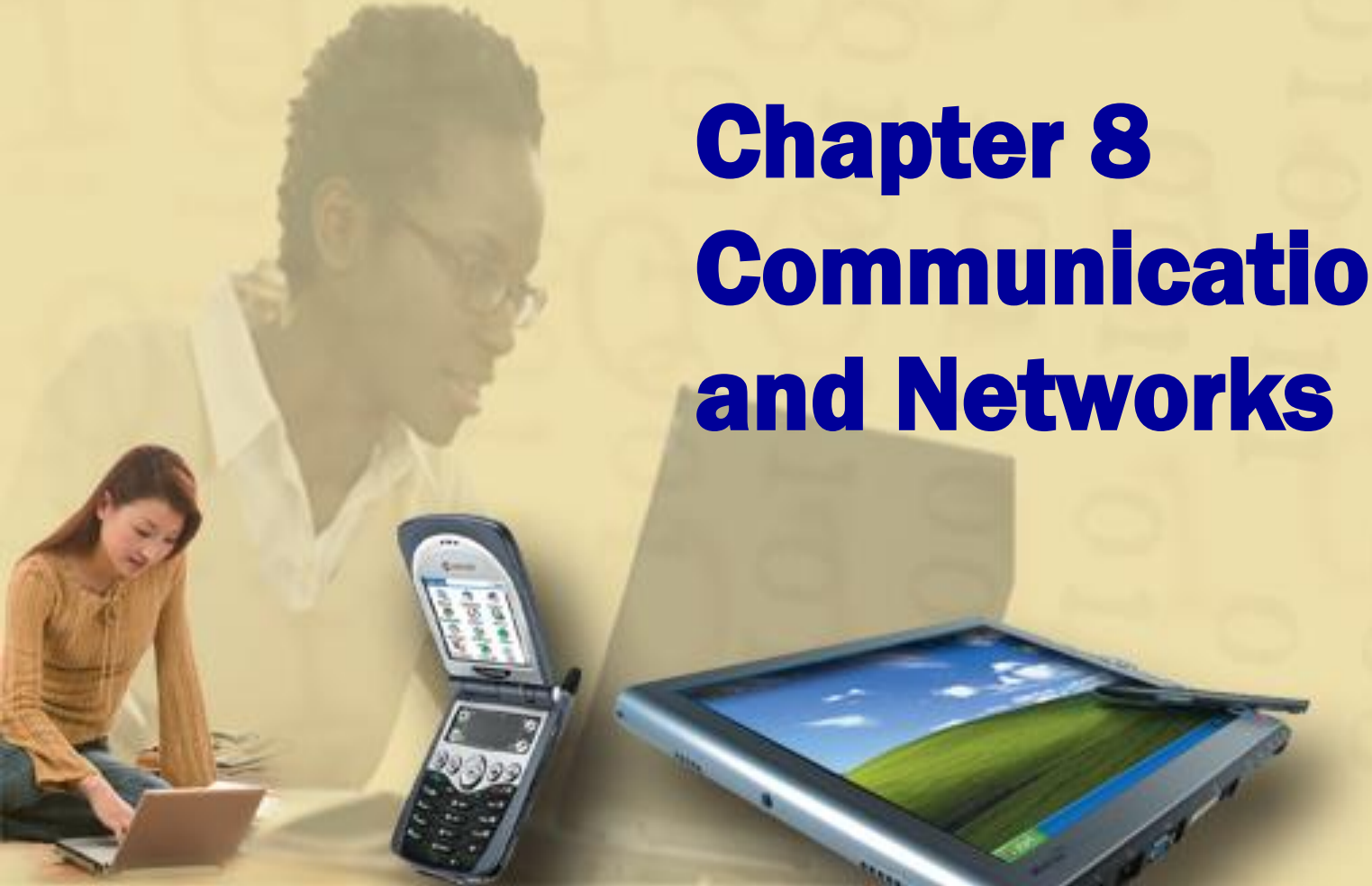
Discovering Computers

FUNDAMENTALS, Second Edition



Chapter 8
Communications and Networks

Today

- Group work
- Review the 6 parts of the IT model
- Communications and networks
- Discussion

Think about it…

Imagine a traveling business person. This person's company has its main office in Philadelphia. The business has other locations in Boston, Washington DC, and Chicago. This person needs to make contact with people at each location at least once per month.

- How does this business person use computer networks and communications?
- Name some of the communications this person would use.

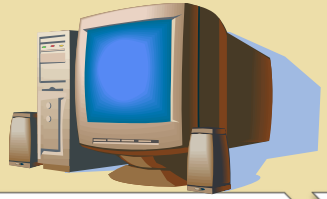
Uses of Computer Communications

What are some uses of communications technology?



Next

What is needed for successful communications



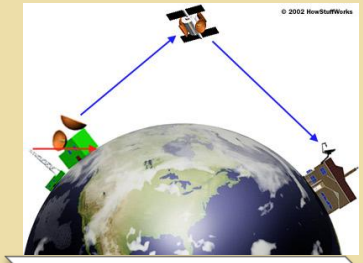
Sending Device

- **initiates instruction** to transmit data, instructions, or information



Communication Device

- Connects the sending device to the communications channel



Communication channel

- **Media** on which data, instructions, or information travel



Communication device

- Connects the communications channel to the receiving device



Receiving device

- **accepts transmission** of data, instructions, or information

Sending and receiving devices

What type of data / information would be received on each of the following?





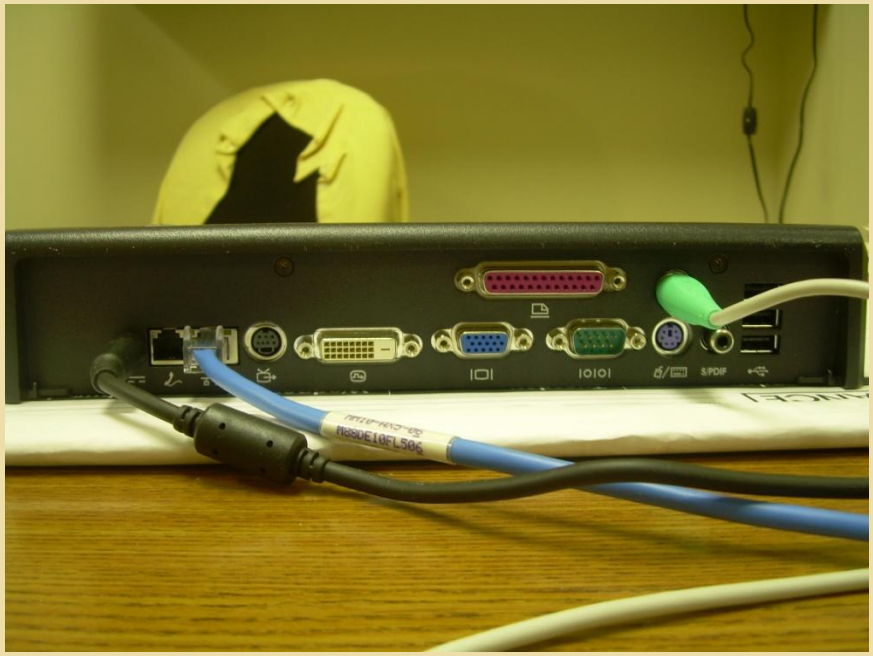








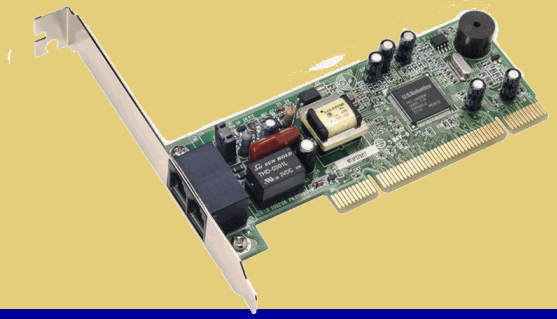
Communications Devices











Communications Devices

What is a wireless modem?

- Allows access to the Web wirelessly from a notebook computer, a PDA, a smart phone, or other mobile device
- Typically use the same waves used by cellular telephones

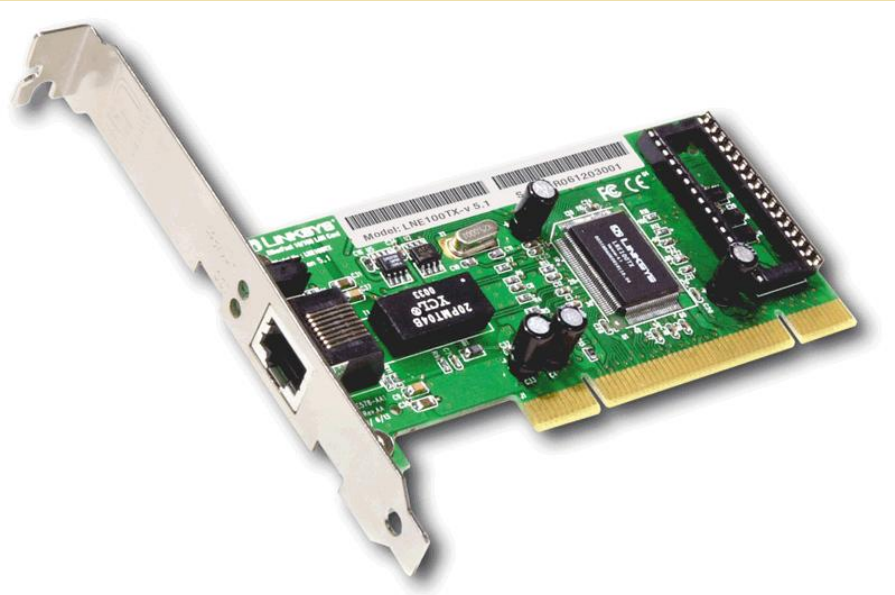


Next

Communications Devices

What is a network card?

- Adapter card, PC Card, or compact flash card that enables computer or device to access network





p. 315 Fig. 8-21

Next

Communications Devices

What is a wireless access point?

- Central communications device that allows computers and devices to transfer data wirelessly among themselves or to wired network



Next

Communications Devices

What is a router?

- Connects computers and transmits data to correct destination on network
- Routers forward data on Internet using fastest available path



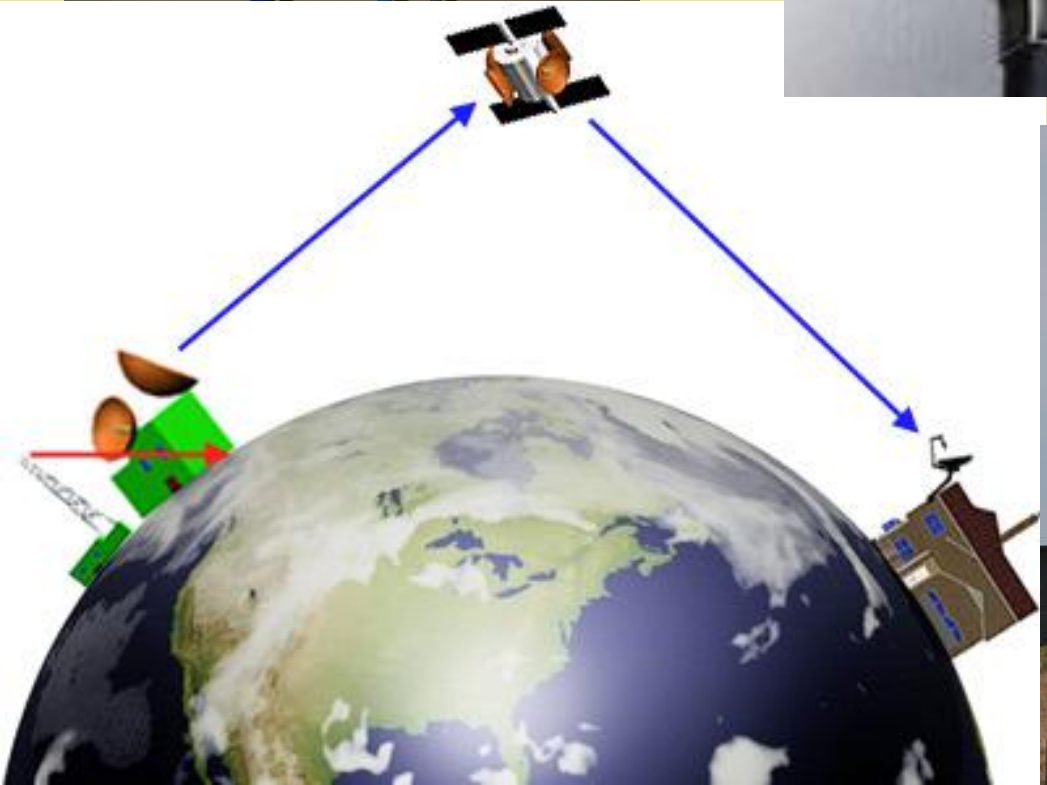
p. 315 Fig. 8-22

Next

Communications channels









Networks

What is a network?

- Collection of computers and devices connected via communications devices and transmission media

What is a local area network (LAN)?

- Network in limited geographical area such as home or office building
  - Metropolitan area network (MAN) connects LANs in city or town



Click to view Web Link,
click Chapter 8, Click Web Link
from left navigation,
then click Local Area Networks
below Chapter 8

Next

Networks

What is a wide area network (WAN)?

- Network that covers large geographic area using many types of media
- Internet is world's largest WAN



p. 304 Fig. 8-8

Next

Networks

What is a client/server network?

- One or more computers act as server and other computers, or clients, access server



p. 305 Fig. 8-9

Next

Networks

What is a peer-to-peer network?

- **Simple network that connects fewer than 10 computers**
- **Each computer, or peer, has equal capabilities**



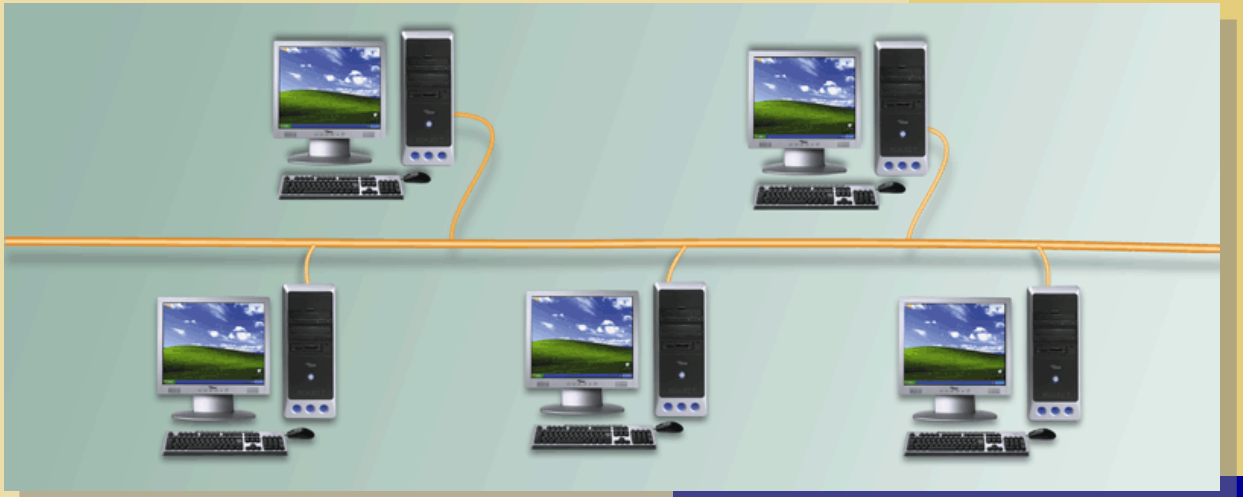
p. 305 Fig. 8-10

Next

Networks

What is network topology?

- **Layout of devices in a network**
  - Popular topologies are bus, ring, and star
- **Bus network**
  - All computers and devices connect to a central cable, or bus



p. 306 Fig. 8-12

Next

Networks

What is a ring network?

- Cable forms closed ring, or loop, with all computers and devices arranged along ring
- Data travels from device to device around entire ring, in one direction



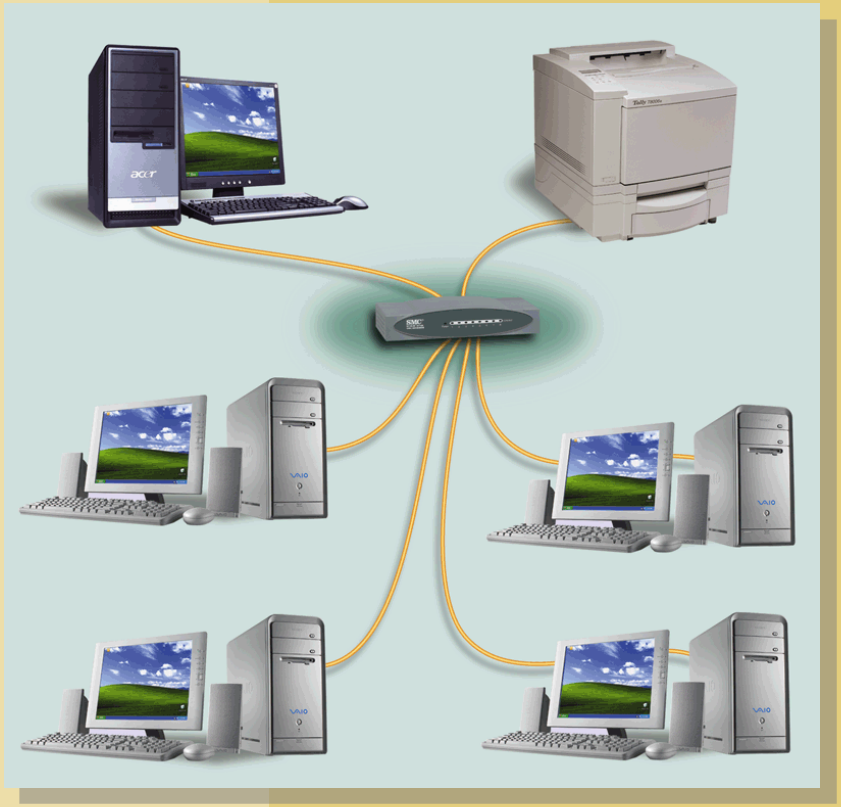
p. 307 Fig. 8-13

Next

Networks

What is a star network?

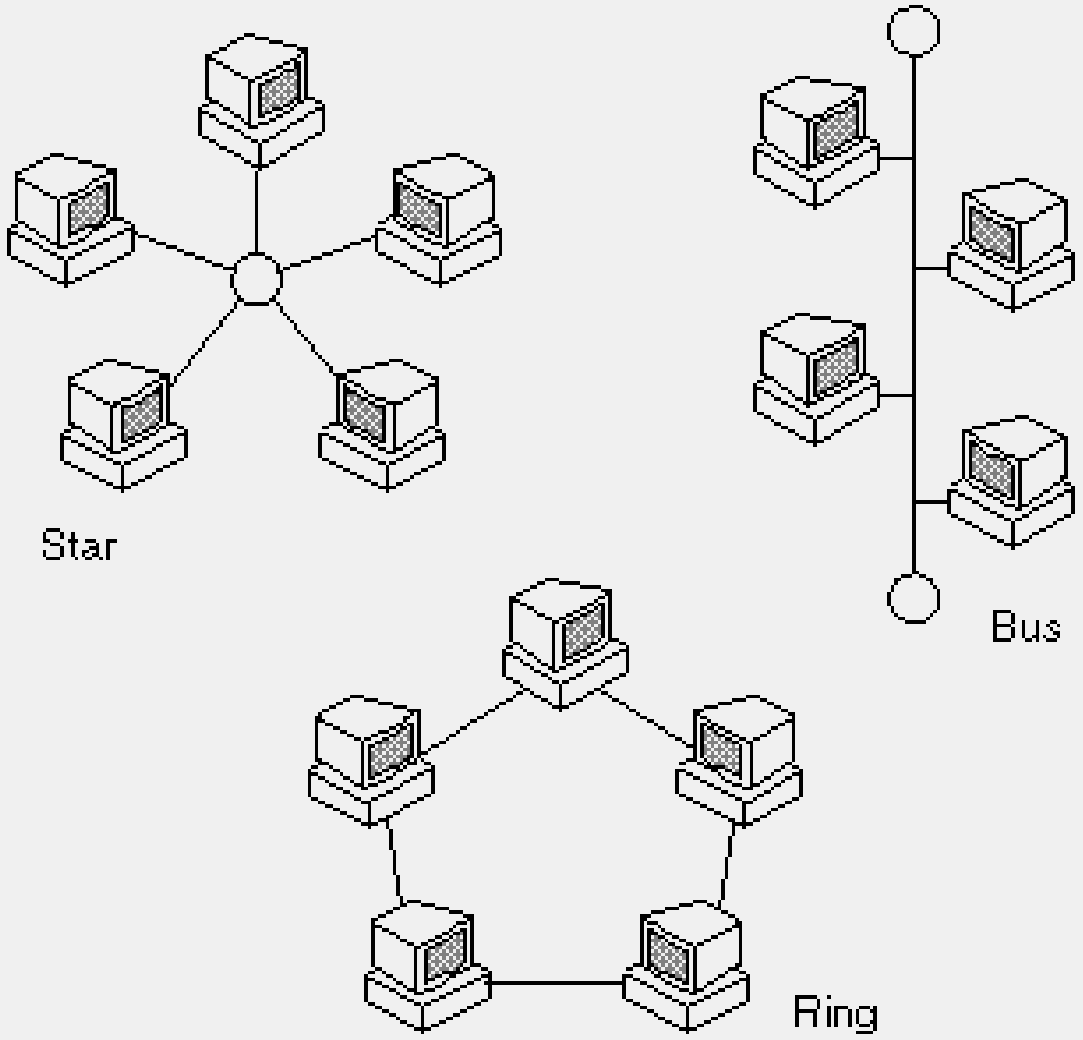
- All devices connect to a central device, called hub
- All data transferred from one computer to another passes through hub



p. 307 Fig. 8-14

Next

Network Topologies



Home Networks

What is a home network?

- **Multiple computers connected in home**
- **Several types of home networks**
  - **Ethernet** — connect computers via cable
  - **Powerline cable** — use electrical lines in house
  - **Phoneline** — use telephone lines
  - **HomeRF (radio frequency)** — wireless



Click to view Web Link, click Chapter 8, Click Web Link from left navigation, then click Home Networks below Chapter 8

p. 316 Fig. 8-23

Next

Video: Keep Tabs on Your Pets

Discover how to improve the odds of recovering a lost or stolen pet



low quality
(click to start)

high quality
(click to start)

Next

Discussion

You are on the road and need to call home. You dial your cellular telephone just as you pass a Pizza Hut. What are the first words you hear? “The Best Pizza Under One Roof.” Today’s technology makes it possible to deliver **targeted advertising** in all sorts of new ways. WindWire and DoubleClick, for example, both have wireless marketing and advertising networks that deliver targeted advertisements, coupons, and promotions to leading wireless Internet devices, including cellular telephones, PDAs, and two-way pagers.

- Will American users willingly accept wireless advertisements sent to them over cellular telephones and other mobile devices?
- What inducements might convince someone to accept the messages?
- Would you accept the advertising in return for a free service?
- How would you feel if the advertisements were targeted at your personal profile?