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Internet and Information Technology ITC202

Lecture 2 - Introduction to information technology

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Course Topics

- History of computing.
- **Introduction to information technology.**
- System and application software
- MS Word.
- MS Excel.
- MS PowerPoint.
- Common web services and tools.

Learning Outcomes

- Using Technology Effectively.
- Understanding the Computers Parts.
- Application Software: Programs That Let You Work.
- Introduction to Word, Excel, and PowerPoint.
- Using the Internet and Web's Resources.
- Protecting Your Digital Data and Devices.

Course Staff



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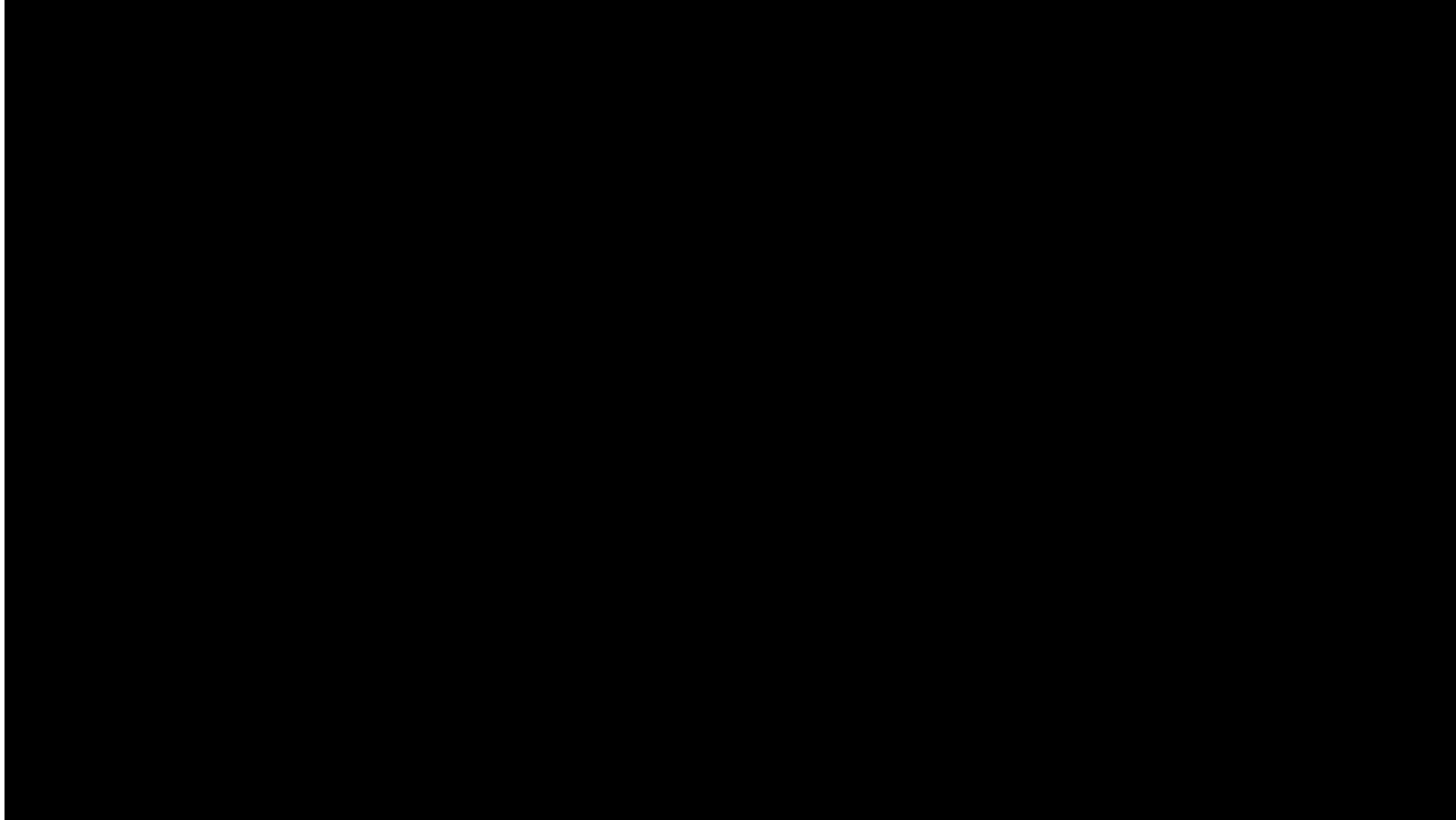
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IT



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DEFINITIONS

- ***Information Technology (IT)*** describes any technology that helps to produce, manipulate, store, communicate information.
- ***Computer technology:*** A computer is a programmable, multiuse machine that accepts data and processes it into information we can use, such as summaries, totals, or reports.
- Its purpose is to speed up problem solving and increase productivity.

DEFINITIONS

Communications technology: also called telecommunications technology, consists of electromagnetic devices and systems for communicating over long distances.

Examples are telephone, radio, broadcast television.

In more recent times, there has been the addition of communication among computers which is what happens when people “go online” on the internet.

DEFINITIONS

Online: means using a computer or some other information device, connected through a network, to access information and services from another computer or information device.



Network is a communications system connecting two or more computers; the internet is the largest network.



How Is IT Being Used in Education?

- Information technology is essential on college campuses.
- IT is used in teaching, labs, and in course management.
- Many college classes are either taught online or have a class website.



Rules for Computers in Classrooms

- Problem: Computers in the classroom can be used or misused.
- What should they be used for?
 - Following the lecture.
 - Working along with the instructor.
 - Performing instructor-assigned Internet searches.
 - Completing assignments for this class.
- What is misuse?
 - Text messaging or emailing friends.
 - Surfing the Internet for entertainment.
 - Doing assignments for other classes.



Money: Cashless Society?

- DEFINITION: **Virtual** means something that is created, simulated, or carried on by means of a computer or a computer network.
- Virtual money
 - Electronic wallets (e.g., PayPal).
 - Online bill paying.
 - E-Commerce.



E-commerce

- **Online bill paying:** it has been possible to pay bills online, such as those from phone and utility companies, with special software and online connections to your bank.
- A **digital wallet** allows an individual to make electronic commerce transactions. This can include purchasing items on-line with a computer or using a smartphone to purchase something at a store.
- **E-commerce** The buying and selling of products and services by businesses and consumers through an electronic medium, without using any paper documents.

Jobs & Careers

- Hotels: use computer reservations systems.
- Law Enforcement: Officers use computers:
 - On patrol.
 - To check stolen cars.
 - To check criminal records.
- **Office careers:** Budget, payroll, letter-writing, email.
- **Fashion:** Sales/inventory control systems, ordering, personnel.
- **Job-hunting:**
 - Use word processor to create CV.
 - Post CV online.
 - Online job searches.



IT Is Everywhere

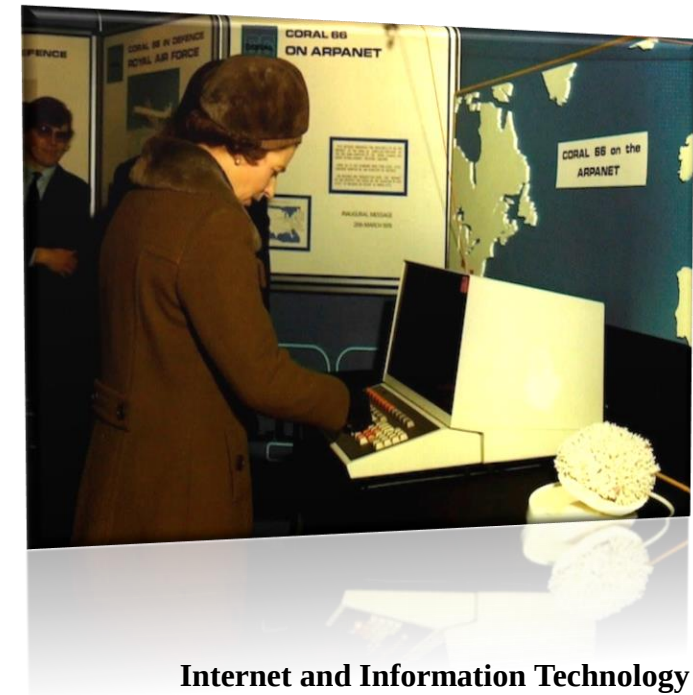
The Telephone Grows Up

- 1973: First cellphone call.
- Today's cellphones:
 - Can connect to Internet & web for all sorts of activities.
 - Can send and receive text messages.
 - Can take and send pictures, download music & video.
 - Can obtain news and TV programs.



Email's Mass Impact

- 1971: The Invention of Email.
- 1976: Queen Elizabeth II was the first head-of-state to use email.
- 1978: The First Spam Email.
- 1982: Making Email Simpler.
- 1988: Outlook's Ancestor:MSMail.
- 1993: The Birth of Webmail.



Email's Mass Impact

- 1996: The Rise of Hotmail and Yahoo first free webmail services.
- 1998 surpassed hand-delivered mail.
- 2004: Gmail Changes the Game: offered one whole gigabyte of storage space.
- 2020: A Year that Changed Everything:

Email was extremely important for crisis communication during the COVID-19 pandemic. Plus, there were changes like the shift to remote work and online learning, the increasing adoption of ecommerce, and the impact of economic ups-and-downs.

Internet, World Wide Web, & Cyberspace

- **Cyberspace:**
- The Internet & the World Wide Web in particular.
- The wired and wireless communications world in general .
- Thus, cyberspace includes chat rooms, blogs, ATMs, conference calls, texting, etc.
- Two most important aspects: Internet and web.



Internet and world wide web



Internet : A global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols.

World Wide Web vs. internet:

The world wide web, or web for short, are the pages you see when you're at a device and you're online. But the internet is the network of connected computers that the web works on, as well as what emails and files travel across.

Think of the internet as the roads that connect towns and cities together. The world wide web contains the things you see on the roads like houses and shops.

Types of computers: Supercomputers

- Priced from \$1 million to over \$1 billion.
- High-capacity machines with thousands of processors.
- Multi-user systems.
- Used for U.S. Census, weather forecasting, designing aircraft, scientific projects, etc.
- Japan's K Computer is the largest supercomputer.



Types of computers: Mainframes

- Priced from \$5,000 to \$5 million.
- Water-cooled or air-cooled.
- Used by banks, airlines, colleges, and the like for millions of transactions.



Types of computers: Workstations

- Introduced in early 1980s.
- Expensive, powerful personal computers.
- Required for scientific, mathematical, engineering, computer-aided design (CAD), computer-aided manufacturing (CAM).
- Used for designing cars, drugs, movie special effects.



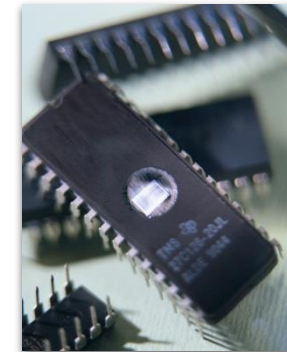
Microcomputers

- Personal computers that cost \$500 to \$5,000.
- Used either stand-alone or in a network.
- Types include: desktop, tower, notebooks (laptops), netbooks, tablets, mobile internet devices (MIDs), personal digital assistants (PDAs), e-readers.



Types of computers: Microcontrollers

- Also called *embedded computers*.
- Tiny, specialized microprocessors inside appliances & automobiles.
- They are in microwaves, programmable ovens, blood-pressure monitors, air bag sensors, vibration sensors, MP3 players, digital cameras, keyboards, car systems, etc.



Types of computers: Servers

- The word **server** describes the way a computer—whether mainframe, workstation, or PC—is used.
- A central computer connected (wired or wirelessly) to other computers on a client/server network.
- Purpose: Hold data and programs for clients to access and to supply services for clients.
 - Clients are other computers, such as PCs or workstations, on which users run applications



Computer Networks and the Internet

- Computer network: A collection of hardware and other devices that are connected together.
 - Users can share hardware, software, and data.
 - Users can communicate with each other.
- Network servers: Manage resources on a network.
- Clients: Access resources through the network server.

Computer Networks and the Internet

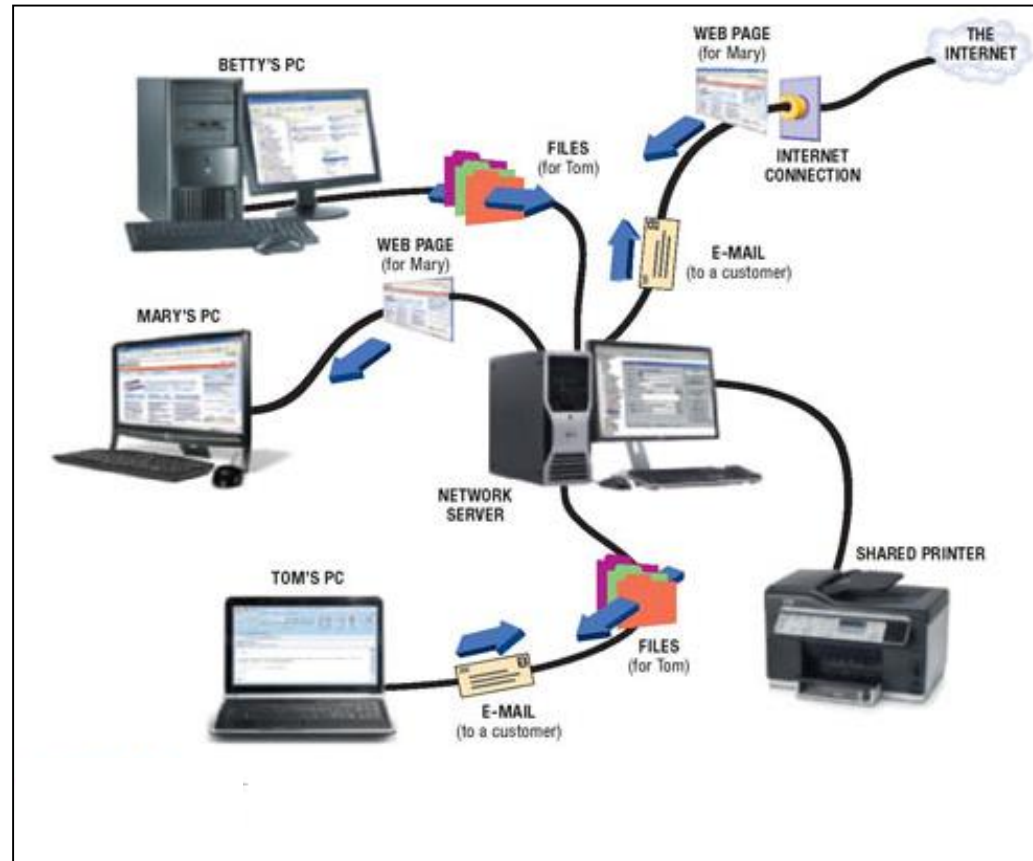
Computer networks exist in many sizes and types

- Home networks.
- School and small business networks.
- Large corporate.
- Public wireless networks.
- The Internet.

Computer Networks and the Internet



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What Are the Internet and the World Wide Web?

- Internet: The largest and most well-known computer network in the world.
- Individuals connect to the Internet using an Internet service provider (ISP).
- World Wide Web: One resource (a vast collection of Web pages) available through the Internet.
 - Web sites contain Web pages stored on Web servers.
 - Web pages viewed using a Web browser (Internet Explorer, Chrome, Safari, Firefox, Opera, etc.)
- A wide variety of information is available through the Web.

Why It's Important

Knowing how technology has influenced business sheds light on new and future industries.

Technology's Influence on Business:

- Technology refers to the tools and machines people have invented to make life easier.
- Perhaps the most common technology staple used in businesses today is the computer.

Accessing a Network or the Internet

- Need a modem or network adapter.
- Some networks require a username and password.
- Internet connections can be:
 - Direct (always-on) connections.
 - Dial-up connections.

Accessing a Network or the Internet

- Internet addresses are used to access resources on the Internet
 - IP address: Numeric address that identifies computers (207.46.197.32).
 - Domain name: Text-based address that identifies computers (microsoft.com).
 - Uniform resource locator (URL): Identifies Web pages (<http://twitter.com/jobs/index.html>).
 - E-mail address: Identifies people for e-mail exchange (jsmith@cengage.com).

IP Addresses and Domain Names



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- IP addresses are numeric and unique
- Domain names: Correspond to IP addresses
 - Top-level domains (TLDs) identifies type of organization or its location

ORIGINAL TLDS	INTENDED USE
.com	Commercial businesses
.edu	Educational institutions
.gov	Government organizations
.int	International treaty organizations
.mil	Military organizations
.net	Network providers and ISPs
.org	Noncommercial organizations

NEWER TLDS	INTENDED USE
.aero	Aviation industry
.biz	Businesses
.fr	French businesses
.info	Resource sites
.jobs	Employment sites
.mobi	Sites optimized for mobile devices
.name	Individuals
.pro	Licensed professionals
.uk	United Kingdom businesses

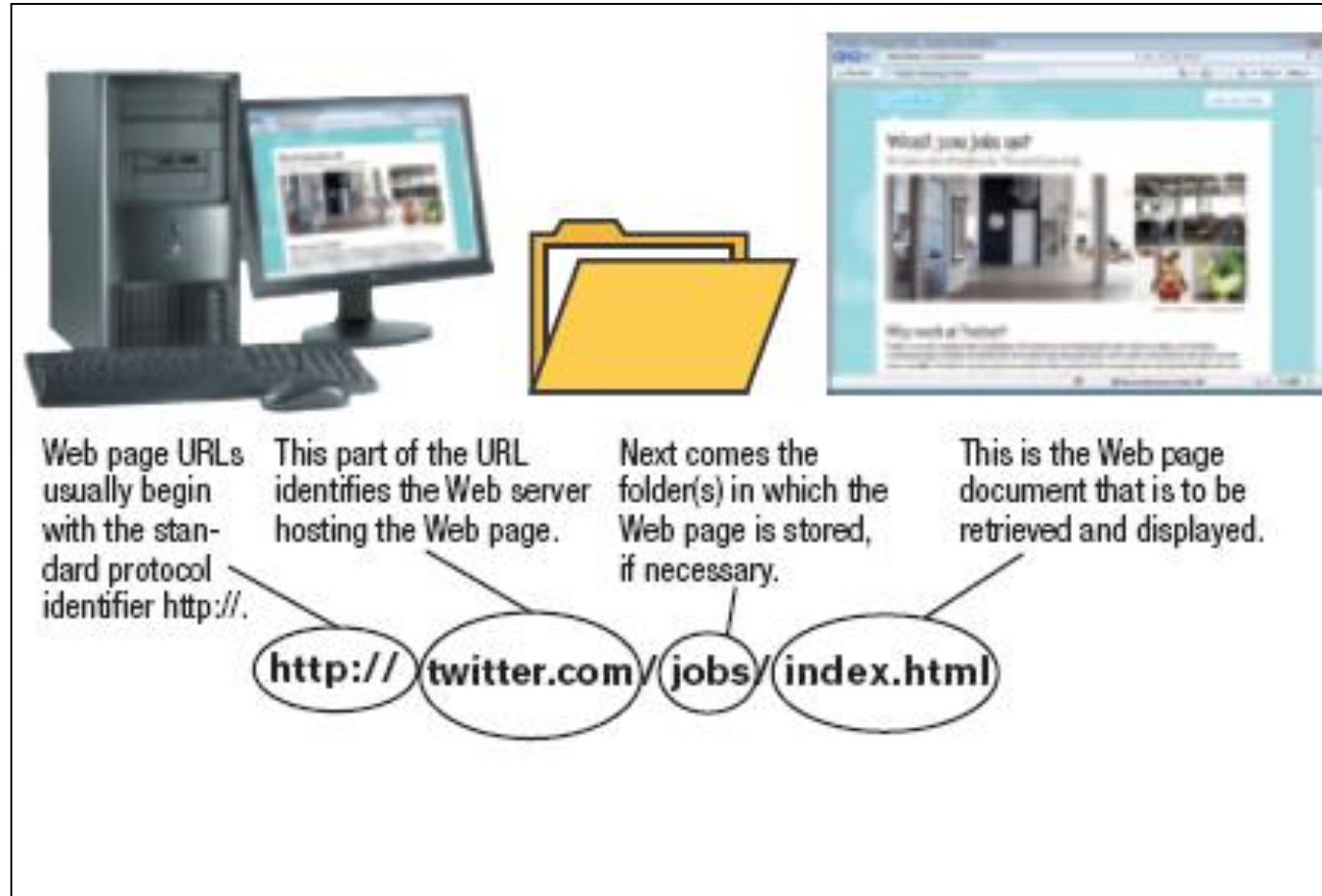
Uniform Resource Locators (URLs)

- URL: Uniquely identifies a Web page
 - Consists of:
 - Protocol or standard being used.
 - Identification of the Web server.
 - Names of folders in which the Web page file is stored.
 - Web page's filename.
- Protocols:
 - Hypertext Transfer Protocol (http://) is typically used to display Web pages (https:// is used for secure Web pages).
 - File Transfer Protocol (ftp://) is often used for file exchange.

Uniform Resource Locators (URLs)



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E-Mail Addresses

- E-mail addresses consist of:
 - Username: A person's identifying name for a particular domain.
 - The @ symbol.
 - Domain name for the computer that will be handling the person's e-mail (mail server).

Surfing the Web

- Web browser: Used to display Web pages.
- Browser starting or home page: The first page displayed when the browser is opened.
- To navigate to a Web page, you can:
 - Type a URL in the Address bar.
 - Click a hyperlink on a displayed Web page.
 - Select a Favorite/Bookmark or page from the History list.

Surfing the Web



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TOOLBARS
Include Back, Home, and Print buttons, and the Favorites bar.

USING URLS
Type a URL in the Address bar and press Enter to display the corresponding Web page.

USING HYPERLINKS
Point to a hyperlink to see the corresponding URL on the status bar; click the hyperlink to display that page.

TABS
Click the rightmost tab to open a new tab.

USING FAVORITES
Click a page name to display that Web page.

WEB SLICES
Click a Web Slice to see its current status.

STATUS BAR
Includes zoom options and security indicators.

Searching the Web



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- Search site: Web page that helps you find Web pages containing the information you are seeking.
 - Typically search using keywords.



Technology in the Past

- Even the simplest invention, like the plow, had a huge impact on business.
- Before the plow was invented, people had to dig in the earth with their hands.
- Because of the plow, more corn could be planted which meant more corn could be produced.
- Increased corn production meant hiring more people to harvest the corn, selling more corn in the market, and building a corn-selling business.

Modern Technology

- In the past 50 years, electronics revolutionized business and society.
- There is a never-ending demand to make electronic goods smaller, faster, cheaper, and more powerful.
- Computers can store thousands of files electronically, saving time and office space.
- The computer created a boom in nearly all business industries.
- **New Jobs:** The Internet has created a demand for new jobs such as software writers, online writers, and Web page designers.

Virtual Business

- The ease of doing business online has created a boom in new businesses, or **start-ups**.
- This type of business is called a *virtual business*.
- Vocational schools, universities, colleges, and community centers offer technical training or degrees for people interested in expanding their technology skills.
- Technology skills will make you very attractive to an employer.

E-commerce

- Electronic commerce, or **E-commerce**, has made it possible for businesses to directly reach customers anywhere in the world.
- **E-commerce** is a disadvantage to the consumer in four major ways:
 - Buying power (overspending).
 - Other charges (shipping).
 - Immediacy (waiting for product).
 - Relying on observation (not being able to see products directly).

Fundamental Information system concepts

- **What is a system?**
 - *A **system*** is a group of interrelated components working together toward a common goal by accepting inputs and producing outputs in an organized transformation process.
 - Such a system has three basic interacting components or functions: **input**, **processing**, **output**.
 - The systems concept can be made even more useful by including two additional components: **feedback** and **control**.

A business as a system

A business consists of the following interrelated system components:

- **Input:** Economic resources such as people, money, material, machines, land, facilities, energy, and information are acquired by a business from its environment and used in its system activities.
- **Processing:** Organizational Processes such as marketing, manufacturing, and finance transform input into output.
- **Output:** goods and services, payments to employees and suppliers, dividends, taxes, and information are all outputs produced by a business and exchanged with or transferred to its environment.

A business as a system

- **Feedback:** A primary role of information systems is serving as the feedback component of an organizational system. They provide information to management concerning the performance of the organization.
- **Control:** management is the control component of an organizational system.
 - Managers control the operations of a business so that its performance meets organizational goals such as profitability, market share, and social responsibility.
 - Feedback about organizational performance is compared to standards of performance established by management. Management then makes decisions to adjust performance to meet organizational goals.

Summary

- Information Technology definitions
- E-commerce
- Types of computers
- Computer Networks and the Internet
- Management Information System

Review: DEFINITIONS

Information Technology (IT) describes any technology that helps to produce, manipulate, store, communicate, and/or disseminate information.

Online: means using a computer or some other information device, connected through a network, to access information and services from another computer or information device.

A network is a communications system connecting two or more computers; the internet is the largest such network.

Review: IT

- ***Cashless Society***: Electronic wallets - Online bill paying - E-Commerce.
- ***Jobs & Careers***: Hotels - Law Enforcement - Office - Fashion - Job-hunting.
- ***Email***: Invention of Email 71 – Webmail 93 – Hotmail, Yahoo 96 – Gmail 2004.
- ***Cyberspace***: chat rooms, blogs, ATMs, conference calls, texting.
- ***Internet***: the roads that connect towns.
- ***web***: contains the things you see on the roads.

Review: Types of computers

- **Supercomputers:** (weather forecasting, designing aircraft).
- **Mainframes:** (banks, airlines, colleges).
- **Workstations:** powerful personal computers (designing cars, drugs, movie special effects).
- **Microcomputers:** (desktop, laptops, tablets, mobile).
- **Microcontrollers:** *embedded computers* (microwaves, air bag sensors, MP3 players, digital cameras, keyboards, car systems).
- **Servers:** central computer Hold data and programs for clients.

Review: E-commerce

- ***Virtual Business***: doing business online.
- ***E-commerce*** disadvantage: overspending – shipping – Immediacy-observation.
- ***Data*** is raw facts ***Information*** is meaningful data.

Review: *System*

- ***Input:*** Economic resources such as people, money, material, machines, land, facilities, energy, and information
- ***Processing:*** marketing, manufacturing, and finance transform input into output.
- ***Output:*** goods and services, payments to employees and suppliers, taxes, and information.
- ***Feedback:*** provide information to management concerning the performance of the organization.
- ***Control:*** control the operations of a business so that its performance meets organizational goals.

Reference



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