Chapter 4

Networking: Discovery, Communication, Collaboration

Information Technology For Management 6th Edition

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Learning Objectives

- Discuss the characteristics and standards of network computing
- Explain the benefits of interoperability and converged networks
- Describe the role of intranet and extranet portals and how they support supply chain management
- Understand the role of discovery, communication, and collaboration capabilities for organizations

Learning Objectives (Continued)

- Describe how new communication technologies are replacing or filling the gaps left by conventional technologies
- Describe how IT-based collaboration and communication support group work and decision making
- Describe the fundamental principals and capabilities of group work technologies
- Evaluate the managerial, social, and ethical issues related to the use of network computing, messaging, and collaboration

Local Area Network (LAN)

- **LAN** consists of the following components:
  - **LAN file server** is a repository of various software and data files for the network
  - **Nodes** are the client machines on the LAN
  - Wired or wireless communication media that connects the devices

Local Area Network (Continued)

- **LAN network interface card (NIC)** is a special adapter that links an individual device to the communication medium and specifies:
  - The rate of data transmission;
  - The size of the message units;
  - Addressing information attached to each message
  - The network topology
- **Network operating system (NOS)** manages the server and routes and manages communications on the network.

Wide Area Network (WAN)

- **Wide area networks (WANs)** are networks that cover large geographic areas.
  - WANs typically connect multiple LANs
  - WANs have large capacity and combine multiple channels (fiber optic, satellite, microwave, etc.)
  - WANs are provided by common carriers, such as telephone companies (Sprint, AT&T, etc.)
- **Value-added network (VAN)** are private, data-only networks managed by outside third-parties that provide these networks to multiple organizations.

Going Wireless

- Wifi - simple wireless networks
- WLAN - expanding the wireless connection
- WiMax - Long-range wireless

Network Topologies

- **Star**, all network nodes connect to a single computer, typically the file server
- **Bus**, all network nodes connect to the *bus,* which is a single communications channel, such as twisted pair, coaxial cable, or fiber optic cable
- **Ring**, network nodes are connected to adjacent nodes to form a closed loop

Enterprise Networking

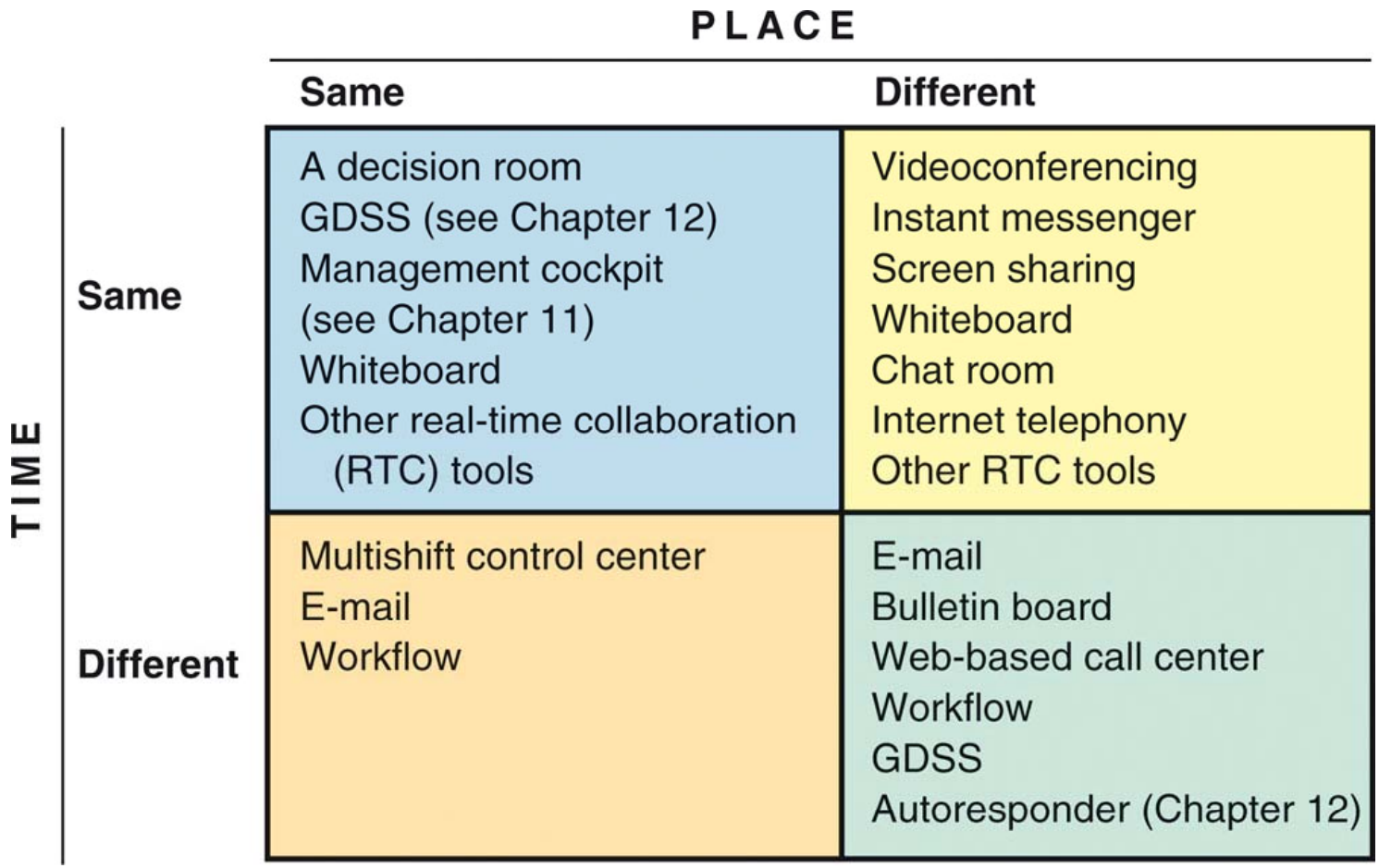
- **Enterprise network** is an organization's interconnected network of multiple LANs and also can include multiple WANs

- **Backbone networks** are corporate high-speed central networks to which multiple smaller networks such as LANs called *embedded LANs* and smaller WANs connect

The Network Computing Infrastructure

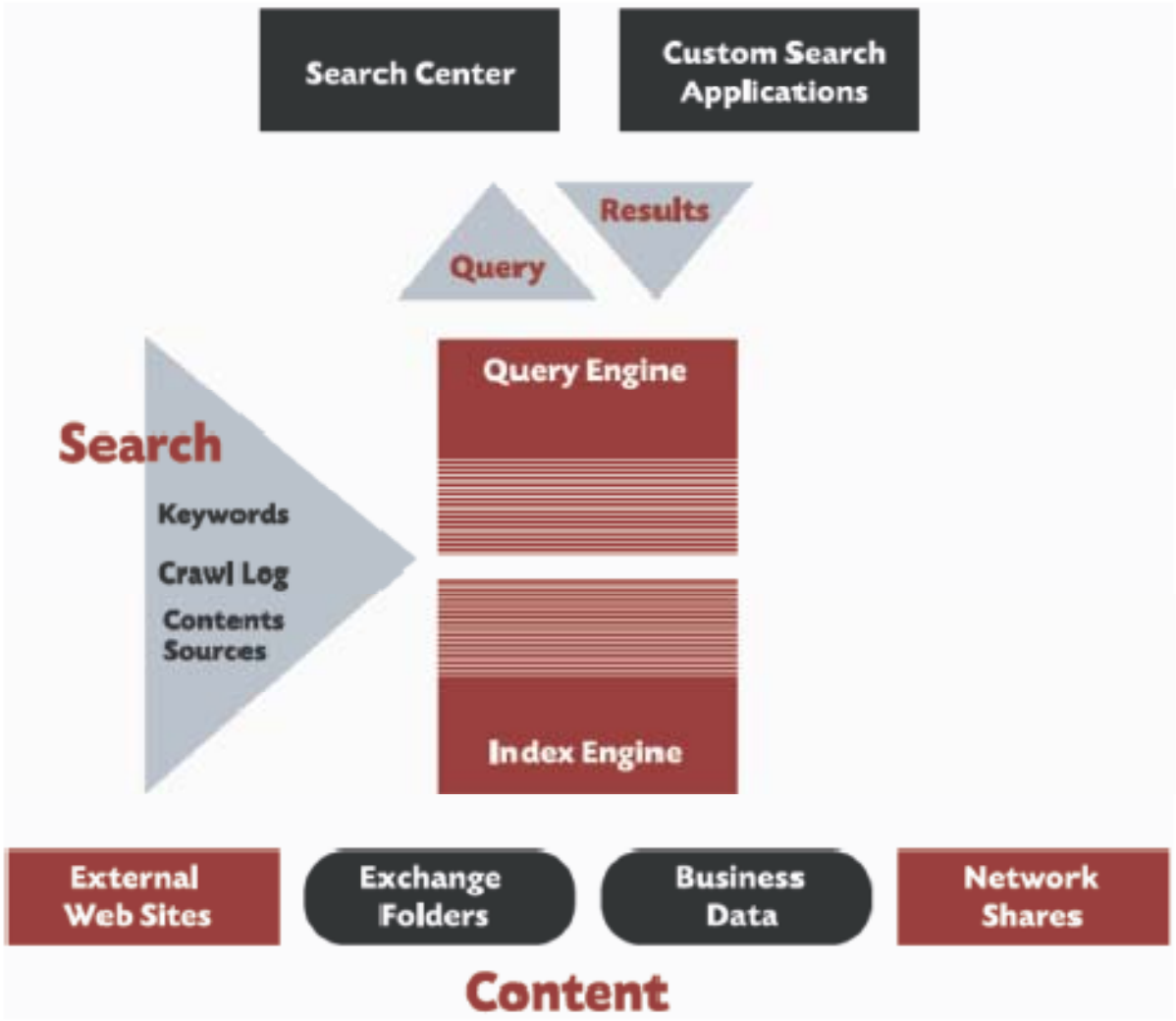


Framework for IT support of Communication

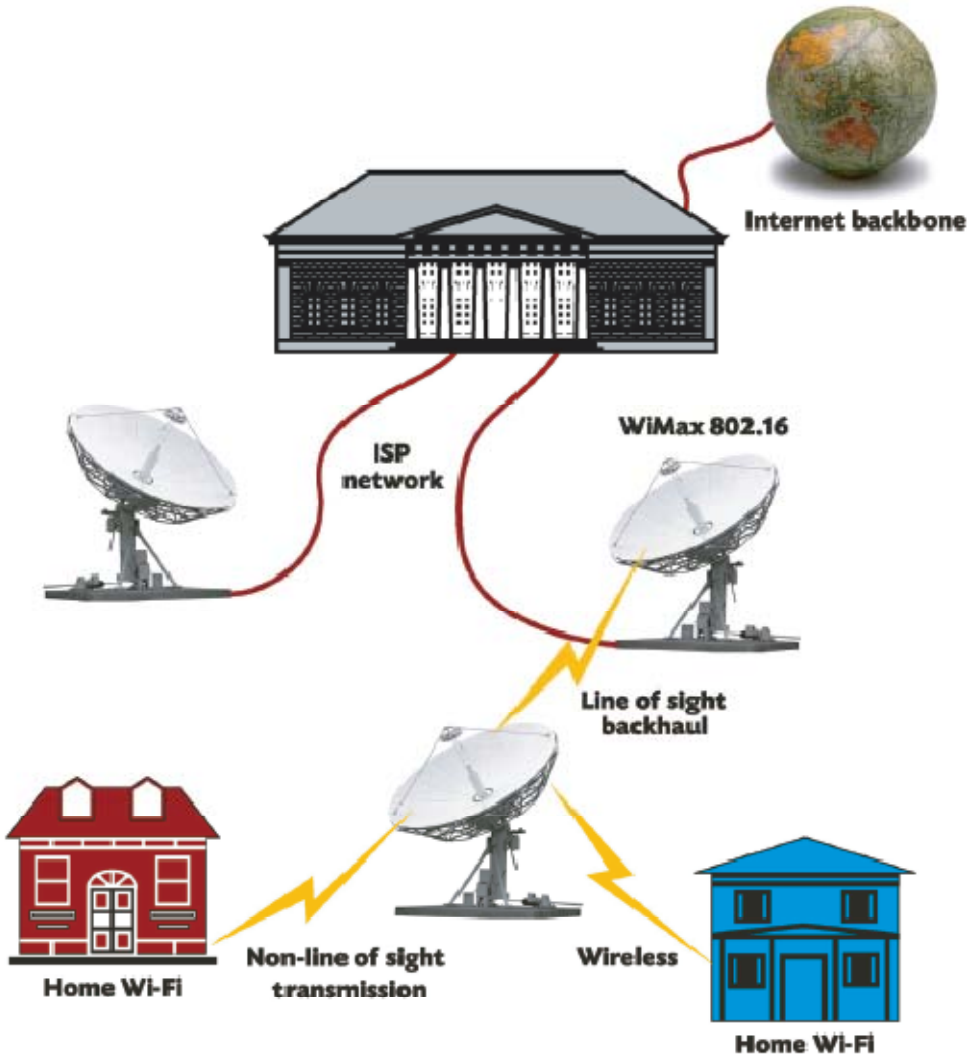


TIME	PLACE: Same	PLACE: Different
Same	A decision room GDSS (see Chapter 12) Management cockpit (see Chapter 11) Whiteboard Other real-time collaboration (RTC) tools	Videoconferencing Instant messenger Screen sharing Whiteboard Chat room Internet telephony Other RTC tools
Different	Multishift control center E-mail Workflow	E-mail Bulletin board Web-based call center Workflow GDSS Autoresponder (Chapter 12)

Finding Information



The Dis-connected Connected



Managerial Issues

- **Organizational Impacts:** Changes in Communication forms
- **Future of Technology Support:** Movement toward more collaboration
- **Extending Organizational Boundaries:** Growing Reach of Organizations
- **Virtual Work:** Dispersed Organizations and the worker
- **Single view of the Truth:** improving information integrity
- **Social and Ethical Issues**

Chapter 4

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