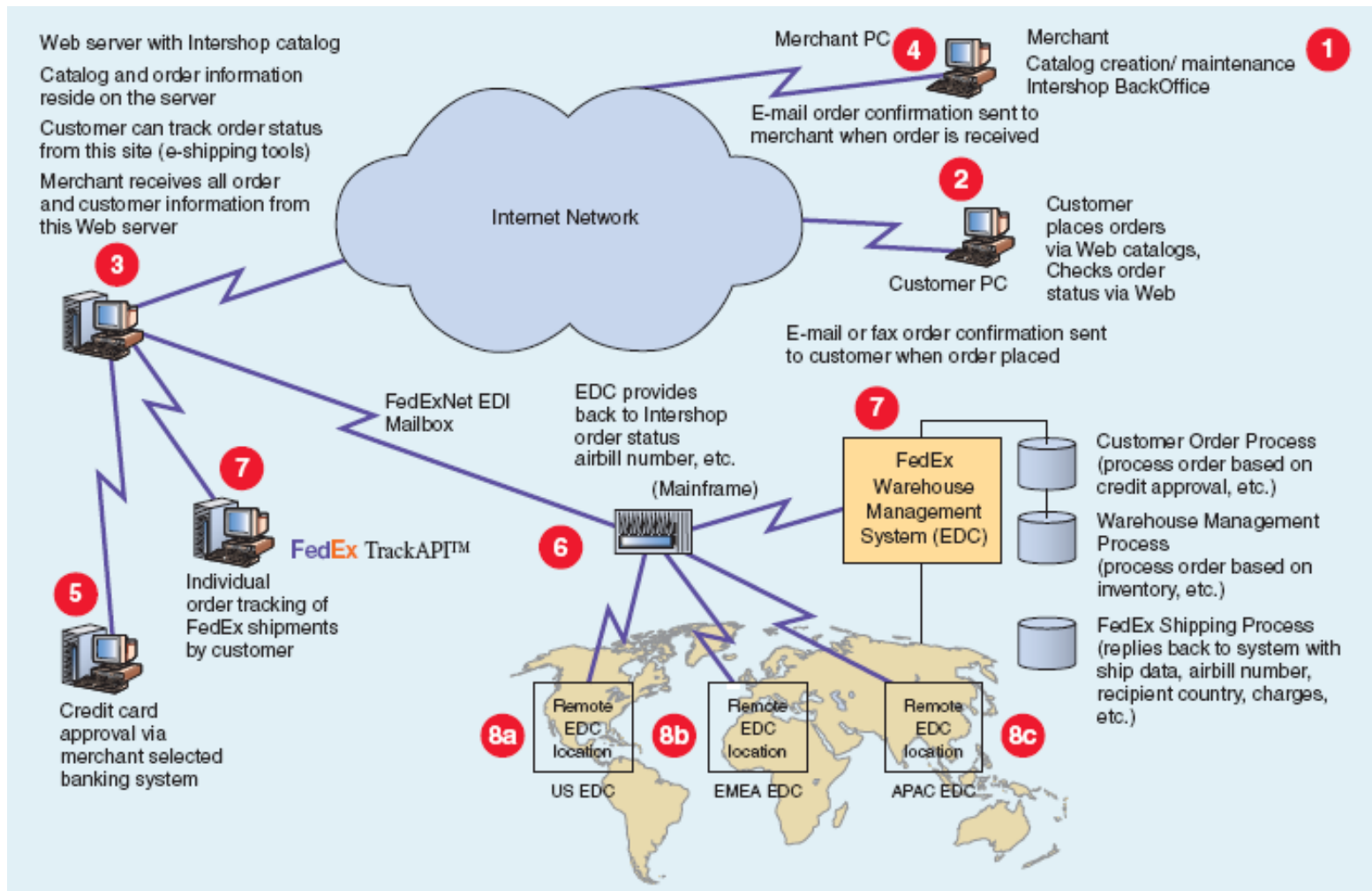
- Information that has been organized and processed to convey understanding, experience, and expertise as they apply to a current problem or activity

# Information System – Classification By Organizational Structure

An information system (IS) can span departments, business units and corporations.



# Information System – Classification By Organizational Structure – The FedEx Example



# Inter-Organizational Systems (IOS)

- IOS are systems that connect two or more organizations. These systems are common among business partners and play a major role in e-commerce as well as in **supply chain management support**
- The first type of IT system that was developed in the 1980s to improve communications with business partners was **electronic data interchange (EDI)**, which involved computer-to-computer direct communication of standard business documents (such as purchase orders and order confirmations) between business partners. These systems became the basis for *electronic markets*, which later developed into *electronic commerce*.
- *Web-based systems (many using XML)* deliver business applications via the Internet. Using browsers and the Internet, people in different organizations communicate, collaborate, access vast amounts of information, and run most of the organization's tasks and processes.

# Information Architecture Classified by Hardware

A common way to classify information architecture is by computing paradigms, which are the core of the architecture.

- Mainframe Environment
- PC Environment
- PC-LAN Environment
- Distributed Computing Environment
- Client/Server Environment
- Enterprise-wide Computing Environment
- Legacy systems

# The Web Based IT Architectures

**Web-based systems** refer to applications or services that are resident on a server that is accessible using a Web browser. The only client-side software needed to access and execute these applications is a Web browser environment.

- The Internet
- Intranets
- Extranets
- Corporate Portals
- E-commerce Systems
- Electronic Storefronts
- Electronic Markets
- Electronic Exchanges
- M-Commerce
- Enterprise Web

# Extranets



- Connect several intranets via the Internet, by adding a security mechanism and some additional functionalities
- Form a larger virtual network that allows remote users (*such as business partners or mobile employees*) to securely connect over the Internet to the enterprise's main intranet
- **Extranets** are also employed by two or more enterprises (*suppliers & buyers*) to share information in a controlled fashion, and therefore they play a major role in the development of business-to-business electronic commerce and Supply Chain systems