ACS-1803
Introduction to Information Systems

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Systems that Span Organizational Boundaries

Lecture Outline 7-1

Learning Objectives

To describe the characteristics of six information systems that span the organizational, managerial, and executive levels: Functional Information Systems (Re-cap), Decision Support Systems (DSS), Expert Systems (ES), Office Automation Systems (OAS), Collaboration Technologies, and Global (Geographic) Information Systems

Office Automation Systems

Systems That Span Organizational Boundaries

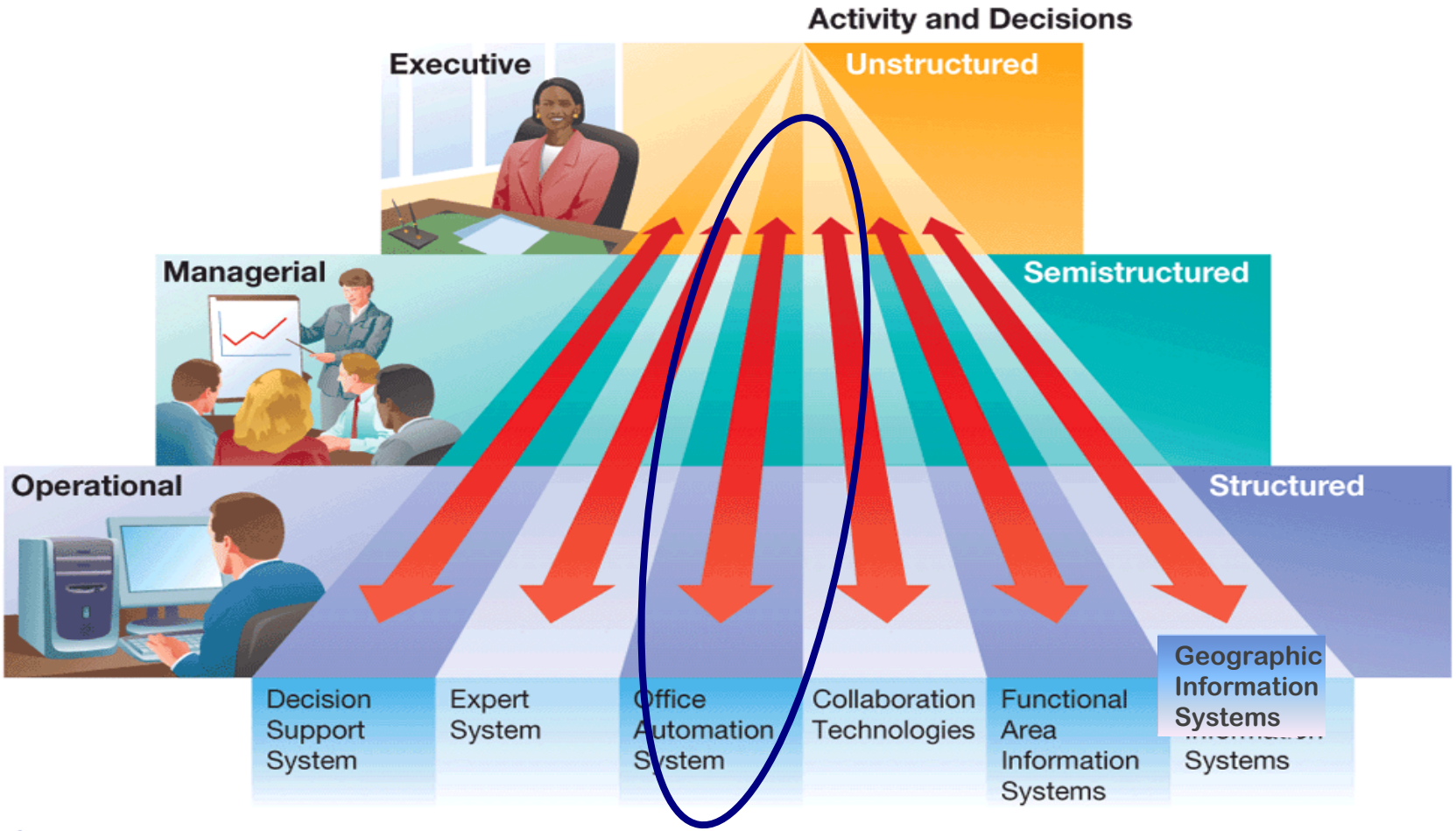


Figure 6.19 Organizational boundary-spanning information systems.

Office Automation Systems

- Computerizing and integrating office tasks through technology
- Use different types of technologies
- Instead of 'number crunching', they may perform 'document crunching'

Geographic Information Systems (GIS)

Systems That Span Organizational Boundaries

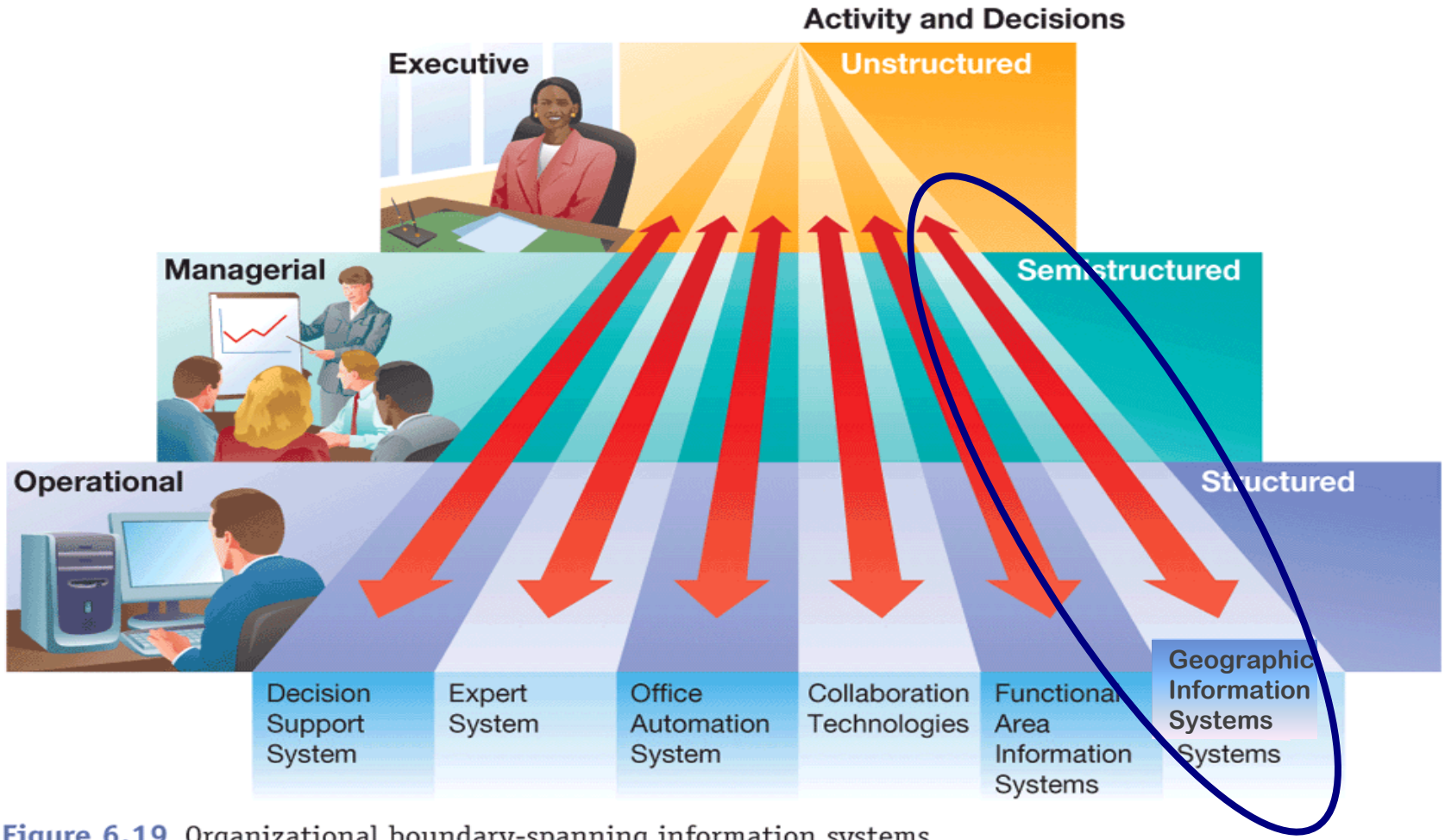
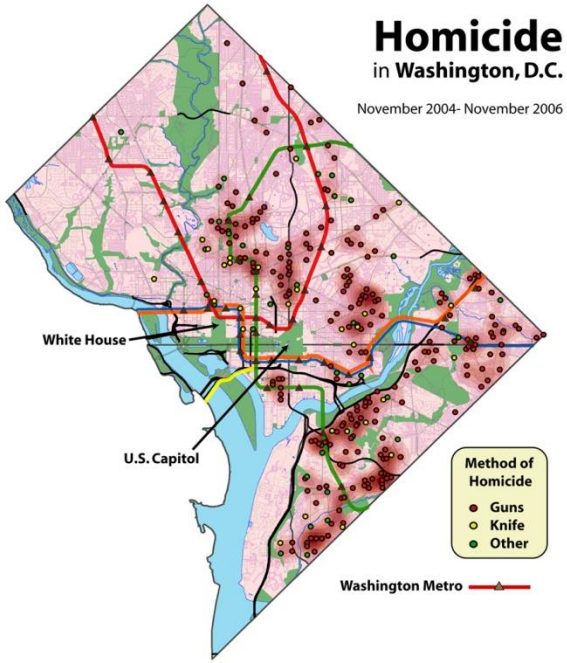
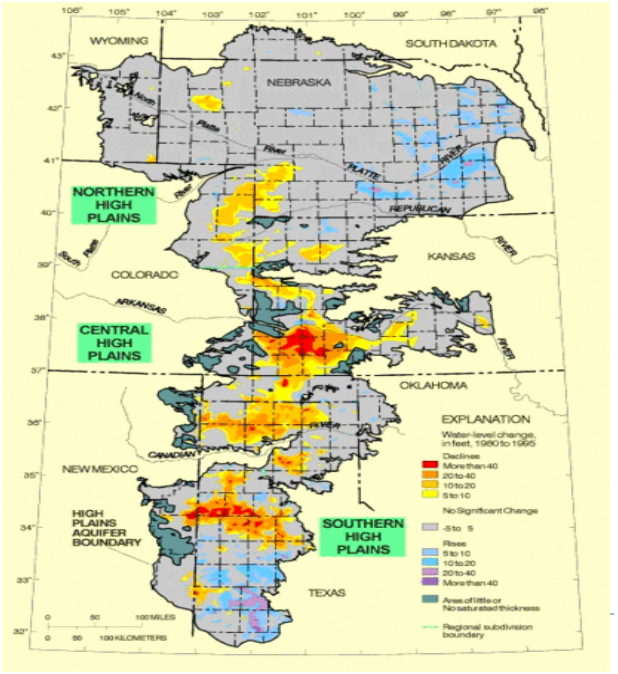


Figure 6.19 Organizational boundary-spanning information systems.

Geographic Information Systems

- **Geographic information system**: ties data to physical locations
- Represents data on a map in different formats
- May reflect demographic information in addition to geographic
- May use information from GPS satellites

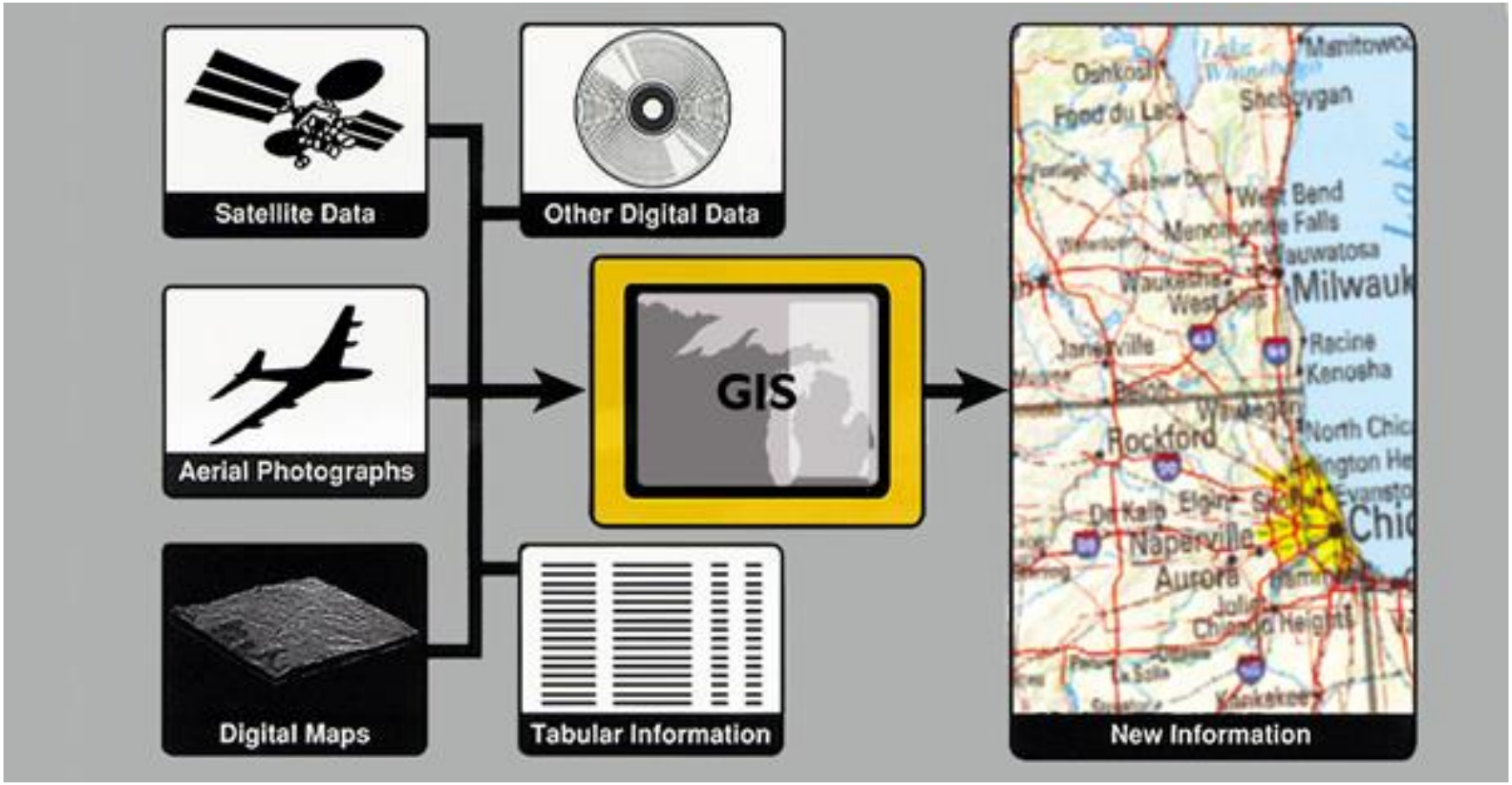




Geographic Information Systems

- Geographic information systems support organizations with answering the "Where" questions
  - delivery manager may want to know the shortest distance a truck can travel to deliver ordered goods
  - efficient routes for bussing school children
  - where to locate police stations
  - where to drill for oil
  - sales territories

Geographic Information Systems



GIS for Decisions

- Supermarket chain gets a system that shows population by age and income groups on map of city
  - Management can decide where to build their next store
- Police may have maps showing incidents of specific crimes in areas of City
  - Can decide how many police cars to deploy to different areas
- Government requires to identify where rainfall is located.
  - Comparing the rainfall information with other information, such as the location of marshes across the landscape, may show that certain marshes receive little rainfall. This fact may indicate that these marshes are likely to dry up, and this inference can help in making the most appropriate decisions about how to legislate about interactions with the marsh

GIS for Decisions

What is GIS?

A geographic information system (GIS) lets us visualize, question, analyze, interpret, and understand data to reveal relationships, patterns, and trends. Learn more.

Getting Started

- Top Five Benefits of GIS
- What Can I Do with GIS?
- The Geographic Approach
- Glossaries & Publications

Try GIS

Virtual Globe

Use ArcGIS Explorer (free) to combine your spatial data with free map services.

Superstorm Sandy Impacts

View areas impacted by Superstorm Sandy and associated demographic information. More Story Maps

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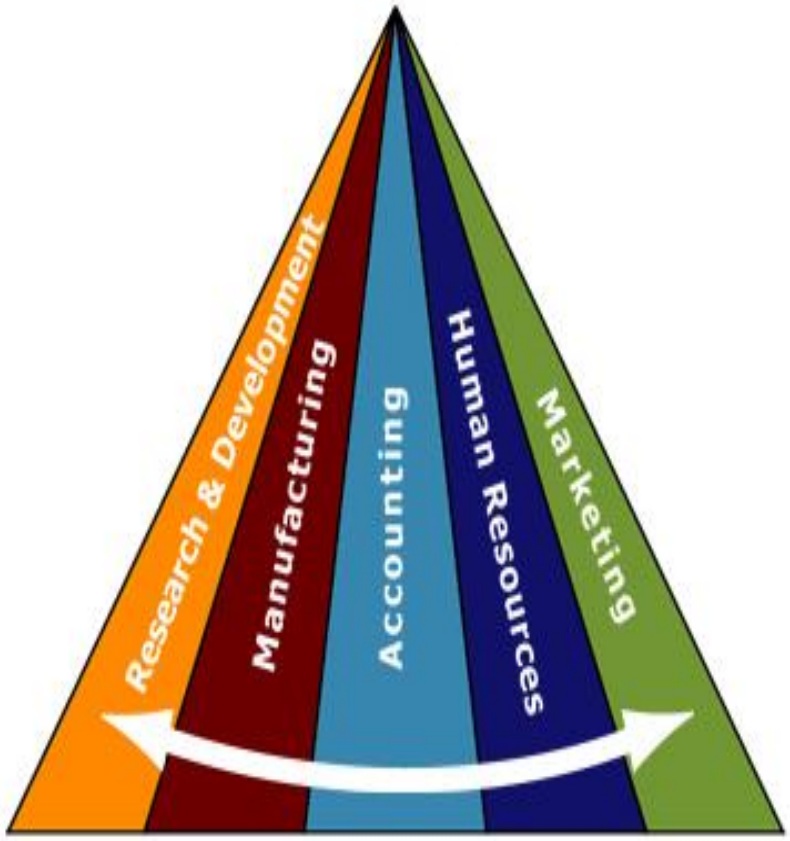
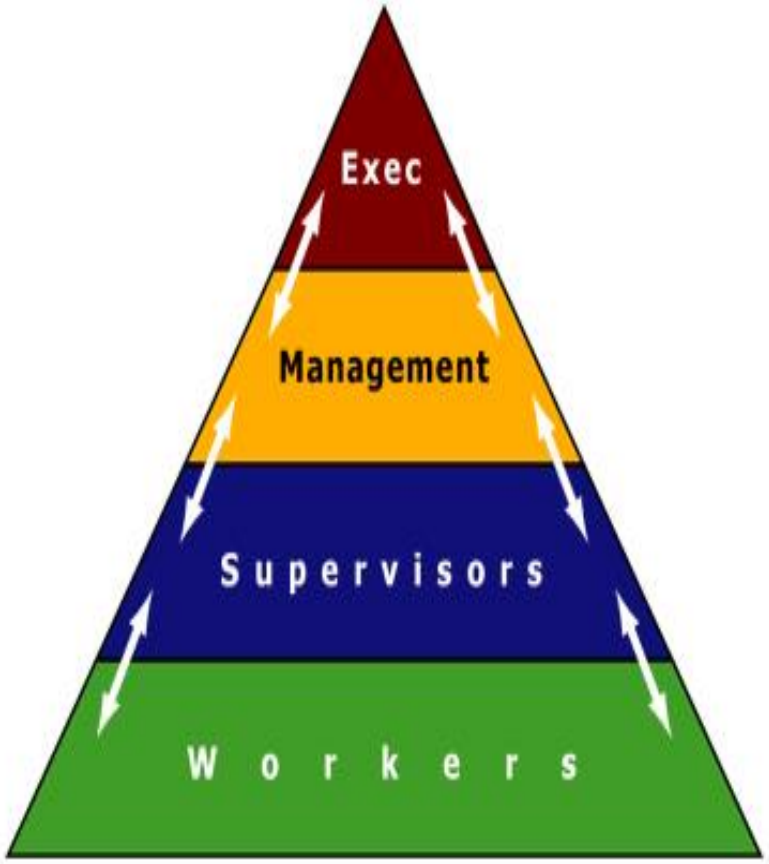
Vertical Area Systems

Vertical Area Systems

- We have examined information systems support in accounting and distribution (AIS); manufacturing, marketing, and HR management; such systems apply ACROSS variety of organizations and industries they may thus be called HORIZONTAL SYSTEMS
- Then, there are packaged systems geared to a **specific industry**, which integrates several functions at several levels in the organization
- A vertical System includes basic accounting and Distribution functions, some marketing, and specific funtionality for the type of business

Horizontal vs. Vertical Integration





Collaboration Technologies

Systems That Span Organizational Boundaries

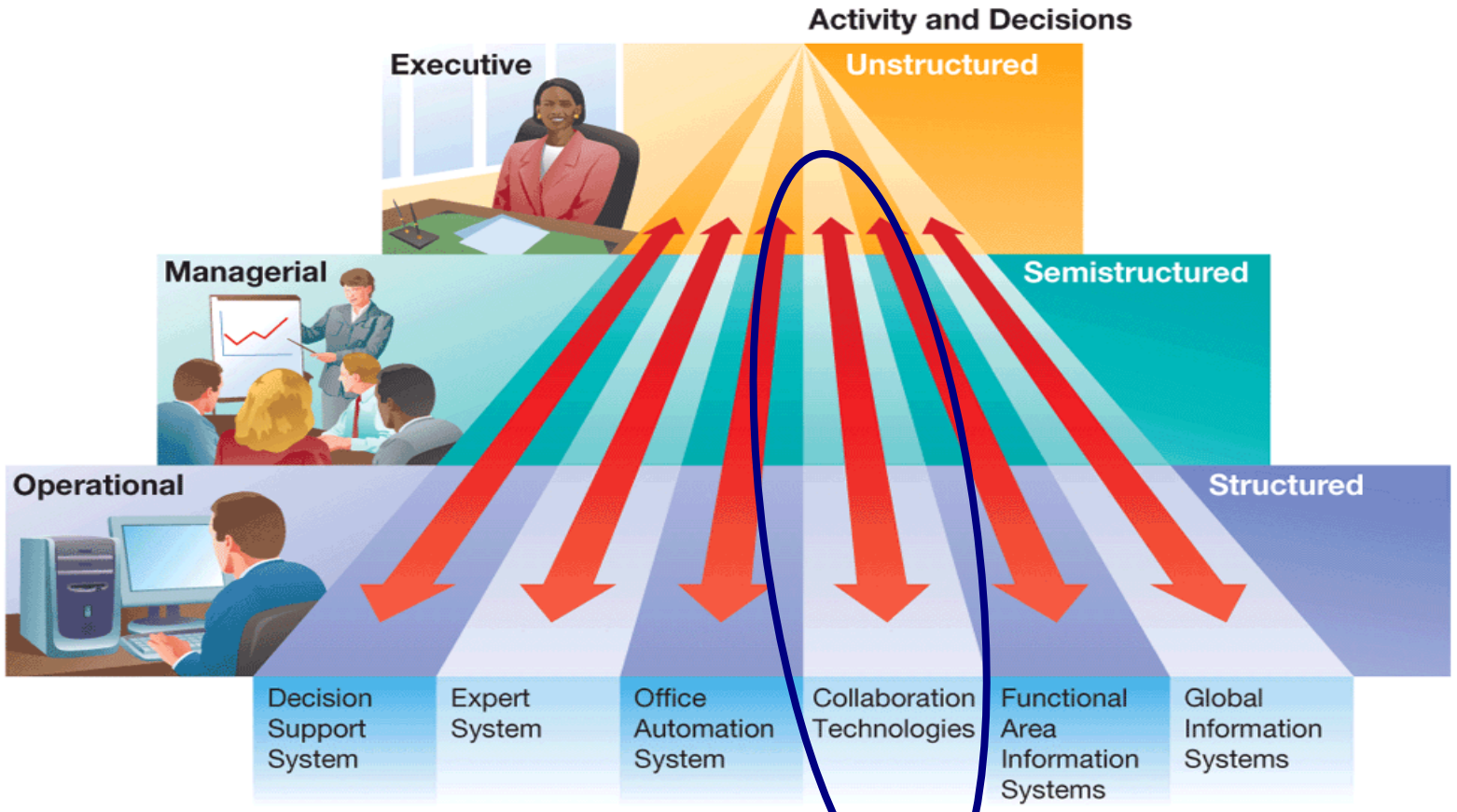


Figure 6.19 Organizational boundary-spanning information systems.

Collaborative Information Systems

- Systems that allow groups of people achieve a common goal through enhancing and facilitating **communications and knowledge sharing**
- Use networking technologies to include teleconferencing, document sharing, data sharing, information sharing
  - E.g. Each member can submit ideas anonymously; it shows up on big screen to be discussed
- Can include group decision support systems

Collaborative Technology (Groupware)

Groupware/ Group Support Systems (GSS)

Software that enables people to work together more effectively

Supported Activities

These systems come in two types:

- **Asynchronous Groupware** – Systems that do not require users to be on the system working at the same time, including: e-mail, newsgroups, workflow automation, group calendars, and collaborative writing tools
- **Synchronous Groupware** – Systems that allow and support simultaneous group interactions including shared whiteboards, electronic meeting support systems, video communication systems

Collaboration Technologies

Videoconferencing
Software and hardware that allow parties to meet electronically with both picture and voice

Supported Activities

- **Stand-alone Videoconferencing**
  - High quality, typically very expensive systems using dedicated microphones, cameras and hardware
  - Can support meetings between several people and locations simultaneously
- **Desktop Videoconferencing**
  - Lower quality, relatively inexpensive systems using a PC, small camera, and a microphone or telephone for voice communication
  - Allows two individuals to communicate from a desktop
- **Telepresence Technology**
  - Higher Education – Telepresence Magic (Cisco)

Group Support Systems

- Group support system (GSS):
  - Software and Hardware to provide effective support in group decision making
  - Also called *group decision support system* or *computerized collaborative work system*

GSS Software (continued)

- GSSs use a number of tools, including:
  - E-mail, instant messaging (IM), and text messaging (TM)
  - Video conferencing
  - Group scheduling
  - Project management
  - Document sharing

Collaborative Information Systems

- e.g., ThinkTank™ (http://www.groupsystems.com/)
  - business collaboration tool (group decision support)
  - brainstorming, organizing, prioritizing, evaluating, identifying and documenting your innovation process.
  - Can document presented ideas
  - Groups can be in one room or distributed over long distances