

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

*Session # 4*



## *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)

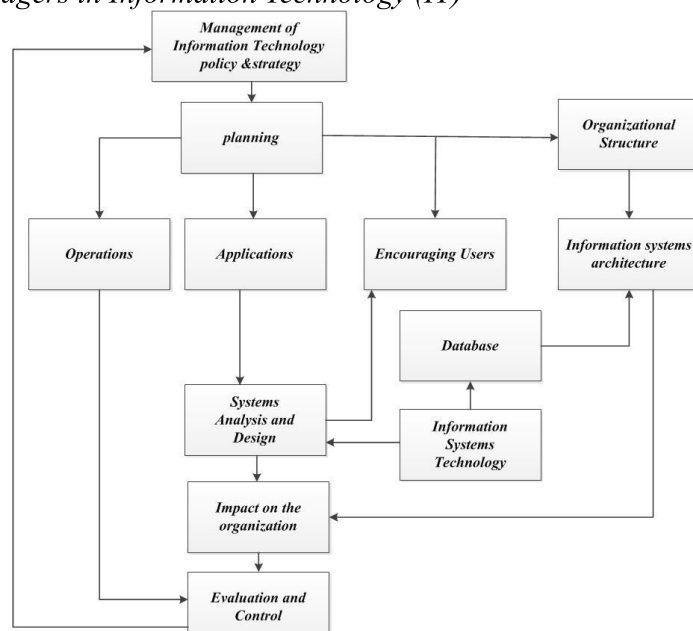
## Course Contents

- *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)*

- *Information Technology (IT) in perspective*
  - *Frameworks for Information Technology :*
    - *A framework is a conceptual model that helps us understand and communicate about information systems. Information technology covers a vast array of topics.*
    - *A framework provides you with a way to organize your thoughts and analyze a problem.*
    - *You need a way of thinking about issues in the field to manage IT successfully.*

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

- *Information Technology (IT) in perspective*
  - *Frameworks for Information Technology :*
    - *Decision-Oriented Frameworks (Simon)*
      - *There are two types of decisions: programmed and non-programmed.*
      - *Programmed decisions are routine and repetitive and require little time spent in the design stage.*
      - *Non-programmed decisions are novel and unstructured, for example, deciding on the marketing mix for a set of products*

## 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)

### ▪ Information Technology (IT) in perspective

- Frameworks for Information Technology :

#### **THE GORRY-SCOTT MORTON FRAMEWORK**

| Classification | Operational control                    | Management control         | Strategic planning                          |
|----------------|--|----------------------------|---|
| Structured     | Order processing, accounts payable     | Budgets, personnel reports | Warehouse location, transportation mode mix |
| Semistructured | Inventory control, production planning | Analysis of variance       | Introduction of new product                 |
| Unstructured   | Cash management                        | Management of personnel    | Planning for R&D                            |

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

### ▪ *Information Technology (IT) in perspective*

#### ▪ *Frameworks for Information Technology :*

- *In a structured decision, the three phases-intelligence, design, and choice are fully structured.*
  
- *In an unstructured decision, all three phases are unstructured. Any decision in between the two extremes is semi-structured.*
  
- *Many individuals in the information systems field believe that unstructured decisions have the greatest payoff for the organization.*

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

### ▪ *Information Technology (IT) in perspective*

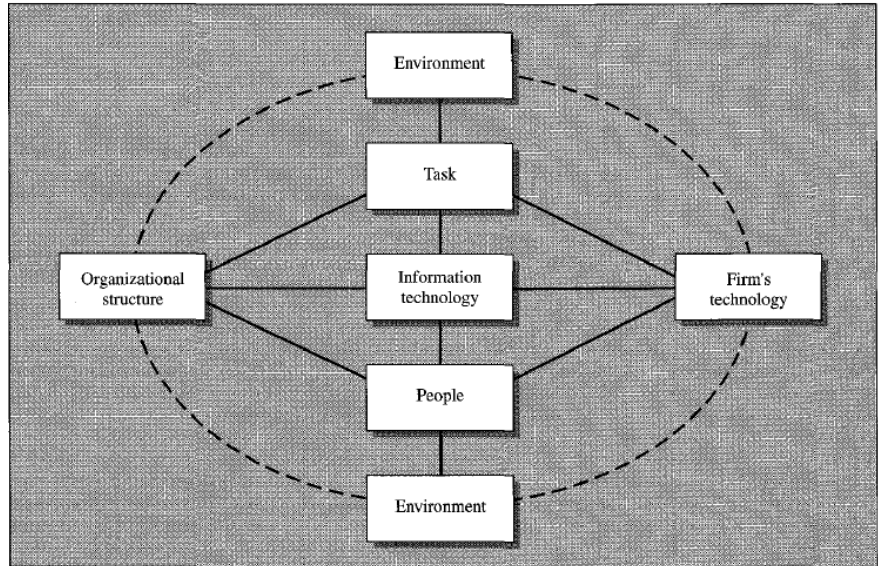
#### ▪ *Frameworks for Information Technology :*

##### ▪ *Decision-Oriented Frameworks*

- *In the structured case, the goal of an information system is usually to improve the processing of information.*
  
- *In an unstructured situation, the goal of the information system is more likely to improve the organization and presentation of information inputs to the decision maker.*

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

- *Information Technology (IT) in perspective*
  - *Frameworks for Information Technology : (Haold Leavitt)*



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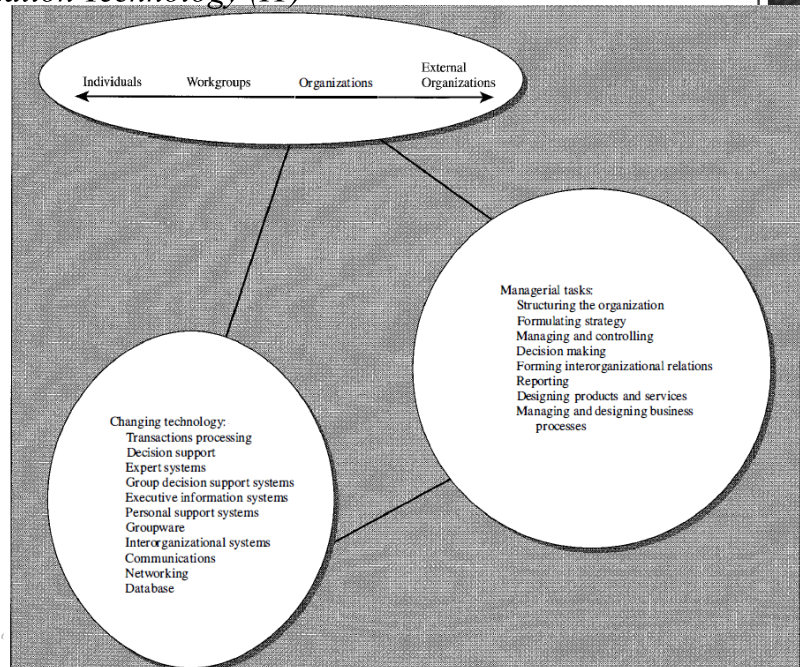
- *Information Technology (IT) in perspective*
  - *Frameworks for Information Technology :*
    - *Processing Transactions*
      - *Today most transactions processing systems operate on-line, and a number of computer vendors compete for the business of providing hardware and software for on-line transactions processing (OLTP) systems.*
  - *Decision Support, Executive IS, and Expert Systems*
    - *Information technology can be used to support decision making in the organization as well as process transactions.*

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

- *Information Technology (IT) in perspective*
  - *Frameworks for Information Technology :*
    - *Supporting Groups and Cooperative Work-Groupware*
      - *One of the most exciting uses of technology is the support of group and cooperative work.*
  - *When individuals in different locations need to communicate with each other to share information, a distributed network of personal computers with appropriate software can provide the coordination mechanism.*

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

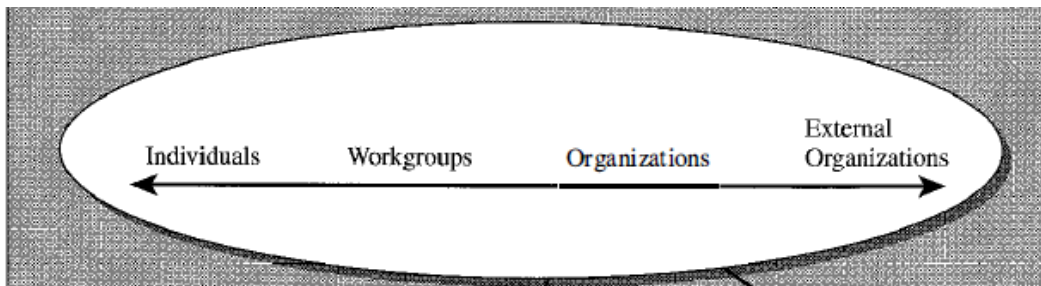
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  - Frameworks for Information Technology :
    - The Gorry-Scott Morton framework



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

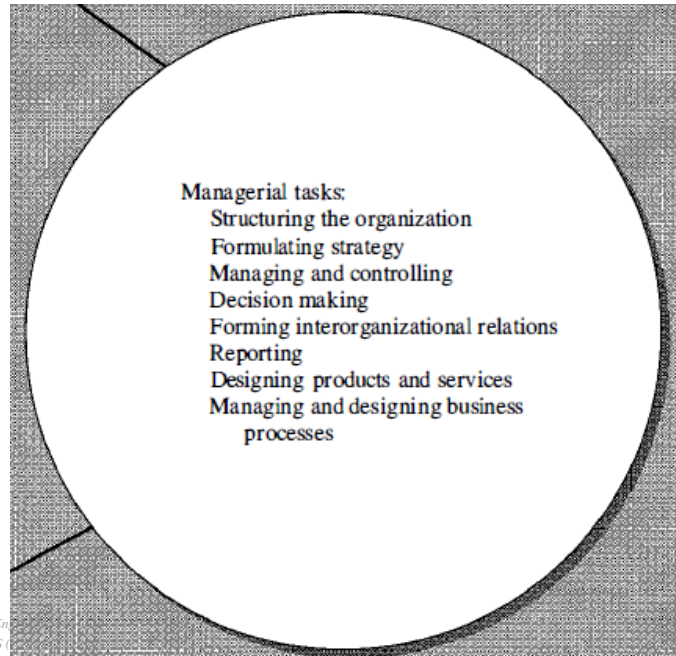
- **Information Technology (IT) in perspective**
  - Frameworks for Information Technology :
    - The Gorry-Scott Morton framework
      - As the figure illustrates, information technology supports individuals, workgroups, organizations, and linkages among organizations.





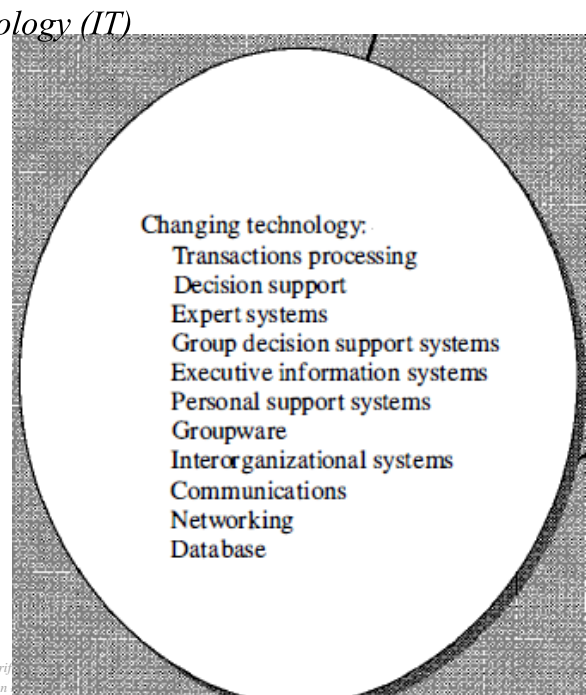
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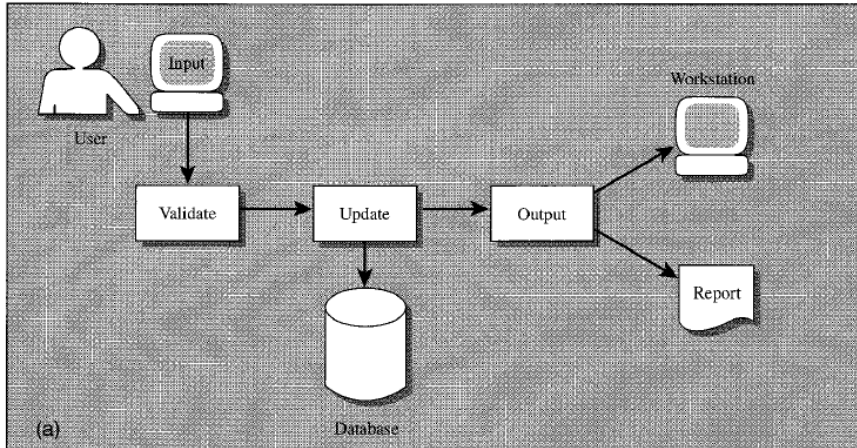
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- *Information Technology (IT) in perspective*
  - *The basics of information systems*
    - *Three different kinds of information systems:*
      - *A transactions processing system (TPS)*
    - *A decision-oriented system (MIS, DSS, GDSS,EIS)*
  - *Communications-oriented system.*

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

### Information Technology (IT) in perspective

- The basics of information systems
  - Three different kinds of information systems:
    - A transactions processing system

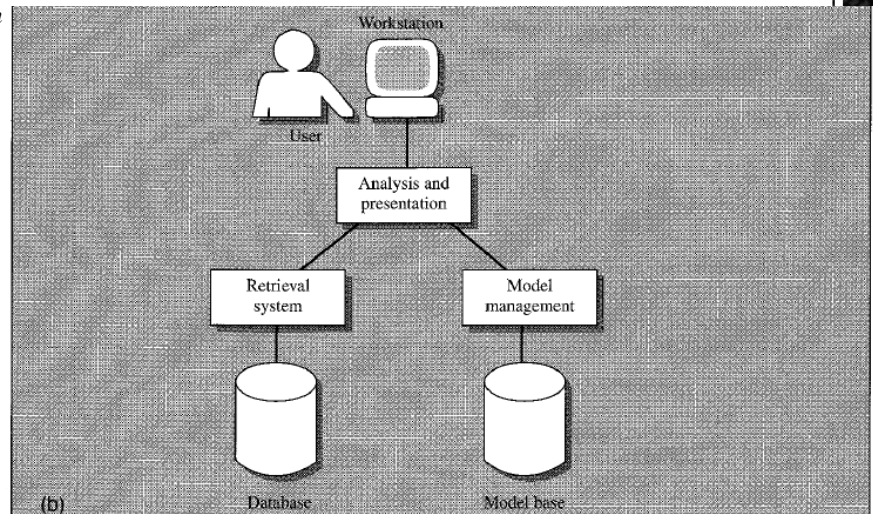


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## The role of managers in Information Technology (IT)

### Information Technology (IT) in perspective

- The basics of information systems
  - Three different kinds of information systems:
    - A decision-oriented system



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

### ▪ *Information Technology (IT) in perspective*

- *The basics of information systems*
  - *Three different kinds of information systems:*
    - *Communications-oriented system.*

