



Lecture 2

Information System

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Information System

- A set of interrelated components that collect, manipulate, store, and distribute data and information and provide a feedback mechanism to meet an objective.
- Information systems are everywhere. An air traveler checks in for a flight using a booth, which sends the check-in information to a network to verify the traveler's reservation and flight information. The terminal processes the information and prints a boarding pass, speeding airport check-in times.



Data, Information and Knowledge

- Raw facts, such as an employee number, total hours worked in a week, inventory part numbers, or sales orders.
- Information A collection of facts organized in such a way that they have additional value beyond the value of the individual facts.



Data, Information and Knowledge

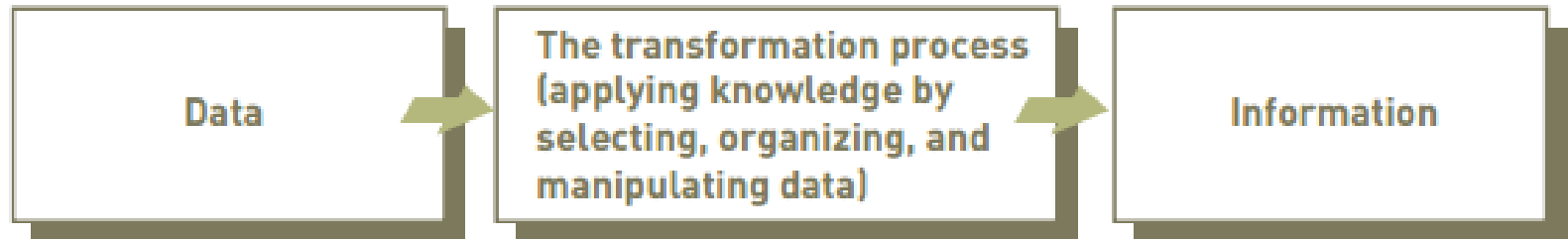
- ▶ Process : Any arithmetic or logical operation performed on data to convert it into information is called process.
- ▶ The process of defining relationships among data to create useful information requires knowledge. The awareness and understanding of a set of information and ways that information can be made useful to support a specific task or reach a decision.



Data, Information and Knowledge

- ▶ Knowledge workers (KWs) are people who create, use, and disseminate knowledge, and are usually professionals in science, engineering, business, and other areas.
- ▶ A knowledge management system (KMS) is an organized collection of people, procedures, software, databases, and devices used to create, store, and use the organization's knowledge and experience.

Data, Information and Knowledge



Characteristics of valuable Information

Accessible	Information should be easily accessible by authorized users so they can obtain it in the right format and at the right time to meet their needs.
Accurate	Accurate information is error free. In some cases, inaccurate information is generated because inaccurate data is fed into the transformation process. (This is commonly called garbage in, garbage out [GIGO].)
Complete	Complete information contains all the important facts. For example, an investment report that does not include all important costs is not complete.
Economical	Information should also be relatively economical to produce. Decision makers must always balance the value of information with the cost of producing it.
Flexible	Flexible information can be used for a variety of purposes. For example, information on how much inventory is on hand for a particular part can be used by a sales representative in closing a sale, by a production manager to determine whether more inventory is needed, and by a financial executive to determine the total value the company has invested in inventory.

Characteristics of valuable Information

Relevant	Relevant information is important to the decision maker. Information showing that lumber prices might drop might not be relevant to a computer chip manufacturer.
Reliable	Reliable information can be trusted by users. In many cases, the reliability of the information depends on the reliability of the data-collection method. In other instances, reliability depends on the source of the information. A rumor from an unknown source that oil prices might go up might not be reliable.
Secure	Information should be secure from access by unauthorized users.
Simple	Information should be simple, not overly complex. Sophisticated and detailed information might not be needed. In fact, too much information can cause information overload, whereby a decision maker has too much information and is unable to determine what is really important.
Timely	Timely information is delivered when it is needed. Knowing last week's weather conditions will not help when trying to decide what coat to wear today.
Verifiable	Information should be verifiable. This means that you can check it to make sure it is correct, perhaps by checking many sources for the same information.

System

- **System-** A System is a **set of two or more interrelated and dependent components** that interact to each other **to achieve a goal.**
- These components may be **referred as a subsystem** that performs a specific function important to and supportive part of the larger system.
- For example, A College has different subsystems like admission, examination, library, payroll etc.

System

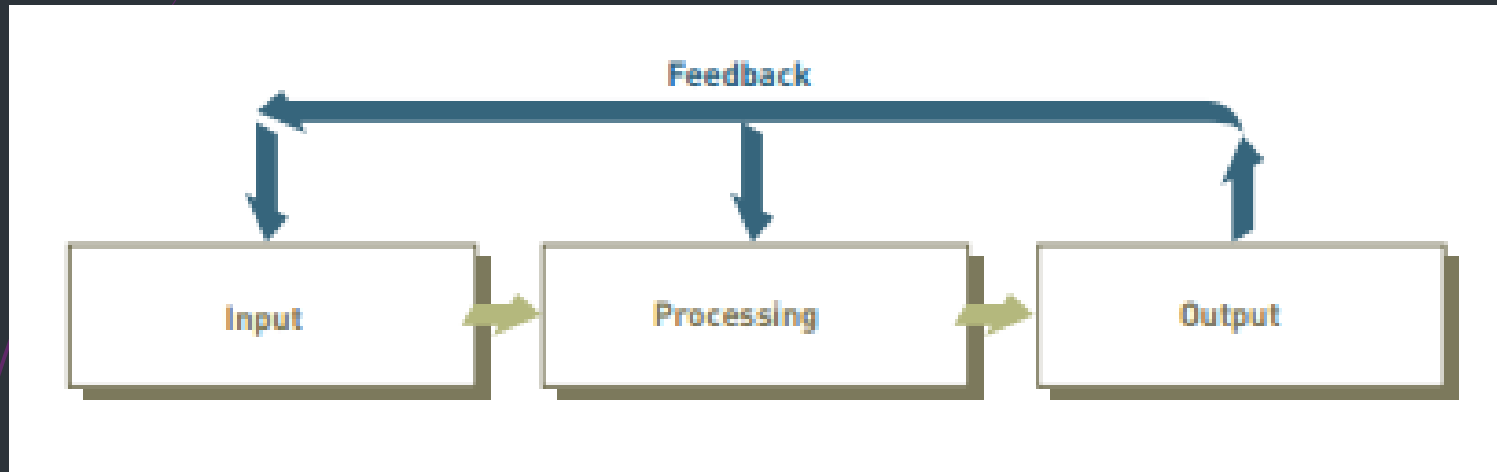
- **System-** A System is a **set of two or more interrelated and dependent components** that interact to each other **to achieve a goal.**
- These components consists of Input, Processing and output.
- System may have feedback mechanism that tells about the validity of a system's output.



Performance and standards of system

- Efficiency : A measure of what is produced divided by what is consumed.
- Effectiveness : A measure of the extent to which a system achieves its goals; it can be computed by dividing the goals actually achieved by the total of the stated goals.
- System performance standard : A specific objective of the system.

Information system



Learning Activity....

Learn What is input, processing, output, Feedback, Forecasting

Categories of IS

- ▶ Manual IS : Human based input, processing and output with feedback.
- ▶ Computer based IS : A single set of hardware, software, databases, telecommunications, people, and procedures that are configured to collect, manipulate, store, and process data into information.

IT infrastructure

- ▶ Technology infrastructure means all the hardware, software, databases, telecommunications, people, and procedures that are configured to collect, manipulate, store, and process data into information
- ▶ Hardware : computer devices used for input, processing and output.
- ▶ Software : computer programs used for operations of computer and human

IT infrastructure

- Database : an organized collection of data and its manipulation.
- Telecommunications : The electronic transmission of signals for communications, which enables organizations to carry out their processes and tasks through effective computer networks.
- Networks : Two or more computers connected to each other to share data and resources.

IT infrastructure

- **Internet** :The world's largest computer network, consisting of thousands of interconnected networks.
- **Intranet** : An internal network based on Web technologies that allows people **within an organization** to exchange information and work on projects.
- **Extranet** : A network based on Web technologies that allows **selected outsiders**, to access authorized resources of a company's intranet.

IT infrastructure

- ▶ **People** can be the most important element in most computer-based information systems. They make the difference between success and failure for most organizations. Information systems personnel include all the people who manage, run, program, and maintain the system.
- ▶ **Procedures** means the strategies, policies, methods, and rules for using a CBIS.

Recommended Readings:

Fundamentals of Information Systems
by Ralph Stair and George Reynolds,
Course Technology; Chapter 1

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