Chapter 7

The Internet
Objectives

1. Recognize the importance of the Internet.
2. Compare types of Internet connections.
3. Compare popular Web browsers.
4. Demonstrate how to navigate the Web.
5. Discuss how to evaluate the credibility of information found on the Web.
Objective 1: Overview

Internet Timeline

1. Discuss the origins of the Internet
2. Discuss the impact of hypertext and hyperlinks
3. Discuss Internet2 and why it was created

Key Terms

- ARPANET
- Hyperlink
- Hypertext
- Internet (net)
- Internet2
- Internet backbone
- Internet Exchange Points
- World Wide Web
Brief History of the Internet

- 1957 – Soviet Union launches Sputnik
- 1960s – U.S. Department of Defense develops the ARPA project
  - ARPANET – Advanced Research Projects Agency Network
  - Becomes the Internet
  - Multiple pathways for information to travel
  - Losing part of the system would not cripple the entire project
Brief History of the Internet

- ARPANET’s 4 nodes:
  - UCLA
  - SRI
  - University of Utah
  - UCSB

- 1979 – NSF created CSNET
  - Connected universities
  - Used ARPANET technology
Brief History of the Internet

**Backbone** – high-speed connection points between networks

- Mid-1980s – NSF created NSFNET
- Late 1980s – NSFNET was the primary Internet backbone
- 1995 – NSF backbone was decommissioned and privatized
- Today – backbone is composed of Internet Exchange Points around the world
The Internet

The Physical Entity: A Network of Computers

- IM
- Email
- VoIP
- FTP
- P2P
- WWW
The Internet
The Physical Entity: A Network of Computers

- **Hypertext:**
  - Text that links to other text

- **Hyperlinks:**
  - Provide navigation through pieces of information

- 1991 – Tim Berners-Lee and CERN released the hypertext system
- 1992 – A million Internet nodes; commercial sites appeared
- 1993 – Mosaic GUI browser released; becomes Netscape
- 1995 – AOL, Prodigy, and CompuServe offer Internet service
The Internet
The Physical Entity: A Network of Computers

World Internet Penetration Rates by Geographic Regions - 2011

- North America: 78.6%
- Oceania / Australia: 67.5%
- Europe: 61.3%
- Latin America / Caribbean: 39.5%
- Middle East: 35.6%
- World, Avg.: 32.7%
- Asia: 26.2%
- Africa: 13.5%

Source: Internet World Stats - www.internetworldstats.com/stats.htm
Penetration Rates are based on a world population of 6,930,055,154 and 2,267,233,742 estimated Internet users on December 31, 2011.
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Internet 2 (I2)

Designed for education, research, and collaboration

- Colleges
- Universities
- Other educational institutions
- Museums
- Art galleries
- Libraries
- Hospitals
Does your school participate in the I2 project? Ask your librarian or instructor. If yes, what features does your school use? If not, why not?
Objective 2: Overview

Get Connected

1. Discuss methods to connect to the Internet
2. Compare and contrast Internet connection methods
3. Discuss wireless connection methods

Key Terms

- Broadband
- Cable Internet access
- Dial-up
- DSL
- Fiber-to-the-Home (FTTH)
- Hotspot
- Internet service provider (ISP)
- LTE (Long Term Evolution)
- Municipal WiFi
- Satellite Internet access
- WiFi
- WiMAX Mobile Internet
Internet Connection

- Internet service provider (ISP)
  - Dial-up
  - Broadband
  - Wireless
  - Wireless mobile
  - Satellite
# Internet Connection: Wired

<table>
<thead>
<tr>
<th>Dial-up</th>
<th>Broadband Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cable</td>
</tr>
<tr>
<td>Least expensive</td>
<td>Offered by cable TV providers</td>
</tr>
<tr>
<td>Uses regular phone line</td>
<td></td>
</tr>
<tr>
<td>$10-$30 per month</td>
<td>Cable speeds range from 1 Mbps – 50 Mbps</td>
</tr>
<tr>
<td>Very slow, maxing out at 56 Kbps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DSL</td>
</tr>
<tr>
<td></td>
<td>Uses phone line to carry digital signal</td>
</tr>
<tr>
<td></td>
<td>Average speeds of 384 Kbps – 7 Mbps</td>
</tr>
<tr>
<td></td>
<td>FTTH</td>
</tr>
<tr>
<td></td>
<td>Fastest broadband alternative</td>
</tr>
<tr>
<td></td>
<td>Speeds top out at 300 Mbps</td>
</tr>
<tr>
<td></td>
<td>Can carry Internet, phone, and TV</td>
</tr>
<tr>
<td></td>
<td>Uses fiber optic cables</td>
</tr>
<tr>
<td></td>
<td>Limited areas of availability</td>
</tr>
</tbody>
</table>
# Internet Connection: Wireless

<table>
<thead>
<tr>
<th>Wireless Options</th>
<th>LTE</th>
<th>Satellite</th>
<th>Municipal WiFi</th>
</tr>
</thead>
<tbody>
<tr>
<td>4G service</td>
<td></td>
<td>More global and more expensive option</td>
<td>Offered in some cities and towns</td>
</tr>
<tr>
<td>Connects to the Internet via cellular networks</td>
<td></td>
<td>Need a clear view of the southern sky</td>
<td>WiFi hotspots</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weather conditions can affect service</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Considered when other options are not available</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Internet Connection

### Mobile Devices

- Smartphones
- Cell phones
- PDAs
- Video game consoles (Xbox, Wii, PS3)
- Portable media players (iPod, iPad)
- eBook readers (Kindle, Nook)
- Satellite phones
Research two types of Internet access that are available where you live. Create a table like this one to compare features.

<table>
<thead>
<tr>
<th>Provider</th>
<th>Service Type</th>
<th>Speed Upstream/Downstream</th>
<th>Cost</th>
<th>Extras</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Objective 3: Overview

Surf’s Up

1. Define browsers and what they do
2. Compare the following browsers: Internet Explorer, Firefox, Chrome, Safari, and mobile browsers
3. Discuss ways to configure Web browsers

Key Terms
- Add-on
- Home page
- HTML (Hypertext Markup Language)
- Mobile browser (microbrowser)
- Plug-in
- Web browser
- Web page
Web Browsers

- **HTML**
  - Hypertext Markup Language
  - Authoring language that defines structure of Web pages

- **Web browsers**
  - Programs that interpret the HTML
  - Display Web pages
# Web Browsers

<table>
<thead>
<tr>
<th><strong>Internet Explorer</strong></th>
<th><strong>Mozilla Firefox</strong></th>
<th><strong>Google Chrome</strong></th>
<th><strong>Apple Safari</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Released in 1995</td>
<td>Released in 2004</td>
<td>Released in 2008</td>
<td>Most popular browser for Macs</td>
</tr>
<tr>
<td>Leading Web browser</td>
<td>Similar in look to IE</td>
<td>Streamlined interface</td>
<td>Bundled with Mac OS X</td>
</tr>
<tr>
<td>Included with Windows OS</td>
<td>Free and easy to install</td>
<td>Similar to IE and Firefox, but not as many features</td>
<td>Available for Windows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main focus is on speed</td>
<td></td>
</tr>
</tbody>
</table>

**Main focus is on speed**

<table>
<thead>
<tr>
<th><strong>Mobile Browsers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internet Explorer</strong></td>
</tr>
<tr>
<td>Kindle, Blackberry, Android</td>
</tr>
</tbody>
</table>
Browser Features

Menu
Tabbed browsing
Search bar
Address bar
Bookmarks
Mozilla Firefox
Configuring Browsers

- Set the home page
- Set search provider
- Add-ons
  - Additional features
- Plug-ins
  - Third-party programs
- Toolbar
  - Quick access to features
Research the version and market shares of the top five Web browsers. How has this changed since this article was written? Are there any in the current list of five that were not mentioned in this book?
Objective 4: Overview

Navigating the Net

1. Demonstrate how to navigate the Web
2. Understand the parts of a Web address
3. Learn how to create smart searches

Key Terms

- Domain name
- Domain Name System (DNS)
- Home page
- Internet Protocol (IP) address
- Search engine
- Top-level domain (TLD)
- Uniform resource locator (URL)
- Website
Ways to Navigate

- Two ways to navigate
  - Type the URL (uniform resource locator) Web page address
  - Follow hyperlinks in the Web pages
- Website
  - Consists of one or more Web pages
- Home page
  - Main or starting page of a website
Parts of a URL

Protocol

Domain Name or Second-level Domain

Third-level Domain

Top-level Domain (TLD)
The Web Address

- **ICANN**
  - Internet Corporation for Assigned Names and Numbers
  - Coordinates the Internet naming system

- **IP**
  - Internet Protocol
  - Unique numbered address associated with a website

- **DNS**
  - Domain Name System
  - Provides a friendly name instead of an IP address
Searching the Web

- Search engine
  - Database that indexes the Web
- Refine searches with
  - Keywords
  - Advanced search tools
  - Boolean operators
    - AND
    - OR

<table>
<thead>
<tr>
<th>TERMS</th>
<th>SEARCH FILTER/ BOOLEAN OPERATOR</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>eagles</td>
<td>None</td>
<td>216,000,000</td>
</tr>
<tr>
<td>eagles AND birds</td>
<td>AND</td>
<td>32,600,000</td>
</tr>
<tr>
<td>eagles OR birds</td>
<td>OR</td>
<td>818,000,000</td>
</tr>
</tbody>
</table>
Research various search engines. Select two that look interesting and search for the name of your favorite sports team. Did you get the same results? How were they different? Read the About section of the search tool to determine how content is added. You can usually find this link at the bottom of a Web page. What are some of the unique features of each?
Objective 5: Overview

Would I Lie to You?

1. Discuss how to evaluate the credibility of information found on the Web
2. Define user-generated content
3. Discuss the importance of information literacy

Key Terms

- User-generated content
Credibility and the Web

- User-generated content
  - Content written by everyday users
    - Blogs
    - Websites
    - Wikis
    - Social media sites
- It is important to know
  - What is credible
  - How to evaluate the information you find
Credibility and the Web

Considerations:

- When was the resource created or updated?
- Is the information current enough for your topic?
- Are there references given for the resource?
- Is the content primarily opinion?
- Who created the resource?
- Is there evidence that the creator or organization is an expert on this subject?
- Why was the resource put on the Web?
- What is the domain extension?
- Based on the writing style and vocabulary, who is the intended audience?
Compare these two websites based on the guidelines discussed in this article:

- www.choosemyplate.gov
- www.foodpyramid.com