

MIS

CHAPTER 7

THE INTERNET, INTRANETS, AND EXTRANETS

Warriors

6%

catapillar

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six major roles and goals of IT

- ▶ 1. Increase employee productivity by reducing time, errors and costs using
- ▶ 2. Enhance decision making
- ▶ 3. Improve team collaboration
- ▶ 4. Create business partnerships and alliances
- ▶ 5. Enable global reach all over the world taking into consideration the culture of each nation or society.
- ▶ 6. Facilitate organizational transformation as the organization evolves and responds to the ever-changing marketplace.

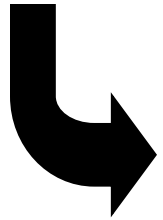
Top ten things I do with a computer

- ▶ 1.
- ▶ 2.
- ▶ 3.
- ▶ 4.
- ▶ 5.
- ▶ 6.
- ▶ 7
- ▶ 8
- ▶ 9
- ▶ 10

Key Terms

Telecommunications

Transmission of all forms of communication including digital data, voice, fax, sound, and video from one location to another over some type of network

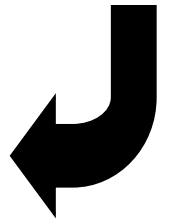


Networks

A group of computers and peripheral devices connected by a communication channel capable of sharing information and other resources among users

Bandwidth

Is the carrying capacity of a telecommunications network. (i.e. the size of the telecommunications channel or *pipeline*)



The Internet and the World Wide Web

► Internet

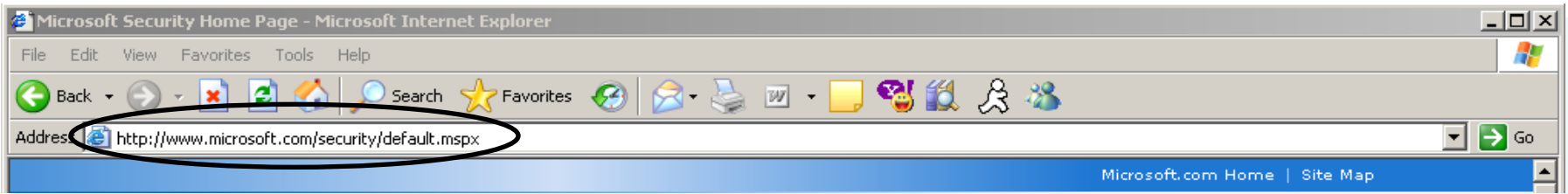
- Worldwide collection of millions of computers and networks
- No one actually owns or runs the Internet
- Started in 1969 as a U.S. Department of Defense project called **Advanced Research Projects Agency Network (ARPANET)**
- Evolved into National Science Foundation Network (NSFNET) in 1987

The Internet and the World Wide Web (cont'd.)

- ▶ Internet backbone
- ▶ World Wide Web (WWW, or “the Web”)
- ▶ Hypermedia
- ▶ Hypertext
- ▶ How does the internet work?

Warriors

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Domain

- Identifies the Website (host)
- Comes in many **suffixes** such as:
 - .edu (educational institutions)
 - .org (organizations; non-profit)
 - .mil (military)
 - .net (network organizations)

Example: microsoft.com

IP Address

- Each **domain** is associated with one or more **IP addresses**
- Format: a 32-bit address written as 4 numbers (from 0-255) separated by periods

Example: 1.160.10.240

(URL) Uniform Resource Locator

- Identifies particular Web pages within a domain

Example: <http://www.microsoft.com/security/default.msp>

What Is HTML?

- ▶ Hypertext Markup Language (HTML)
 - Language used to create Web pages
- ▶ Structure for an HTML document:

<HTML>

<HEAD>

(Enter the page's description.)

</HEAD>

<BODY>

(Enter the page's content.)

</BODY>

</HTML>

Navigational Tools, Search Engines, and Directories

- ▶ **Navigational tools**
 - Graphical Web browsers
- ▶ **Search engines**
 - Google
- ▶ **Directories**

Internet Services

- ▶ E-mail
- ▶ Newsgroups and discussion groups
- ▶ Internet Relay Chat
- ▶ instant messaging,
- ▶ Internet telephony

E-mail

- ▶ One of the most widely used services on the Internet
- ▶ Main types
 - Web-based e-mail
 - Client-based e-mail
- ▶ E-mail programs include:
 - Folders for organization
 - Address books and distribution groups
 - Spell checkers
 - Delivery notification

Newsgroups and Discussion Groups

▶ Discussion groups

- Formed for people to exchange opinions and ideas on a specific topic
- Group members can post messages or articles that others in the group can read

▶ Newsgroups

- Typically more general and can be established for any topic
- Allow people to get together for fun or for business purposes

Instant Messaging

- ▶ **Internet Relay Chat (IRC)**

- Enables users in chat rooms to exchange text messages with people in other locations in real time

- ▶ **Instant messaging (IM)**

- Service for communicating with others via the Internet in a private “chat room”
- Many IM applications are available

Internet Telephony

▶ Internet telephony

- Using the Internet rather than the telephone network to exchange spoken conversations

▶ Voice over Internet Protocol (VoIP)

- Requires high-speed Internet connection and microphone or headset
- International and other long-distance calls are much less expensive
- Used to route traffic starting and ending at public switched telephone network phones
- Call quality has been improving

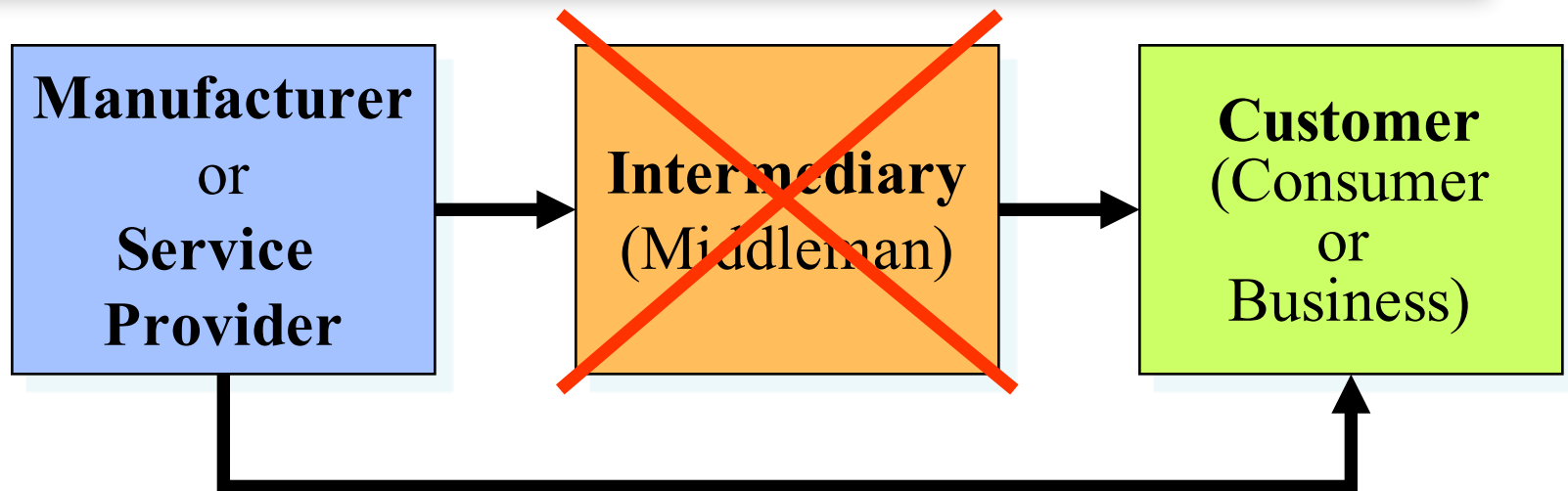
Web Applications

- ▶ Services and products for a wide range of customers at more competitive prices and with increased convenience
- ▶ Can be used with minimum costs

Impact of the Web: Disintermediation

Disintermediation

- Removal of the intermediary (middleman) in a sale.
- Companies can sell directly to customers (retail or wholesale) without assistance using the Internet



Web Services

- ▶ Tourism and Travel
- ▶ Publishing
- ▶ Higher Education
- ▶ Real Estate
- ▶ Employment
- ▶ Financial Institutions
- ▶ Software Distribution
- ▶ Healthcare
- ▶ Software Distribution
- ▶ Politics

Tourism and Travel

- ▶ Travel Web sites allow customers to book tickets for plane trips and cruises, etc.
- ▶ InfoHub.com (<http://infohub.com/>)
 - Specialty travel are offered
- ▶ Other examples of sites that offer all types of tourism and travel services:
 - Expedia.com, Travel.com, Travelocity. com, Priceline.com, Hotels.com, and Yahoo! Travel

Publishing

- ▶ Major publishers in the United States and Europe offer Web sites with:
 - Descriptions of forthcoming books
 - Sample chapters
 - Online ordering
 - Include search features



Higher Education

- ▶ Most universities have Web sites offering:
 - Information about departments, programs, faculty, and academic resource
 - Virtual tours of the campus
- ▶ Online degree programs and
 - Possible for students who couldn't attend school otherwise to enroll in classes

Real Estate

- ▶ Real estate Web sites
 - Provide millions of up-to-date listings of homes
- ▶ Buyers and sellers can
 - Review neighborhoods, schools, and real estate prices
- ▶ Customers can
 - Find realtors and brokerage firms and learn home-buying tips
- ▶ Major real estate Web sites:
 - Remax (www.remax.com), Century 21 (www.century21.com), Prudential (www.prudential.com), and ERA (www.era.com).

Employment

▶ Services available:

- Expert advice and tools for managing your career
- Resume assistance, including tools for creating professional-looking resumes
- Job search tutorials
- Posting and distributing resumes
- Job alerts
- Searches by company, industry, region, or category
- Announcements of job fairs
- Career tests to see what career is right for you
- Salary calculators

Financial Institutions

- ▶ Online banking services
- ▶ E-mail to communicate with customers and send account statements and financial reports
- ▶ Helps banks reduce the time and costs of communicating via phone
- ▶ Consumer acceptance has been slow
- ▶ Banking services available via the Internet

Software Distribution

- ▶ Vendors distribute software on the Internet as well as drivers and patches
 - Antivirus updates
 - Small, fast, and easy to download
- ▶ Large programs not distributed via Internet
- ▶ Online copyright-protection schemes

Healthcare

- ▶ Possible benefits of Internet use in healthcare:
 - Store patient records on the Internet
 - Accessible from one central location
 - Potential problems with information privacy, accuracy, and currency
 - Telemedicine (<http://telemedtoday.com>)
 - Enables medical professionals to conduct remote consultation, diagnosis, and conferencing
 - Telepresence surgery
 - Online prescription drugs

Politics

- ▶ Most political candidates now make use of Web sites
 - Announcing platforms
 - Publicizing voting records
 - Notices of appearances and debates
 - Fundraising
- ▶ Possible use for legislators voting online
 - Security issues

Intranets

Intranets

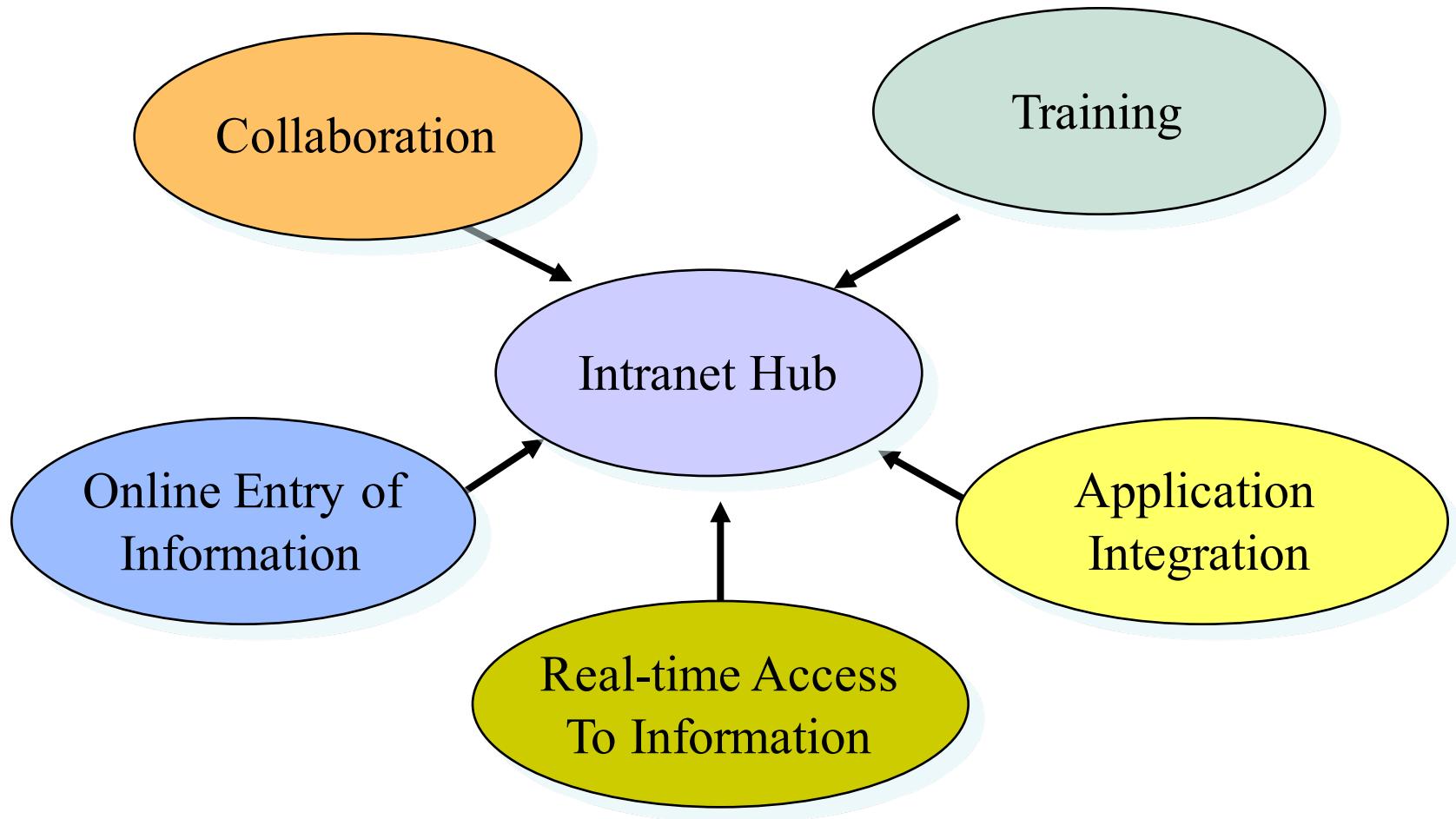
- An **internal, private** network using Web technologies to **securely** transmit information within the organization.
- This **private** internal Web **limits** viewing **access** to authorized users within the organization

Intranet Benefits

- Improved information access to authorized user
- Improved timeliness and accuracy of information
- Global reach allowing employees access from anywhere
- Cross-platform integration
- Low cost deployment
- Positive return on investment



Intranet Applications



Extranets

Extranets

- secure networks that provide customers, suppliers, and employees with access to internal systems
- replaced EDI for smaller firms

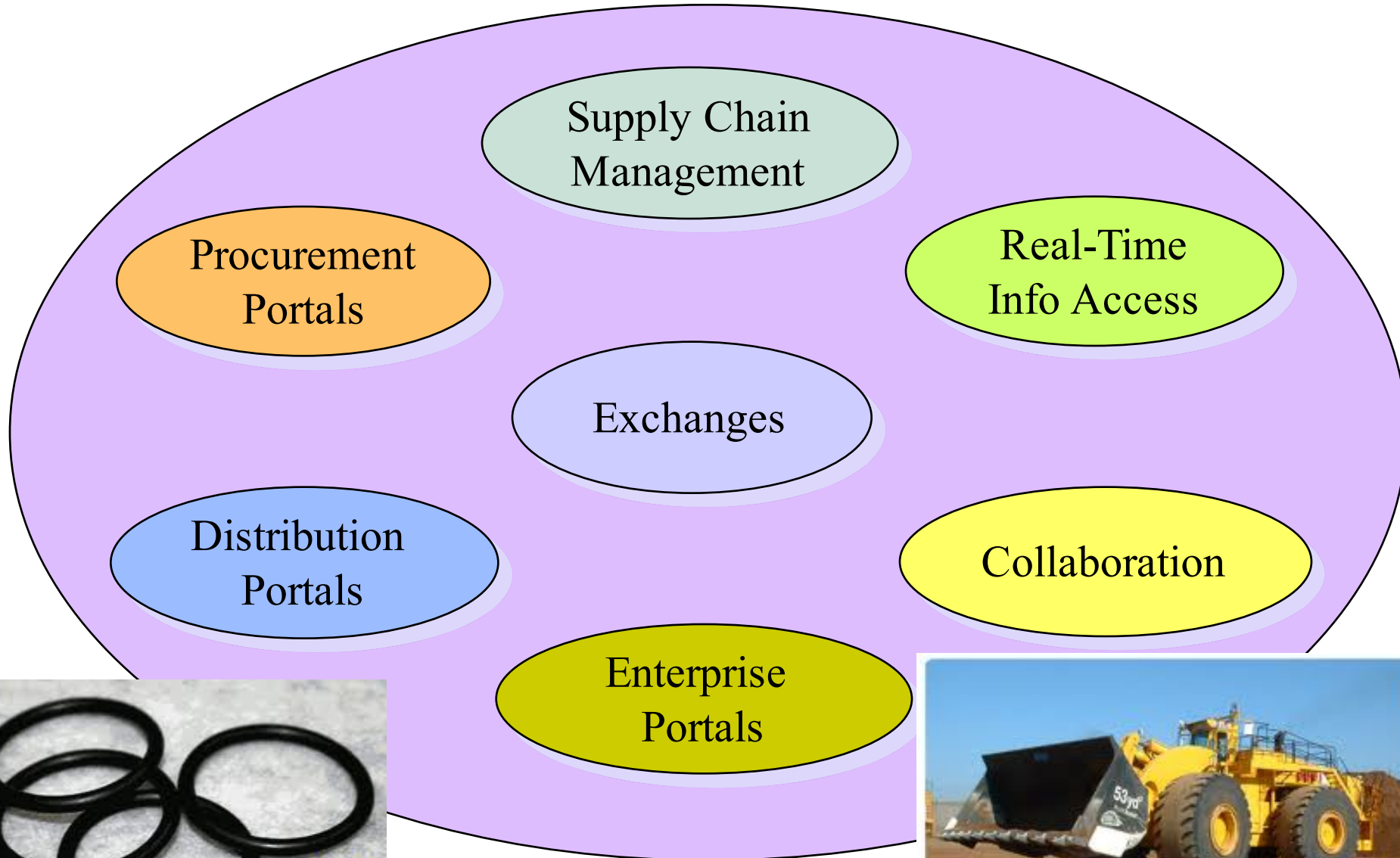
Extranet Benefits

- timeliness & accuracy of communications, reducing errors & misunderstandings
- Allows central management of documents allowing single updates
- Uses standard web protocols
- Easy to use, requires little training
- Used to automate transactions, reducing cost and cycle time



Extranet Applications

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New Trends: The Web 2.0 and 3.0 Eras

▶ Web 2.0

- Trend of Web applications that are more interactive than traditional Web applications
- Collaboration or e-collaboration

► Blogs

- Short for “Weblog”
- Journal or newsletter that’s updated frequently and intended for the general public
 - Such as Blogger.com
- Wikis
 - Allows users to add, delete, and sometimes modify content
 - Wikis have caught on at many companies

- ▶ Social Networking Sites

- Facebook , twitter

- ▶ RSS Feeds

- “Really simple syndication”

- ▶ Podcasting

- Electronic audio file posted on the Web for users to download to their mobile devices

RSS Feeds

- ▶ “Really simple syndication”
- ▶ Fast, easy way to distribute Web content in Extensible Markup Language (XML) format
- ▶ XML
 - Flexible method for creating common formats for information
 - Tags represent the kind of content being posted and transmitted
 - Defines data with a context

Podcasting

- ▶ Electronic audio file posted on the Web for users to download to their mobile devices
- ▶ Has a specific URL and is defined with an XML item tag
- ▶ Usually collected by an “aggregator”
 - iTunes or iPodder
- ▶ Users can subscribe to a podcast

The Internet2

- ▶ Collaborative effort involving more than 200 U.S. universities and corporations to develop advanced Internet technologies and applications
 - For higher education and academic research
- ▶ **Gigapop**
 - Local connection point-of-presence
 - Main function is the exchange of I2 traffic with a specified bandwidth
- ▶ Relies on the NSFNET and MCI's very high-speed backbone network service

The Internet2 (cont'd.)

- ▶ Applications of Internet2 include:
 - Learningware
 - Digital Library
 - Teleimmersion
 - Virtual laboratories

Summary

- ▶ Overview and brief history of the Internet and the World Wide Web
- ▶ Navigational tools, search engines, and directories
- ▶ Internet services
 - E-mail, newsgroups, and instant messaging
- ▶ Web applications and the service industry
- ▶ Intranets and extranets
- ▶ Web 2.0 and Web 3.0