

*CIS (21-774)*  
*Computer Information Systems*  
*in*  
*Industrial Engineering*  
 Department of Industrial Engineering  
 Sharif University of Technology

*Session # 3*



## *Course Description (Continued..)*

- *Contents:*
- *The role of managers in Information Technology (IT)* (3 sessions)
- *Organizational Issues* (3 sessions)
- *Information Technology* (9 sessions)
- *Operational and enterprises systems* (4 sessions)
- *Exciting directions in systems* (3 sessions)
- *E-Business and E-Commerce* (3 sessions)
- *Issues for senior management* (2 sessions)

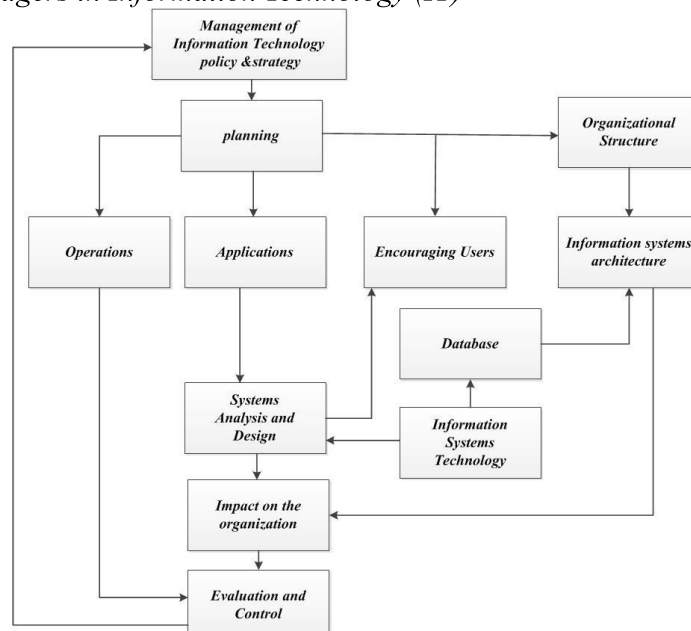
## Course Contents

- *The role of managers in Information Technology (IT)* (3 sessions)
  - *Using technology to transform the organization*
  - *Interpreting and understanding Information*
  - *Information Technology (IT) in perspective*
    - *Frameworks for Information Technology*
    - *The Basics of Information Systems*

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### *The role of managers in Information Technology (IT)*



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## The role of managers in Information Technology (IT)

### ▪ Interpreting and understanding Information

#### ▪ Information:

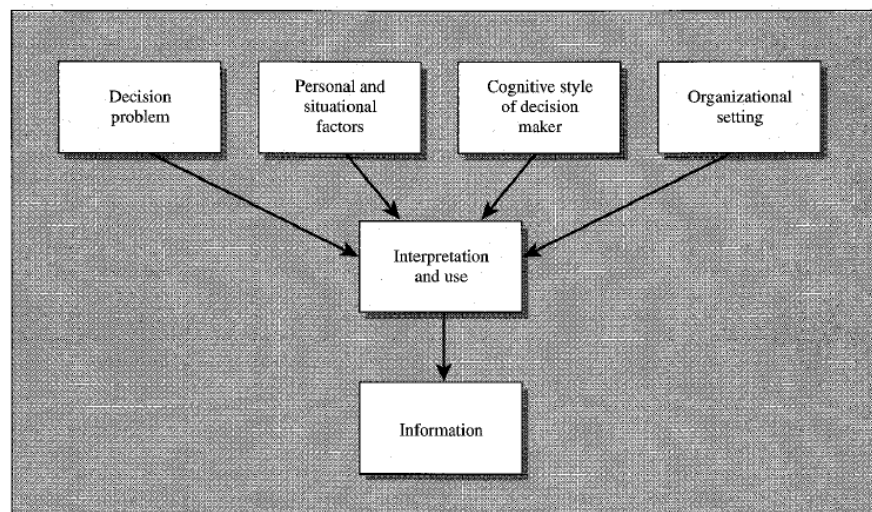
- some tangible or intangible entity that reduces uncertainty about some state or event.

- Information is data that has been processed into a form that is meaningful to the recipient and is of real perceived value in current or prospective decisions (Davis and Olson, 1985, p. 6).

## The role of managers in Information Technology (IT)

### ▪ Interpreting and understanding Information

#### ▪ Interpreting the Information:

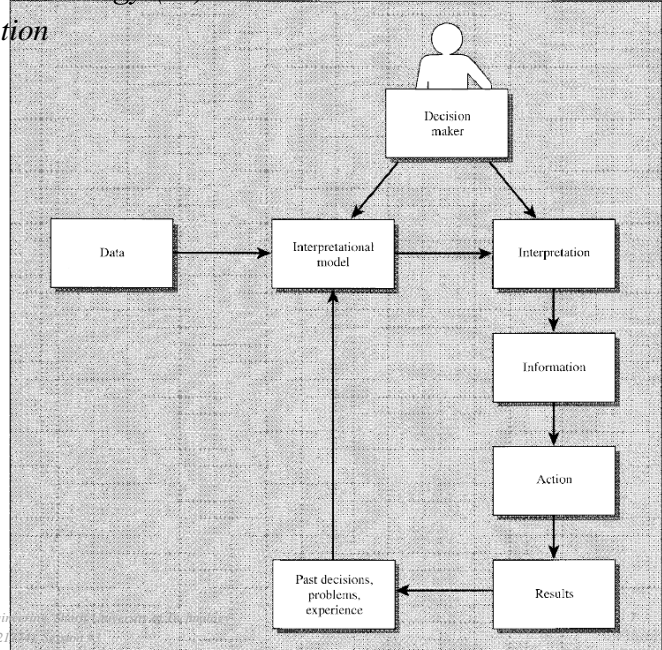


## The role of managers in Information Technology (IT)

### Interpreting and understanding Information

- A model for Interpreting the Information:

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## The role of managers in Information Technology (IT)

### Interpreting and understanding Information

- Characteristics of Information:
  - The time frame for information can be historical or predictive.
  - Information may be expected or it may be unanticipated.
  - Surprise information often alerts us to the existence of a problem; it is also important in developing and evaluating different alternatives.
  - Information may come from sources internal to the organization or from external sources, such as government agencies.
  - Information may be presented in summary form or in detail and vary in accuracy.

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## The role of managers in Information Technology (IT)

### ▪ Interpreting and understanding Information

#### ▪ Characteristics of Information:

Characteristics	Decision type		
	Operational control	Managerial control	Strategic planning
Time frame	Historical	—————→	Predictive
Expectation	Anticipated	—————→	Surprise
Source	Largely internal	—————→	Largely external
Scope	Detailed	—————→	Summary
Frequency	Real time	—————→	Periodic
Organization	Highly structured	—————→	Loosely structured
Precision	Highly precise	—————→	Not overly precise

## The role of managers in Information Technology (IT)

### ▪ Interpreting and understanding Information

#### ▪ Information & knowledge:

- Knowledge is defined as "information plus know-how"
- Knowledge is a strategic resource for many organizations.
- Knowledge builds over time in the heads of employees in the form of
  - Past decisions,
  - Processes in the organization,
  - Characteristics of products,
  - Interests of customers, and
  - Similar experiences.

## *The role of managers in Information Technology (IT)*

- *Interpreting and understanding Information*
  - *Different types of knowledge:*
    - *Explicit and Tacit*
      - *Explicit knowledge is represented by the facts*
      - *Tacit knowledge is something we understand but have difficulty explaining.*
      - *By internalizing explicit knowledge, we turn it into tacit knowledge.*
      - *If you are able to articulate tacit knowledge, you may be able to convert it to explicit knowledge for others to use*

## *The role of managers in Information Technology (IT)*

- *Interpreting and understanding Information*
  - *Decision making:*
    - *A problem exists when the decision maker's ideal situation differs from reality*
  - *Types of Decisions*
    - **Strategic Planning:** *the decision maker develops objectives and allocates resources to obtain them. Decisions in this category are characterized by long time periods and usually involve a substantial investment and effort.*
    - **Managerial Control Decisions:** *involving managerial control concern the use of resources in the organization and often include personnel or financial problems.*
    - **Operational Control:** *An operational control decision covers the day-to-day problems that affect the operation of the firm:*

## The role of managers in Information Technology (IT)

### ▪ Interpreting and understanding Information

#### ▪ Stages in decision making (Simon):

- The first stage is defined as intelligence, which determines that a problem exists. The decision maker must become aware of a problem and gather data about it. We have described this stage as problem finding or identification.
- During the design stage, the problem solver tries to develop a set of alternative solutions. The problem solver asks what approaches are available to solve the problem and evaluates each one.
- In the choice stage, the decision maker selects one of the solutions. If all the alternatives are evaluated well, the choice stage is usually the simplest one to execute.
- We should also add a stage to Simon's model called implementation in which we ensure that the solution is carried out.

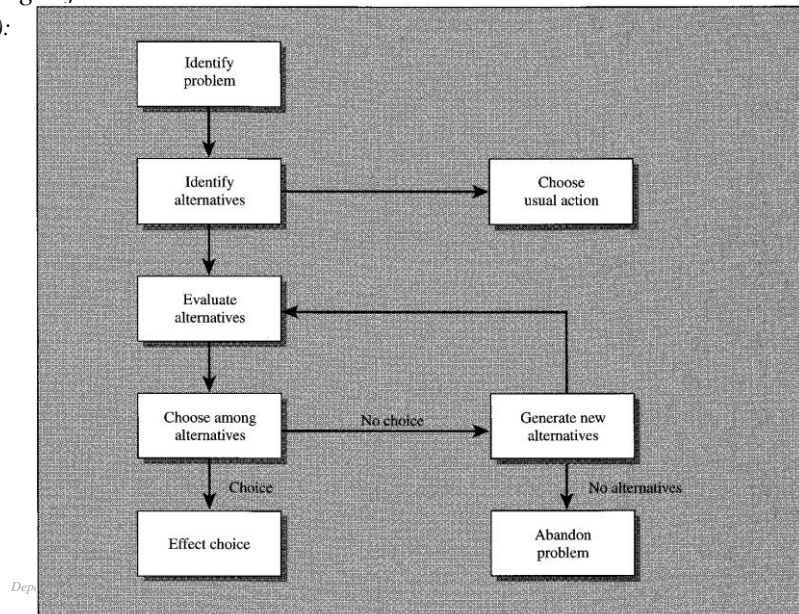
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## The role of managers in Information Technology (IT)

### Interpreting and understanding Information

#### ▪ Stages in decision making (Slade):



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## *The role of managers in Information Technology (IT)*

### *Interpreting and understanding Information*

- *Stages in decision making (Slade):*

#### **Expanding Your Charter**

Delivery firms started in business to transport goods. However, as more firms outsource, these firms are expanding their original charters; they no longer provide transportation, they provide services. Federal Express takes computer orders over the phone for a computer manufacturer and then delivers the computers. Ryder Systems carries tractor repair kits for farmers and assembles the parts in each kit. These logistics firms can become the entire operating division of a company. As one commentator said, "All you need to own is the label and they will do everything else." This little-known business is one of the fastest growing; it has over \$30 billion a year in revenue.

The big operators with estimates of their outsourcing business include Menlo Logistics (\$456 million), Schneider National

(\$800 million), and UPS (\$600 million). Some examples indicate how important logistics firms are to their customers. Xerox lets Ryder put some parts on copy machines. Ryder employees deliver the copiers, set them up, and explain how they work. Menlo workers pump up Nike's basketballs, soccer balls, and footballs since they ship better partially inflated. For some customers, Ryder puts the balls in packages and attaches the price tags.

Communications technologies help these logistics companies provide the kind of service necessary to satisfy the companies who outsource to them and their customers. If you understand your supply chain and can describe the decisions and processes involved, then an outsourcer may be able to provide superior service at a lower cost than the "do-it-yourself" option.

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## *The role of managers in Information Technology (IT)*

- *Interpreting and understanding Information*
  - *The influence of the organization*
    - *In most organizations, groups of individuals are involved in making decisions*
    - *There are a number of ways to classify organizations.*
    - *The best known form is the bureaucracy. Bureaucracies are characterized by a large number of management layers. There are many rules and procedures to protect individuals*
    - *The charismatic organization is dominated by a strong leader. This individual sets the goals of the firm and tends to make all decisions.*
    - *The adaptive organization tries to respond quickly to its environment. The organization stresses rapid response times and does not have a large number of layers of management.*



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