The Internet, the Web, and Electronic Commerce

Lecture 3

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The Internet, the Web, and Electronic Commerce

Learning Objectives

1. Explain the origins of the Internet and the web.

2. Explain how to access the web using providers and browsers

3. Compare different web utilities including filters, file transfer utilities, and Internet security suites

4. Compare different Internet communications, including social networking blogs, microblogs, webcasts, podcasts, wikis, e-mail, text messaging, and instant messaging

Introduction

- The Internet connecting millions of people and organizations

- The web provides an easy-to-use interface to Internet resources

The Internet and the Web

- The Internet: Large global network connecting smaller networks all over the globe (connects people all over the world)

- The Internet launched in 1969
  - The Internet originally started in 1969 when US funded a research project (ARPANET—Advanced Research Project Agency Network) to develop a national computer network

- World Wide Web or WWW was introduced in 1991

- World Wide Web (Web) is a part of the Internet – not the Internet

- The Internet and the web are NOT the same
  - The Internet is the physical network
  - The web is a multimedia interface to the resources available on the Internet

Web

What are the three web generations? (Explain)

- **Web 1.0**
  - 1st generation
  - Linking existing information (Provide links to websites with specific words or phrases)
  - Google Search and other search engines made it possible for users to search the web to locate web pages of interest.
- **Web 2.0**
  - Dynamic content creation
  - Facebook is most common in Web 2.0
- **Web 3.0**
  - Identifies relationships between data
  - Personalized content creation for users
  - computer-generated information requiring less human interaction
  - Siri and Google Assistant are examples of Web 3.0 applications.

Common Internet Uses

List five of the most common uses of the Internet and the web

1) Communicating
2) Shopping
3) Searching
4) Education or e-learning
5) Online Entertainment

Common Internet Uses

1) Communicating: is by far the most popular Internet activity. You can exchange e-mail, photos, and videos with your family and friends from almost anywhere in the world. You can locate old friends and make new friends. You can join and listen to discussions and debates on a wide variety of special-interest topics.

2) Shopping: is one of the fastest-growing Internet applications. You can look for the latest fashions, search for different items, and make purchases.
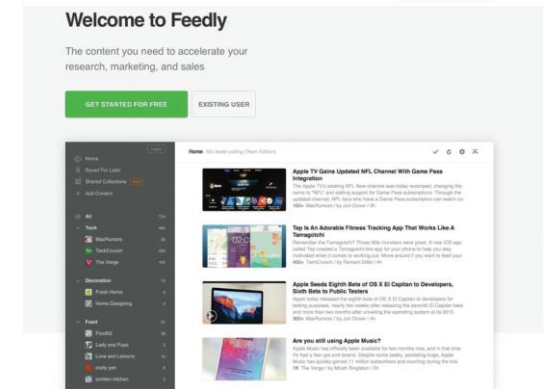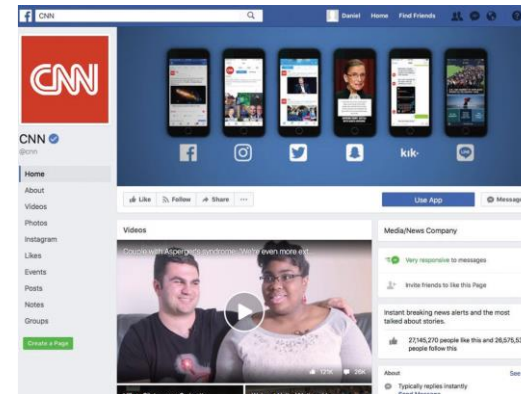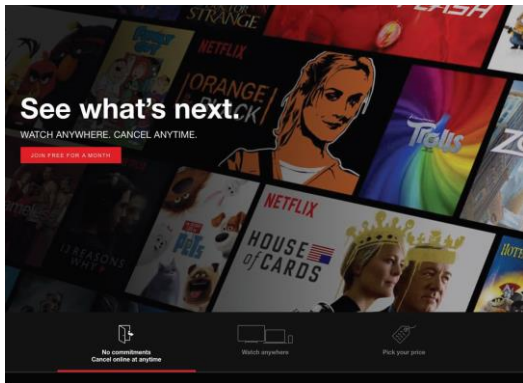
Common Internet Uses

3) **Searching:** for information has never been more convenient. You can access some of the world's largest libraries directly from your home computer.

4) **Education or e-learning**: is another rapidly evolving web application. You can take classes on almost any subject. There are courses just for fun, and there are courses for high school, college, and graduate school credit. Some cost nothing to take and others cost a lot.

Common Internet Uses

5) **Online Entertainment:** options are nearly endless. You can find the latest movies and news, listen to the hottest music, and read this week's best-selling author.

Making IT Work for You
Online Entertainment

- Online options for TV, movies, music, books, social media, news feeds
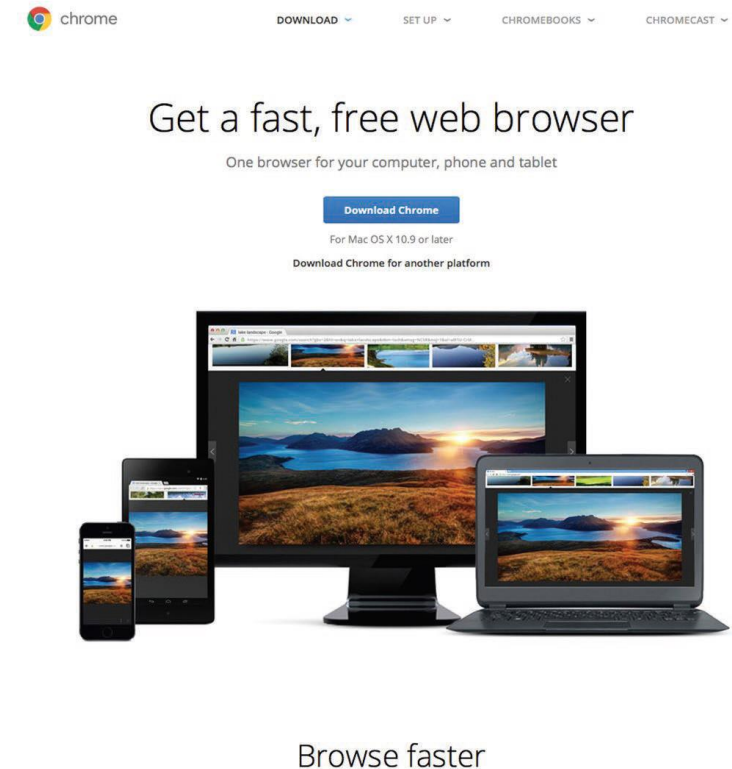 - Amazon Prime, CNN, Facebook, Twitter

Concept check

1) What is the difference between the Internet and the web?
2) Describe how the Internet started.
3) What are the three web generations? (Explain)
4) List five of the most common uses of the Internet and the web.
5) List and describe five of the most common uses of the Internet and the web.

Internet Access Providers

- The most common way to access the Internet is through an Internet service provider (ISP).
  - Internet service provider (ISP) provide a path to access the Internet
  - The most widely used commercial Internet service providers use telephone lines, cable, and/or wireless connections.

Browsers

- Browsers: programs that allow you to explore the web.
- Browsers provide access to web resources.
- Allow you to explore the web
  - Connect to remote computers
  - Uncomplicated interface to the Internet
  - File transfer
  - Display many varieties of multimedia
- Popular Web browsers include:
  - Mozilla Firefox
  - Apple Safari
  - Microsoft Edge
  - Google Chrome

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One browser for your computer, phone and tablet

Download Chrome

For Mac OS X 10.9 or later

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Browse faster

URLs

- For browsers to connect to the web resources, the location or address of the resources must be specified. These addresses are called uniform resource locators (**URLs**).

- We use URL (uniform resource locator) to connect to other resources.

Figure 2-3 Basic parts of a URL

URLs

Figure 2-3 Basic parts of a URL

For browsers to connect to resources, the location or address of the web resources must be specified. URL is the address and contains two parts:

1. **Protocol**
   - Protocols are rules for exchanging data between computers.
   - The protocol (https) is used for web traffic and is one of the most widely used Internet protocols.
2. **Domain name**
   - Domain name indicates the specific address where the resource is located.
   - In Figure 2-3 the **domain** is identified as **www.mtv.com**.
   - The last part of the domain name following the dot (.) is the top-level domain (TLD). Also known as the web suffix, it typically identifies the type of organization. For example, .com indicates a commercial site.

Top-Level Doman (TLD)

- **Top-level domain (TLD)** also known as the **Web Suffix.**

  - **Top-level domain (TLD)** or **Web Suffix** Identifies the type of organization.

  .com   Commercial

  .edu   Educational

  .gov   Government

  .net   Network

  .org   Organization

  Check this website (https://ae.godaddy.com/?itc=godaddy_hp)

HTML and Hyperlinks

- Browsers Interpret the HTML (Hypertext Markup Language) codes and formatting instructions and displays the document as a web page.

- HTML (Hypertext Markup Language) is a Markup language for displaying web pages.

- Hyperlinks or links help to connect to other web pages.

- Web pages present information about the site along with references and hyperlinks or links that connect to other documents containing related information such as text files, graphic images, audio, and video clips.

HTML and Hyperlinks

- Example:

https://www.w3schools.com/html/tryit.asp?filename=tryhtml_links_w3schools

Interactive Web Sites

- Technologies used to provide highly interactive and animated websites

 1. Cascading Style Sheets (CSS)

  2. JavaScript

 3. PHP

  Please visit this website for more examples
  https://www.w3schools.com
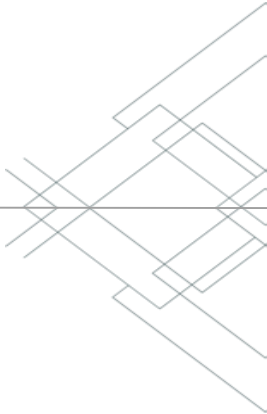
Interactive Web Sites

- Technologies used to provide highly interactive and animated websites

  1. <u>Cascading Style Sheets (CSS)</u>: are separate files referenced by or lines inserted into an HTML document that control the appearance of a web page. CSS help ensure that related web pages have a consistent presentation or look.

  2. <u>JavaScript</u>: is a language often used within HTML documents to trigger interactive features, such as opening new browser windows and checking information entered in online forms.

Interactive Web Sites
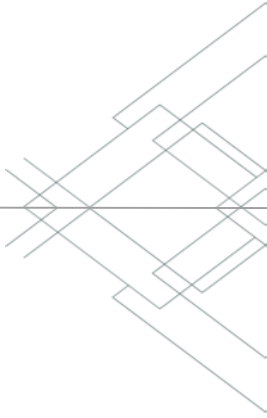
- Technologies used to provide highly interactive and animated websites

    3. PHP: like JavaScript, is a language often used within HTML documents to improve a website's interactivity.

Mobile Browsers
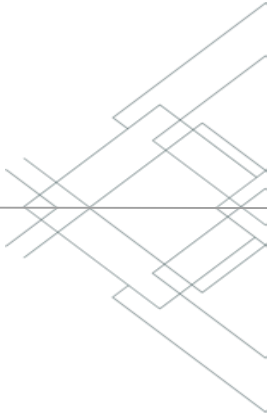
- Mobile Browsers: designed to run on portable devices. Contain special navigational tools for convenience to pinch and stretch

Concept check

1) What is the function of an ISP?
2) What is the function of a browser?
3) What is the function of a mobile browser?
4) What are URLs, HTML, hyperlinks, and CSS?
5) What are JavaScript and PHP?

Web Utilities

- <u>Web Utilities</u>: Specialized utility programs that make using the Internet and web safer and easier.

    1. Filters
    2. File Transfer Utilities
    3. Internet Security Suites

Web Utilities

- **Web Utilities**: Specialized utility programs that make using the Internet and web safer and easier.

Web Utility	Description
Filters	Block access to selected sites and set time limits
File transfer	Upload and download files from servers
Internet security suite	Collection of utility programs for security and privacy

Figure 2-8 Web utilities

Filters

- Filters used to block access to selected sites

- Filters can also monitor use and generate reports detailing the total time spent on the Internet and specific sites.

- **Best know filters**
  - Norton Online Family

    (Check the video: https://www.youtube.com/watch?v=JiZsKnMCDrM)
  - McAfee Family Protection

File Transfer Utilities

- **File transfer utilities** used to upload and download files to and from the Internet

- Using file transfer utility software, you can copy files to your computer from specially configured servers. This is called downloading.

- You also can use file transfer utility software to copy files from your computer to another computer on the Internet. This is called uploading.

File Transfer Utilities

- File transfer utilities used to upload and download files to and from the Internet

- Three popular types of programs
  1) Web-based file transfer services
  2) Bit-Torrent
  3) File transfer protocol (FTP) / Secure file transfer protocol (SFTP)

Web-based file transfer

1. **Web-based file transfer** services uses web browser to upload and download files
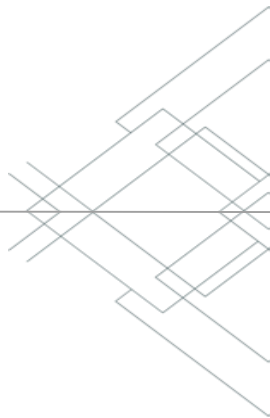
Examples:

- Dropbox.com
- Google Drive

2. **BitTorrent** distributes file transfers across many computers for more efficient downloads.

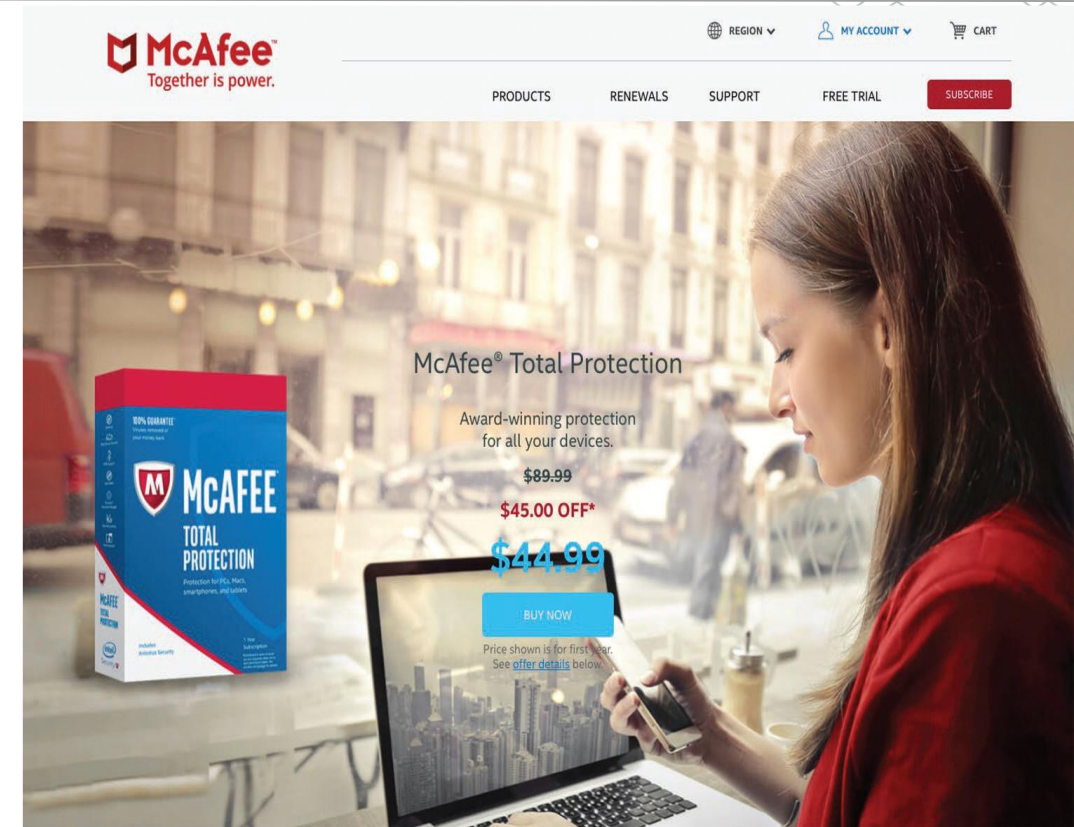(Check the video: https://www.youtube.com/watch?v=vEANyG--k4Q)

3. File Transfer Protocol and Secure File Transfer Protocol (FTP & SFTP):

 – Copy files to and from your computer to the internet

 – Used for uploading changes to a website

 – Good for transferring large files

Internet Security Suites

- Internet Security Suites: collection of utility programs designed to maintain your security and privacy while you are on the Web

- Internet Security Suites designed to:
  - Control spam
  - Protect against computer viruses
  - Provide filters

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Virus Protection Pledge

Internet Security Suites

- Internet Security Suites: collection of utility programs designed to maintain your security and privacy while you are on the Web
- **Two best known suites**
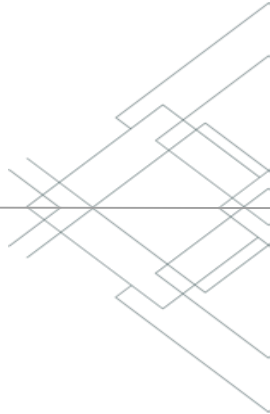 - McAfee Internet Security
  - Symantec Norton Internet Security

Concept check

1) What are web utilities?
2) What are filters used for?
3) What are file transfer utilities? Downloading? Uploading?
4) Define Internet security suites with an example.
5) Define Web-based file transfer services.
6) Define Bit-Torrent

Communication

- Communication is the most popular Internet activity.
- Some popular types of Internet communication are:
  1. Social Networking
  2. Blogs and Microblogs
  3. Webcasts, Podcasts, and Wikis
  4. E-mail and Messaging

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Social Networking

- Social Networking is one of the fastest-growing and most significant Web 2.0 applications.

- Social networking sites focus on connecting people and organizations that share a common interest or activity.

Social Networking

- **The six common features of most social networking sites are:**
  1. Profiles– created by individuals to share personal information
  2. Pages– created by companies to promote their business
  3. Groups– communities of individuals who share a common interest
  4. Friends– list of those you want to communicate with
  5. News feed– first page you see after logging into the site
  6. Share settings– settings you set determining who can see your posts

Blogs, Microblogs

- **Blogs**: personal websites to keep in touch with family and friends
  - Personal websites
  - Date/time-stamped
  - Arranged with the most recent items shown first
  - Examples: Blogger and WordPress
- **Microblogs**: publish only short sentences
  - Most common is Twitter (X recently)
    - Tweets are Twitter messages
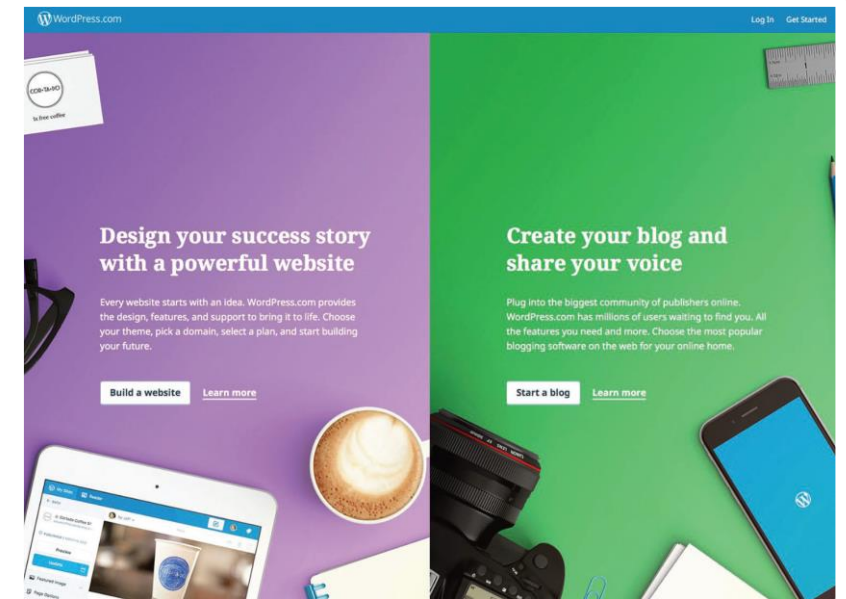
Webcasts

- Webcasts use streaming technology in which audio and video files are continuously downloaded to your computer while you are listening to and/or viewing the file content.

- After a webcast has been completed, there are no files remaining on your computer.

- Webcasts typically broadcast live events.

- For example, the popular website YouTube.com, as well as other sites, routinely webcast live movie premiers and sporting events.

Podcasts

- Podcasts do not use streaming technology.

- Before a podcast can be run, the media files have to be downloaded and saved to your computer. Once downloaded, the files can be run to listen to music or watch a movie as often as you would like.

- Podcast
  - Must download files to use
  - Can transfer to media player

Wiki

- Wiki website which is editable by users. Built on a community of interested people that build knowledge over time.

- Wiki
  - Specially designed Web site
  - Allows visitors to edit the contents
  - Supports collaborative writing
    - Example:
      Wikipedia, an online encyclopedia, written and edited by anyone who wants to contribute, that has millions of entries in over 20 languages.

Concept check

1) List the four popular types of Internet communication, then explain one type in detail.
2) What is social networking? What are profiles, pages, groups, news feeds, and share settings?
3) Explain the six common features of most social networking sites.
4) List the six common features of most social networking sites.
5) What are blogs? Microblogs? Twitter? Tweets?
6) What is the difference between a webcast and a podcast? What is a wiki? What is Wikipedia?

E-Mail

- **E-mail** or **electronic mail**: Transmission of electronic messages over the Internet

E-Mail

- E-mail has three basic elements
  1. Header
     » Address
     » Subject
     » Attachments
  2. Message
  3. Signature

E-Mail

- Header contains:
- Address – who the e-mail is going to.
  - Address has two parts
    - User name - identifies unique user or computer in the domain
    - Domain name - references a specific organization
- Subject– topic of the message
- Attachments– documents and / or images you attach to the message
- Message– letter
- Signature– information about the sender

E-mail Systems

What are the two basic types of e-mail systems?

1) Client-based e-mail system – requires installation of an e-mail client on your computer.

   - Examples are Microsoft Outlook and Apple Mail.

2) Web-based e-mail system– no email program on your computer, access from any computer through a Browser.

   - Examples are Google Gmail, Microsoft Hotmail, Yahoo! Mail

Messaging

- Text Messaging, also know as texting or SMS (short message service), is sending short electronic messages, typically fewer than 160 characters, between mobile devices.

- Multimedia Messaging Service (MMS) Enables users to not only send text but also images, videos, and sounds between mobile devices.

Instant Messaging

- **Instant messaging (IM)** allows two or more people to contact each other via direct, live communication.
  - Most programs include video conferencing features and file sharing.
  - **Examples:**
    - Facebook Messenger
    - Google Hangouts

Concept check

1) What is e-mail? Headers? Addresses? Attachments?
2) What are the two basic types of e-mail systems?
3) What is text messaging? Instant messaging?