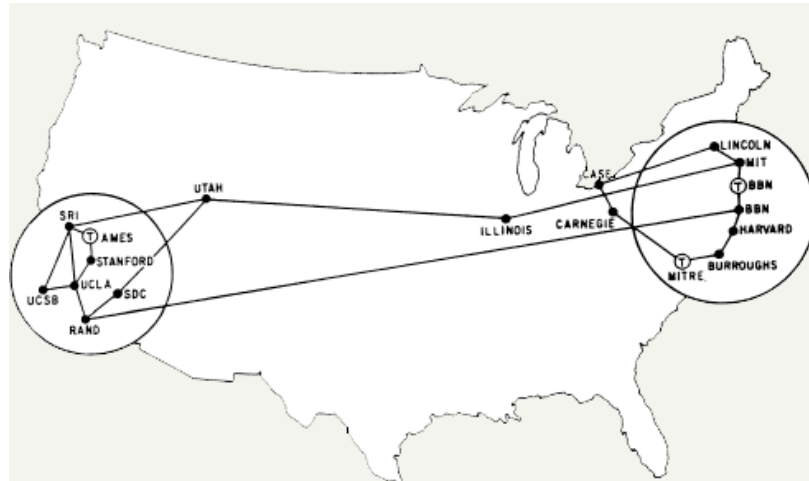# Chapter 2A

The Internet and the World Wide Web

The Internet's History

- At about 10:30 PM on October 29th, 1969, a connection was established over a 50 kbps line provided by the AT&T telephone company, and a two node Internet was born. It was between UCLA and the computer firm, BBN.
- It was the first wide area packet switching network
- 1969 – The ARPANET
  - Developed by the Department of Defense
  - Connected universities and defense bases

1973- first connection to
Europe

ARPANET 1973

The Internet's History

- Mid-1980s – NSFNet
  - Network between supercomputers
  - The Internet was comprised of links between ARPANET, NSFNET and other research networks
  - No commercial traffic allowed

- 1990s
  - ARPANET shut down
  - NSFNet abandoned
  - Commercial networks take over

Abilene

- An advanced Internet backbone available by subscription only
- The "second Internet"
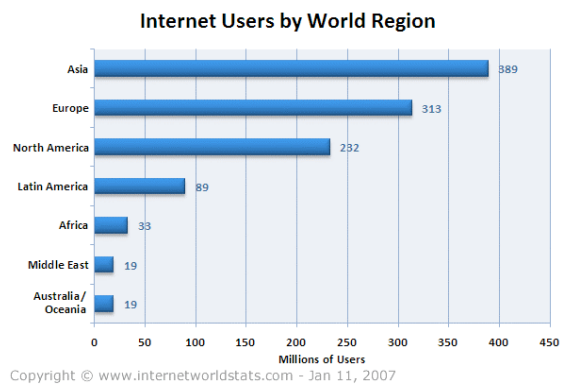- For $21,000 you can be a basic member!
- http://abilene.internet2.edu/

Today and the Future

- 100,000 new web sites per month
- More than 68% of U.S. households online
- Access is available throughout the U.S.
- Eventually access will be global

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Internet Growth

Internet Users by World Region

Region	Millions of Users
Asia	389
Europe	313
North America	232
Latin America	89
Africa	33
Middle East	19
Australia/Oceania	19

Millions of Users

8

- World total usage as of 1/11/07 1,093,529,692*
- North America's portion 232,057,067 (69.4% penetration)*
- The vast majority of sites are in English
- Needed – more web masters!

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The Internet's Major Services

- The World Wide Web (WWW)
  - Developed in 1993 by Tim-Berners Lee
  - Allowed connection of documents
  - Required a browser to read documents
- Electronic mail (e-mail)
  - Instantaneous transmission of documents

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The Internet's Major Services

- News
  - Often called newsgroups
  - Electronic discussions on several topics
- File Transfer Protocol (FTP)
  - Sends and receives files

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The Internet's Major Services

- Chat
  - Public real time conversation
- Instant messaging
  - Private real time conversation
- Peer-to-peer services
  - Allows sharing of files among users
  - Napster and Kazaa are examples
  - Illegal to share copyrighted material

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Accessing The Internet

- Internet Service Provider (ISP)
  - Company that provides Internet access
- Dialup
  - Connects to Internet through phone line
  - Modem connects to the phone line
  - Slow connection

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Accessing The Internet

- High-speed access
  - Connect through a special line
  - 2 – 25 times faster than dialup
  - DSL, Cable, T1 are common

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Understanding the Internet

- The Internet allows accessing resources
- The Web simplifies the Internet
- The Web connects documents
  - Hypertext creates links between documents
  - Documents are stored on a web server
  - HTTP delivers documents

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Understanding the Internet

- Web site is a collection of documents
  - Document is a web page
  - Pages are published to the web
- Hypertext Markup Language
  - Creates web pages
  - Describes how pages should look
  - Content enclosed in tags
  - <tag>content</tag>

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Understanding The Internet

- Browsers
  - Read and translate the HTML
  - Display web content
- Uniform Resource Locator (URL)
  - Address of a web page
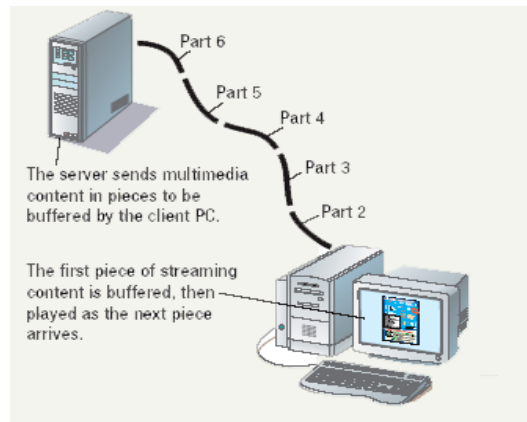
http://www.loc.gov/exhibits/treasures

Understanding The Internet

- Helper applications
  - Plug-ins
  - Enhance a browser's functionality
- Streaming audio and video
  - Sends the file in small chunks
  - Chunks downloaded while others play

Streaming Audio

Part 6
Part 5
Part 4
Part 3
Part 2

The server sends multimedia content in pieces to be buffered by the client PC.

The first piece of streaming content is buffered, then played as the next piece arrives.

Using a Browser And The WWW

- Browser starts on the home page
- Navigating the web
  - Enter a URL in the browser
  - Click a link
  - Links are typically blue underlined words
  - Image maps are picture links
- When finished, close the browser

Searching the Web

- The Web is unorganized
- Directories
  - Categorize the Internet
- Search engines
  - Find sites by keyword

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Searching the Web

- Site searches
  - Large sites have an internal search
- Metasearch sites
  - Search several web sites at once
- Sponsored links
  - Sites pay for better search results

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Search Techniques

- Quote the exact phrase
- Use the keyword AND
- Use the keyword NEAR
- Avoid common words
- Use the site's advanced tools

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Chapter 2A

End of Chapter

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Chapter 2B

E-mail and Other Internet Services

Using E-mail

- Exchanges messages with other users
  - Messages reach destination in seconds
  - Mail waits in mailbox until opened
  - Text, audio, pictures and video messages

Using e-mail

- Configuring e-mail
  - e-mail clients read and send e-mail
  - Outlook and Eudora are common
    - Need name of mail server
    - Need username and password
  - Hotmail and Yahoo are online clients
    - No configuration needed

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Using e-mail

- e-mail addresses
  - Unique address
  - Allows sending and receiving
  - Username@isp.com
- Listserv
  - Lists of e-mail addresses
  - Each address gets the e-mail

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Using e-mail

- e-mail actions
  - Create a new message
  - Send an attachment
  - Reply to e-mail
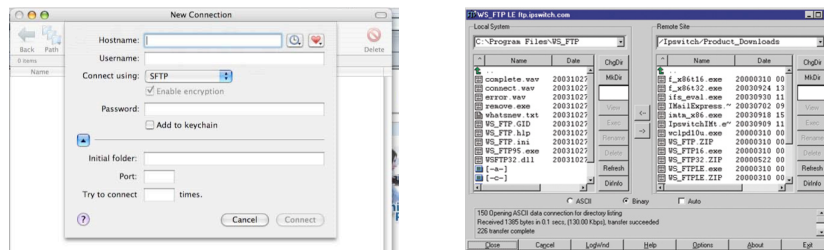 - Open attachments
  - Forward an e-mail

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Other Internet Features

- News
  - Public board devoted to a topic
  - Thousands of topics available
  - Messages are called threads
  - Users can create threads
  - Users can comment on threads
  - Need a news reader program

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Other Internet Features

- File Transfer Protocol (FTP)
  - Copies files from a remote computer
  - FTP client is needed
  - Some sites require a password

Fetch - Mac FTP Client

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Other Internet Features

- Internet Relay Chat (IRC)
  - Real time communication system
  - Multi-users with many channels (rooms)
  - Channels are dedicated to a topic
  - All users can read the comments

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Other Internet Features

- Instant messaging (IM)
  - Private, real-time communication
  - Message sent only to listed users
  - Buddy lists contain IM names

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Other Internet Services

- Online services
  - Company that offers access by subscription
  - Banks, games and research
  - America Online offers content and Internet

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Other Internet Services

- Peer-to-peer (P2P) services
  - User computers are connected together
  - No centralized organization
  - Users can communicate directly
  - Users can share files

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