The internet, The web and Electronic commerce

1. **The internet and the web**

- Internet launched in 1969

- **National computer network called:** Advanced Research Project Agency Network (ARPANET).

- **The internet is:**
  - Large network that connects together smaller networks all over the global.
  - Actual network.
  - madding up of wires, cables, satellites, and rules of exchanging information between computers Connected to the network.

- Being connected to this network is often described as being **online**.

- The web was introduced at the Center for European Nuclear Research (CERN).

- Before Web, internet was all text.

- Web is a multimedia interface to the resources available on the internet.

- **1st generation of Web is** Web1.0 focused on linking information

- **2nd generation of Web is** Web2.0 focused on supporting more dynamic content creation and social interaction. Example; FACEBOOK

- **3rd generation of Web is** Web3.0 focused on computer-generated information requiring less human interaction to locate and integrate information.

- The internet and the web have evolved into one of the most powerful tools of the 21st century.

**Most common use of the internet and web:**

1. **Communication:** is by far the most popular internet activity.

2. **Shopping:** is one of the fastest-growing internet applications.

3. **Searching:** for information has never been more convenient. You can find the latest local, national, and international news.

4. **Education or e-learning:** is another rapidly emerging web application. You can take classes on almost any subject.

5. **Entertainment:** options are nearly endless. You find music, movies, magazines, and computer games.

The first step to using the internet and the web is to get **connected**, or to **gain access** to the internet.
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By: M.Hazazi

Access

Once you are on the internet, your computer become an extension of what seems like a giant computer "A computer that branches all over the world".

Providers:

- The most common way to access the internet is through an Internet Service provider (ISP).
- The providers are already connected to the internet and provide a path or connections for individuals to access the internet.
- ISP use different connection technology like DSL, CABLE and WIRLESS MODEM

The most widely used commercial Internet service providers are:

1. National service providers:
   - Like Verizon, AT&T, Sprint and T-Mobile.
   - They provide access through standard telephone line, cable or wireless connections.
   - Users can access the internet from almost anywhere within the country for a standard fee without incurring long-distance telephone charge.

2. Wireless service providers:
   - Offer internet connections for computers with wireless modems and a wide array of Wireless device.

Browser:

- Browsers are programs that provide access to web recourses.
- This software connects you to remote computers, opens and transfers files, displays text and images.
- Provides in one tool in uncomplicated interface to the internet and web documents.
- Browsers allow you to explore, or to surf, the web by easily moving from one web site to another.
- Four well-known browsers are:
  - Mozilla Firefox, Apple Safari, Microsoft Internet Explorer, and Google Chrome.
- For browsers to connect to resources the location or address of the resources must be specified, these addresses are called Uniform Resource Locators (URLs).
URLs have two parts:

1. The 1st part presents the protocol used to connect to resources.
   a. Protocols are rules for exchanging data between computers.
   b. The protocol http is used for web traffic and is most widely used internet protocol.

2. The 2nd part presents the domain name.
   a. It indicates the specific address where the resource is located.
   b. The last part the domain name following the dot (.) is the top-level domain (TLD). It identifies the type of organization.

- Once the browser has connected to the web site, a document file is sent back to your computer. This document is typically contains Hypertext Markup Language (HTML). The browser intercepts HTML formatting instructions and displays the document as a web page.

- Web pages also can contain special programming to add intercept and activity. A language called JavaScript is often used to trigger simple interactive features such as opening new browser window and checking information entered in online forms.

- An advanced use of JavaScript called AJAX. This technology is used to create interactive web sites that respond quickly, like traditional desktop application software.

- Applets are written in the Java programming language.

- The Java Applets are used to presents animation, display graphics; provide interactive games, and much more.

- Access the internet from variety for mobile device like cell phones. Special browsers called mobile browsers are designed on these portable devices.
Communication

Is the most popular internet activity.

- **E-mail:**
  - E-mail or electronic mail is the transmission of electronic message over the internet.
  - **Two basic types of e-mail account are:**
    - **Client – based E-mail account:** required a special program on your computer known as e-mail client.
      Example: Windows Mail, Mozilla Thunderbird and Apple’s Mail.
    - **Web – based E-mail account:** do not required a special program on your computer. Once your computer connects to an e-mail service provider, special program called Webmail client is run on the email provider server.
      Example: Gmail, Hotmail, and Yahoo.

- **A typical e-mail message has 3 basic elements:**
  1. **Header:**
     Appears first and typically includes the following information:
     - **Addresses:**
       E-mail addresses have two 2 basic parts:
       - The first part is the user’s name
       - The second part is domain name, which includes the top-level domain.
       For example “dcoats@usc.edu”
     - **Subjects:**
       A one line description, used to present the topic of the message.
       Subject lines typically are displayed when a person checks his or her mailbox.
     - **Attachments:**
       Allow you to attach files such as documents and image files.
  2. **The letter or message**
  3. **Signature**
     Provides additional information about the sender.
     The information may include the sender’s name, address, and telephone number.
Unwelcomed mail is called spam.

In an attempt to control spam, anti-virus laws have been added to our legal system.

**Instant Messaging (IM):**

- Allows two or more people to contact each other via direct, live communication.
- Most instant messaging programs also include video conferencing features, file sharing, and remote assistance.

**The most widely used instant messaging services are:**

- AOL’s instant messaging
- Microsoft’s MSN Messenger/Yahoo Messenger
- Google Talk

**One limitation** = doesn’t support communication with other Instant Messaging programs.

**Solution** = versatile instant messenger

Example: Digsby/Pidgin/Qnext

**Social network:**

- One of the fastest-growing uses of the internet is social networking, or connecting individuals to one another.

**There are 3 broad categories:**

1. **Reuniting sites:**
   - Are designed to connect people who have known one another but have lost touch.
   - Example: Classmates Online and Facebook.

2. **Friend-of-a-friend sites:**
   - Are designed to bring together two people who don’t know one another but share a common friend.
   - Example: Friendster and MySpace.

3. **Common interest sites:**
   Bring together individuals that share common interest or hobbies
   Examples: LinkedIn and Meetup.
Blogs, micro blogs, webcast, podcast and wikis

Blogs

- Many individuals create personal web sites, called web blogs or blogs, to keep in touch with friends and family.
  
  Example: blogger and Word Press.

Micro blogs

- Publishes short sentences that only take a few seconds to write, rather than long stories or posts like a traditional blog.
  
  Example: twitter.

Webcast & podcast

- Both of them deliver media content like music and movie over the internet.
  
  Webcast = use streaming like YouTube
  
  Podcast = do not use streaming

Wikis

- A wiki is a web site specially designed to allow visitors to fill in missing information or correct inaccuracies.
  
  Example is Wikipedia.

Create blogs and wikis are example of web authoring
Search tools

Search devices
Maintain huge database relating to information provided on the web and the internet.

- Special program called, spiders continually look for new information and update the search devices.

Search Engines: example: google / yahoo / bing / ask

- Specialized program that assist you in locating information on the web and the internet.

Search engines provide two different search approaches:

1. **Keyboard search:** example: Google
   - a) In a keyboard search, you enter a keyboard or phrase reflecting the information you want.
   - b) The search engine compares your entry against its database and returns a list of hits, or sites that contain the keywords.
   - c) Designed to find specific information.

2. **Directory search:** example: Yahoo
   - a) Web directory also known as subject directory, organize information according to category.
   - b) Most search engines also provide a directory or list of categories or topic such as Autos, Finance, and Games.
   - c) In a dictionary search, you select a category or topic that fits the information that you want.
   - d) Designed to find general information about a topic you want.

Metasearch Engines: example: Dogpile / clusty / search

- Programs that automatically submit your search request to several search engines simultaneously.
- The Metasearch engine receives the results, eliminates duplicates, orders the hits, and then provides the edited list to you.

Specialized search engines: example: www.infomat.com

- Focus on subject-specific websites.
- Can potentially save you time by narrowing your search.
Content Evaluation:

Evaluating web site content:
1. Authority
2. Accuracy
3. Objectivity
4. Currency

Electronic Commerce:
- Electronic commerce also known as e-commerce, is the buying and selling of goods over the internet.
- Involves two 2 parties:
  1. Business
  2. Consumers

There are 3 basic types of electronic commerce:

1. **B2C : Business-to-Consumer:**
   Involves the sale of the product or service to the general public or end users.

2. **C2C : Consumer-to-Consumer:**
   Involves individuals selling to individuals.

3. **B2B : Business-to-Business:**
   Involves the sale of the product or service from one business to another.
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- **Business-to-Consumer E-Commerce:**
  - The fastest growing type of e-commerce is business to consumer.
  - It is used by large corporations, small corporations, and start-up business.

  **The three most widely used B2C applications are:**
  1. Online banking
  2. Online stock trading
  3. Online shopping.

- **Consumer-to-Consumer E-Commerce:**
  - A recent trend in C2C e-commerce is the growing popularity of web auctions.
  - Web auctions are similar to traditional auctions except that buyers and sellers seldom, if ever; meet face-to-face.

  **There are two basic types of web auction sites:**
  1. *Auction house sites:* sell a wide range of merchandise directly to bidders.
  2. *Person-to-person auction sites:* operate more like flea markets. The owner of the site provides a forum for numerous buyers and sellers together.

- **Security:**
  - The single greatest challenge for e-commerce is the development of fast, secure, and reliable payment method for purchased goods.

  **The three basic payment options are:**
  1. *Checks:* are the most traditional. Unfortunately, check purchases require the longest time to complete.
  2. *Credit card:* purchases are faster and more convenient than check purchases.
  3. *Digital cash:* is the internet’s equivalent to traditional cash. Although not as convenient as credit card purchases, digital cash is more secure.
Cloud Computing:

- Typically, application programs are owned by individuals or organizations and stored on their computer system's hard disks.

- Cloud computing uses the internet and the web to shift many of these computing activities from the user’s computer to other computers on the internet.

The basic components to cloud computing are:

1. **Clients**:
   - Are corporations and end users who want access to data, programs, and storage.
   - This access is to be available anywhere and anytime that connection to the internet is available.

2. **Internet**:
   - Provides the connection between the clients and the providers.
   - Two of the most critical factors determining the efficiency of cloud computing are:
     a) The speed and reliability of the user’s access to the internet.
     b) The internet’s capability to provide safe and reliable transmission of the data and programs.

3. **Service providers**:
   - Organizations with computers connected to the internet that are willing to provide access to software, data, and storage.
   - These providers may charge a fee or maybe free.
Web utilities:

- **Utilities** are programs that make computing easier.
- **Web utilities** are specialized utility programs making using the internet and the web easier and safer.
- **File transfer utilities** allow you to copy files to and from your computer across the internet.

Plug-ins:

- Plug-ins are programs that are automatically started and operate as a part of your browser.
- Many web sites require you to have one or more plug-ins to fully experience their content.

Filters:

- Filters block access to selected sites.
- Filters programs allow parents as well as organization to block out selected sites and set time limits.

File transfer utilities:

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

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

Three popular types of file transfer are:

1. **File transfer protocol (FTP):**
   - File transfer protocol (FTP) and secure file transfer protocol (SFTP) allow you to efficiently copy files to and from your computer across the internet.

   - Frequently used for uploading changes to web site hosted by an internet services provider.

   - FTP has been used for decades and still remains one of the most popular methods of file transfer.

2. **Web-based file transfer services:**
   - Make use of a web browser to upload and download files.

   - A popular web-based file transfer services is drop.io
3. **Bit Torrent:**
- Distributes file transfers across many different computers for more efficient downloads, unlike other transfer technologies where a file is copied from one computer on the internet to another.
- A single file might be located on dozens of individual computers.
- When you download the file, each computer sends you a tiny piece of the larger file, making BitTorrent well-suited for transferring very large files.
- Unfortunately, BitTorrent technology often has been used for distributing unauthorized copies of copyright music and video.

❖ **Internet security suits:**

- Internet security suit is a collection of utility programs designed to maintain your security and privacy while you are on the web.
- These programs control spam, protect against computer virus, provide filters and much more.

**Two of the best-known internet security suits are:**

1. McAfee’s Internet Security