Technology in Action

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Eleventh Edition
Technology in Action

Chapter 3
Using the Internet:
Making the Most of the Web’s Resources
Chapter Topics

- The Internet and How It Works
- Communicating and Collaborating on the Web
- Web Entertainment
- Conducting Business over the Internet: E-Commerce
- Accessing and Moving around the Web
- Searching the Web Effectively
Working and Playing on the Web

• The Internet and How it Works
• Communicating and Collaborating on the Web
• Web Entertainment
• Conducting Business over the Internet: E-Commerce
The Internet and How it Works

- Internet is a network of networks connecting billions of computers globally
The Internet and How it Works:

The Origin of the Internet

- Advanced Research Projects Agency Network (ARPANET)
- Established a secure form of military communications
- Created a means of communication for all computers
The Origin of the Internet

• First communication-1969
• TCP/IP Protocol Developed
  – Vinton Cerf
  – Robert Kahn
The Internet and How it Works:
The Origin of the Internet

• Tim Berners-Lee and Robert Calliau
  – HTTP protocol
  – World Wide Web
  – Web browser

• Original browser only displayed text
  – Mosaic—released in 1993
  – Netscape Navigator evolved from Mosaic
The Internet and How it Works:
How the Internet Works

**STEP 1:** You enter www.amazon.com in your web browser. Your computer is the client requesting information from Amazon’s website.

**STEP 2:** The request is sent to the server via a system of data pathways, similar to a roadway system.

**STEP 3:** Your data flows along the backbone and on to smaller pathways until it reaches its destination, which is the server computer for Amazon’s website.

**STEP 4:** The server returns the requested data to your computer using the fastest pathway, which may be different from the one the request took.

**STEP 5:** The web browser interprets the data and displays it on your monitor.
The Internet and How it Works:

How the Internet Works

• Internet Protocol (IP) address
  – How computers identify each other
  – Websites have unique IP addresses
  – Text versions of IP addresses
    • www.amazon.com—72.21.211.176
Communicating and Collaborating on the Web

- Web 2.0
  - Social web
  - Collaboration tools
    - Social media
      - Google Docs, Facebook, Yelp, YouTube, Pinterest
      - Social networking, blogs, wikis, podcasts, and webcasts
    - E-mail
Communicating and Collaborating on the Web:

Social Networking

• Communicate and share information
  – Facebook
  – Twitter

• Business community
  – LinkedIn
    • Job positions
    • Marketing
Communicating and Collaborating on the Web: Social Networking

• Privacy precautions
  – Keep personal information personal
  – Know your friends
  – Do not post information that is often used as security question to verify identity
  – Use caution when posting images
Communicating and Collaborating on the Web: Social Networking

- Employers and colleges
  - Check out applicants

- People have been fired or expelled because of questionable content
  - Negative comments
  - Inappropriate content about the poster

- Your content is your responsibility
Communicating and Collaborating on the Web:

E-mail

- Primary means of communication
- Written message sent or received
- Asynchronous
- Convenient
- Not private
Communicating and Collaborating on the Web: E-mail

Use CC and BCC sparingly
Include a useful subject
Use spell-checker and proofread
Avoid texting abbreviations
Be concise and to the point
Include a signature line with contact information

To: “John Hoyt” <jhoyt@companyemail.com>
Cc: “Jeffrey Landis” <jlandis@companyemail.com>
Subject: Social media statistics for presentation on June 6

Dear John,
Following up on our recent conversation, please prepare the statistics on our current social media strategy for the presentation on June 6. I've copied Jeff since he may have information you will need.

I'll be working on gathering additional materials regarding our proposed changes to our corporate strategy.

Let's plan on going over the materials together on June 4.

Thanks,
Carolyn

Social Media Strategist
(610) 222 1234
Communicating and Collaborating on the Web: Instant Messaging (IM)

• Communicate in real time
• Proprietary IM services
  – AIM, Google Chat, Windows Messenger, Yahoo! Messenger
• Facebook
  – Chat with “friends”
• Universal chat services
  – Installed: Trillian, Digsby
  – Web-based: Meebo
Communicating and Collaborating on the Web

Wikis

- Wikis: Collaborative web-based documents
  - Wikipedia
  - Google Docs

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Communicating and Collaborating on the Web:

**Blogs**

- Short for weblog
  - Single-author web-based journal
  - Blog Directory: [technorati.com](http://technorati.com)
- Video log (vlog)
  - Uses video as primary content
  - YouTube
Communicating and Collaborating on the Web: **Blogs**

- Create your own blog
  - Blogger
  - Wordpress
  - Tout (video)
Communicating and Collaborating on the Web

Podcasts and Webcasts

• Audio/video files delivered via RSS
• RSS: Really Simple Syndication
• Aggregator
  – Collects RSS content
• Can download and view podcasts on portable media player
Communicating and Collaborating on the Web: 
**Podcasts and Webcasts**

- Webcast
  - Live or one-time event
  - Continuously feeds audio and video content
  - Interactive
Web Entertainment

- Web entertainment includes:
  - Streaming audio and video
  - Internet radio
  - MP3s
  - Interactive gaming
  - smart TV
Web Entertainment

• Multimedia
  – Graphics
  – Audio files
  – Video files

• Streaming media
  – Netflix, Hulu, and video on demand
  – Internet radio: Pandora, Beats, Spotify
Web Entertainment

• Plug-in (or player):
  – Many preinstalled
  – Download free of charge

<table>
<thead>
<tr>
<th>PLUG-IN OR PLAYER NAME</th>
<th>WHERE YOU CAN GET IT</th>
<th>WHAT IT DOES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe Reader</td>
<td>adobe.com</td>
<td>Views and prints portable document format (PDF) files</td>
</tr>
<tr>
<td>Flash Player</td>
<td>adobe.com</td>
<td>Plays animation and movies through web browsers</td>
</tr>
<tr>
<td>QuickTime Player</td>
<td>apple.com</td>
<td>Plays MP3 animation, music, musical instrument digital interface (MIDI), audio, and video files</td>
</tr>
<tr>
<td>Shockwave Player</td>
<td>adobe.com</td>
<td>Plays interactive games, multimedia, graphics, and streaming audio and video on the web</td>
</tr>
<tr>
<td>Silverlight</td>
<td>microsoft.com</td>
<td>Similar to Flash; plays web-based animations and videos</td>
</tr>
<tr>
<td>Windows Media Player</td>
<td>microsoft.com</td>
<td>Plays MP3, WAV, and music files; movies; and live audio and video broadcasts on the web</td>
</tr>
</tbody>
</table>
Web Entertainment

• Tips to keep system running efficiently
  – Delete temporary Internet cache
  – Click Refresh or F5 key to display most recent website content
  – Manually clear Internet cache
Conducting Business over the Internet: E-Commerce

- E-commerce or electronic commerce
- Business-to-consumer (B2C)
- Business-to-business (B2B)
- Consumer-to-consumer (C2C)
- Social commerce
E-Commerce Safeguards

When shopping at home, use a firewall and antivirus software for general computer protection.

Don’t shop on public WiFi networks, as they may contain spyware.

Check for visual indicators such as https:// in the URL, a closed padlock icon, and a green address bar.

Look for third-party verification from TRUSTe or the Better Business Bureau symbol.

Use a credit card, not a debit card, to protect transactions, or use a third-party payer such as PayPal or Google Wallet.

Create a strong password for all online accounts (one that includes numbers and other symbols such as @).

Deals that are too good to be true are usually just that.

Read and understand the fine print on warranties, return policies, and the retailer’s privacy statements.
I need a dentist appointment for a root canal.

STEP 1: User enters search criteria.

SEARCH:
- Dentist
- Root canal
- Seattle area
- As soon as possible

STEP 2: Agent takes search criteria and adds what is necessary to refine search.

STEP 3: Agent transfers task to a specific web service agent to check and compare services.

STEP 4: Web service agent collects the information, along with your availability.

STEP 5: Agent compares and ranks the information.

STEP 6: Agent returns list of acceptable results and waits for action.

RESULTS:
- Dr. Amid, 3/23 2 p.m.
- Dr. Brett, 3/23 4 p.m.
- Dr. Slade, 3/24 8 a.m.

Compare services
1. What is the origin of the Internet?

- The Internet is the largest computer network in the world, connecting millions of computers.
- Government and military officials developed the early Internet as a reliable way to communicate in the event of war.
- Eventually, scientists and educators used the Internet to exchange research.
- Today, we use the Internet and the web (which is a part of the Internet) to shop, research, communicate, and entertain ourselves.
2. How does data travel on the Internet?

- A computer (or other device) connected to the Internet acts as either a client (a computer that asks for information) or a server (a computer that receives the request and returns the information to the client).
- Data travels between clients and servers along a system of communication lines or pathways. The largest and fastest of these pathways form the Internet backbone.
- To ensure that data is sent to the correct computer along the pathways, IP addresses (unique ID numbers) are assigned to all computers connected to the Internet.
3. How can I communicate and collaborate with others using Web 2.0 technologies?

- Web 2.0 can be described as the social web, in which the user is also a participant. Examples of Web 2.0 technologies include social networking, blogs, wikis, podcasts, and webcasts.
- Social networking enables you to communicate and share information with friends as well as meet and connect with others.
- Blogs are journal entries posted to the web that are generally organized by a topic or area of interest and are publicly available. Video logs use video as the primary content.
- Wikis are a type of website that allows users to collaborate on content—adding, removing, or editing it.
- Podcasts are audio or video content that users subscribe to.
- Webcasts are broadcasts of audio or video content over the Internet. Most webcasts are distributed in real time, unlike podcasts that are usually prerecorded and made available for download.
4. How can I communicate with others using e-mail and instant messaging?

- E-mail allows users to communicate electronically without the parties involved being available at the same time,
- Instant-messaging services are programs that enable you to communicate in real time with others who are online.
5. What multimedia files are found on the web, and what software is needed to access those files?

- Multimedia is anything that involves one or more forms of media in addition to text, such as graphics, audio, and video clips.
- Sometimes you need a special software program called a plug-in (or player) to view and hear multimedia files. Plug-ins are often installed in new computers or are offered free of charge at developers’ websites.
Using the Web Effectively

• Accessing and Moving Around the Web
• Searching the Web Effectively
Accessing and Moving Around the Web

- Web browser
- Graphical browsers display:
  - Text
  - Pictures
  - Sound
  - Video

- Internet Explorer: A very popular browser
- Firefox: Open source, has a strong following
- Google Chrome: Newest browser, quickly gaining popularity
- Safari: Developed by Apple for Macs, has a Windows version for PCs
Accessing and Moving Around the Web: 
**Web Browsers**

- Web browser features
• Every website has a unique address
• URLs are composed of parts to identify the web document
• Protocols
  – HTTP: Hypertext Transfer Protocol
  – File Transfer Protocol (FTP)
  – BitTorrent
### Accessing and Moving Around the Web: URLs, Protocols, and Domain Names

#### Top-level domains

<table>
<thead>
<tr>
<th>Domain Name</th>
<th>Who Can Use It</th>
</tr>
</thead>
<tbody>
<tr>
<td>.biz</td>
<td>Businesses</td>
</tr>
<tr>
<td>.com</td>
<td>Originally for commercial sites; but now can be used by anyone</td>
</tr>
<tr>
<td>.edu</td>
<td>Degree-granting institutions</td>
</tr>
<tr>
<td>.gov</td>
<td>Local, state, and federal U.S. governments</td>
</tr>
<tr>
<td>.mil</td>
<td>U.S. military</td>
</tr>
<tr>
<td>.net</td>
<td>Originally for networking organizations, but no longer restricted</td>
</tr>
<tr>
<td>.org</td>
<td>Organizations (often not-for-profits)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country Code</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>.au</td>
<td>Australia</td>
</tr>
<tr>
<td>.ca</td>
<td>Canada</td>
</tr>
<tr>
<td>.uk</td>
<td>United Kingdom</td>
</tr>
</tbody>
</table>
Accessing and Moving Around the Web: Hyperlinks and Beyond
Accessing and Moving Around the Web: Favorites, Live Bookmarks, and Tagging

- History List
- Favorites
  - Favorites (Internet Explorer and Safari)
  - Bookmarks (Firefox and Google Chrome)
- Live bookmark feature (Firefox)
Accessing and Moving Around the Web: Favorites, Live Bookmarks, and Tagging

- Social bookmarking or tagging
Searching the Web Effectively

- Search engine
- Subject directory
- Metasearch engine
Searching the Web Effectively:
Using Search Engines Effectively

• Components of search engines
  – Spider
  – Indexer
  – Search Engine Software

• Resulting list appears as list of hits
Searching the Web Effectively: Using Search Engines Effectively

• Results differ between search engines
  – Proprietary algorithms formulate searches
  – Results ranked based on frequency of keywords

• Boolean operators used to refine search results
  – AND, NOT, OR
Searching the Web Effectively:
Using Search Engines Effectively

- Key phrases
  - Quotation marks to search for exact phrase
  - Search within a specific site
  - Use a wild card (*)
Searching the Web Effectively:
Using Search Engines Effectively

Google Search Tools

Click for other search options such as reading level

Select time frame

Click for more Google Apps

Select location

Google Apps

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Other specialty search tools in Google

- **Blog Search**
  Find blogs on your favorite topics

- **Patent Search**
  Search the full text of US Patents

- **Finance**
  Business info, news and interactive charts

- **Alerts**
  Get email updates on the topics of your choice

- **Custom Search**
  Create a customized search experience for your community

- **Google Shopping**
  Search for stuff to buy

- **Scholar**
  Search scholarly papers

- **Trends**
  Explore past and present search trends
Searching the Web Effectively: Evaluating Websites

• Internet resource considerations
  – Authority
  – Bias
  – Relevance
  – Audience
  – Links
1. What is e-commerce, and what online safeguards are available?

- E-commerce is the business of conducting business online. E-commerce includes transactions between businesses (B2B), between consumers (C2C), and between businesses and consumers (B2C).
- Some important safeguards to keep in mind include looking for indicators that the website is secure; shopping at well-known, reputable sites; and avoiding making online transactions on public computers.
2. What is a web browser, and what are a URL and its parts?

- A web browser is software installed on your system needed to locate, navigate to, and view web pages.
- You gain access to a website by typing in its address, called a Uniform Resource Locator (URL).
- A URL is comprised of several parts, including the protocol, the domain, the top-level domain, and paths (or subdirectories).
3. How can I use hyperlinks and other tools to get around the web?

- Hyperlinks are specially formatted pieces of text or images used to jump from place to place when clicked on.
- You can also use the Back and Forward buttons, History lists, breadcrumb trails, and Favorites or Bookmarks to navigate the web.
- Favorites, live bookmarks, and social bookmarking help you return to specific web pages and help you organize the web content that is most important to you.
Check Your Understanding

4. How do I search the Internet effectively, and how can I evaluate websites?

• A search engine is a set of programs that searches the web using specific keywords you wish to query and then returns a list of the websites on which those keywords are found. Search engines can be used to search for images, podcasts, and videos in addition to traditional text-based web content. A subject directory is a structured outline of websites organized by topic and subtopic. Metasearch engines search other search engines.

• Not all websites are equal, and some are better sources for research than others. To evaluate whether it is appropriate to use a website as a resource, determine whether the author of the site is reputable and whether the site is intended for your particular needs. In addition, make sure that the site content is not biased, the information on the site is current, and all the links on the site are available and appropriate. If multiple sites offer the same content, this is another indication that the information is accurate.