

*CIS (21-774)*  
C*omputer* I*nformation* S*ystems*  
 in  
*Industrial Engineering*  
 Department of Industrial Engineering  
 Sharif University of Technology

*Session # 7*



## *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 Description (Continued..)

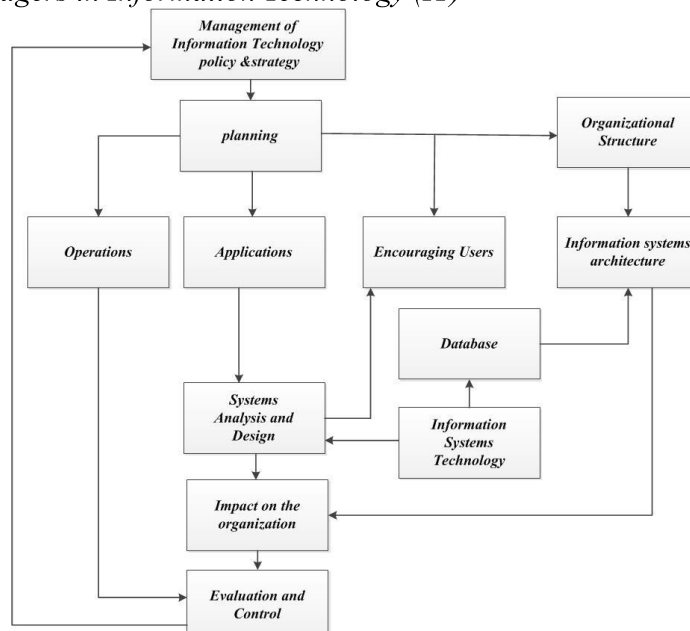
### ▪ Contents:

- *Organizational Issues* (3 sessions)
  - *The impact of Information Technology on the organization*
    - *Modern organization*
    - *Building a T-form organization*
  - *Strategic issues of Information Technology*
    - *Information Technology and Corporate Strategy*
    - *Integrating technology with business technology*
    - *Managing Information Technology*
  - *International business and Information Technology*
    - *The impact of globalization on business*
    - *Key issues in international environment*
    - *Managing Information Technology internationally*

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



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## Organizational Issues

- *Strategic issues of Information Technology*
  - *Information Technology and corporate strategy*
    - *A key task of top management is formulating corporate strategy.*
    - *What opportunities for new directions are available?*
    - *What are competitors doing?*
  - *A firm can continue its present course, maintaining momentum where it is doing well.*
  - *The corporation can dramatically change its strategy by deciding among competing alternatives for new ventures.*

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

- *Information Technology (IT) in perspective*
  - *Investment Opportunities Matrix*

Strategic application	Baxter, Merrill Lynch CMA	High risk–high potential; may be able to estimate return only after implementation	A high potential	0 to 1.0 (.5)
Transformational IT	Virtual organizations, Oticon	Must be combined with changes in management philosophy; good for fast-response organization—risky to change structure, but high potential rewards	A high potential	0 to 1.0 (.5)

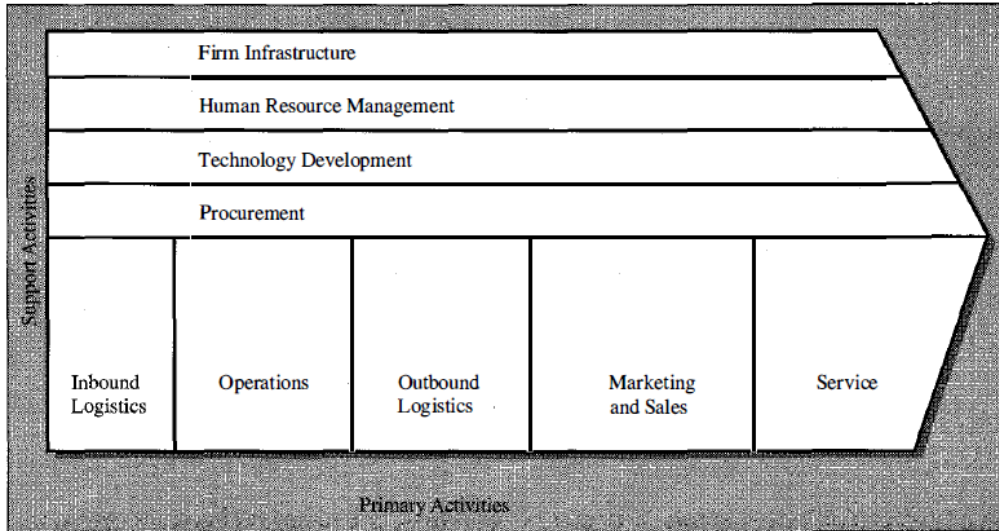
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## Organizational Issues

- *Strategic issues of Information Technology*
  - *Michael Porter at Harvard has popularized the concept of the "value chain," the activities in an organization that add value to its products or services*



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## Organizational Issues

- *Strategic issues of Information Technology*
  - *Information Technology and corporate strategy*
    - *Low-cost producer.*  
*Here the firm tries to have the lowest costs in the industry so that it can compete on price.*
    - *Differentiation.*  
*The firm tries to separate its product image from that of the competition in such a way that the customer wants its product.*
    - *Market niche strategy.*  
*A number of firms try to find a market niche and exploit it.*

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## *Organizational Issues*

- *Strategic issues of Information Technology*
  - *Information Technology and corporate strategy*
    - *Customer Driven*
    - *Reducing Cycle Times*
    - *Global Competition*
    - *Right-Sizing*
    - *Quality*

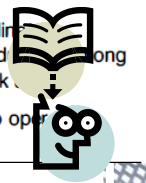
## *Organizational Issues*

- *Strategic issues of Information Technology*
  - *Capitalizing on Information Technology*
    - *Look for ways to incorporate technology in a product or service*
    - *Seek ways to use technology to connect with other firms.*
    - *Look for ways to use technology to make dramatic changes in the way you structure the organization.*
    - *Integrate technology with planning.*

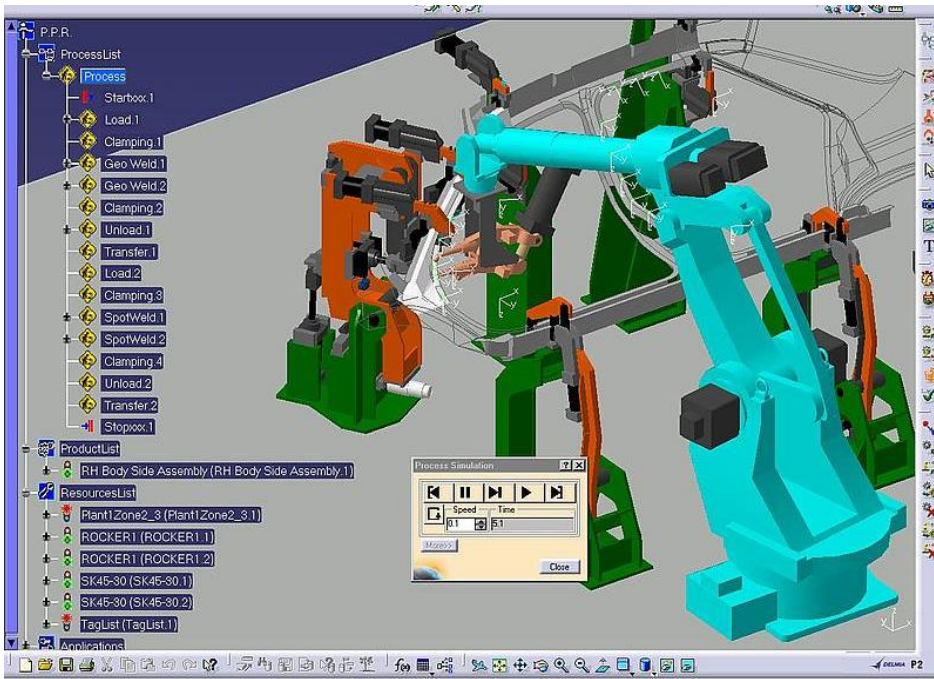
Organizational Issues  
 The impact of Information Technology on the organization  
 Creating new types of organizations

**IT DESIGN VARIABLES AND FOUR PROTOTYPICAL ORGANIZATIONS**

Organization variable	Virtual	Negotiated organizations	Traditional	Vertically integrated conglomerates
Virtual components	Substitute electronic for physical components	Substitute electronic for physical components	Use to replace isolated components	Force component onto electronic subsidiary
Electronic linking and communications	Essential part	Essential part	Optional	Essential part
Technological matrixing	Participate in matrixed group	Use for coordination	Use for various groups	Use for coordination and task forces
Technological leveling	Use to supervise remote workers and groups	NA	Use to reduce layers of management	Use to reduce layers of management
Electronic workflows	Crucial part of strategy	Crucial part of strategy	Use where applicable to restructure work	Key to coordinate work units
Production automation	NA	Communicate designs	Use where applicable	Coordinate production along work units
Electronic customer/supplier links	Used extensively	Used extensively	Potentially important	Key to operation



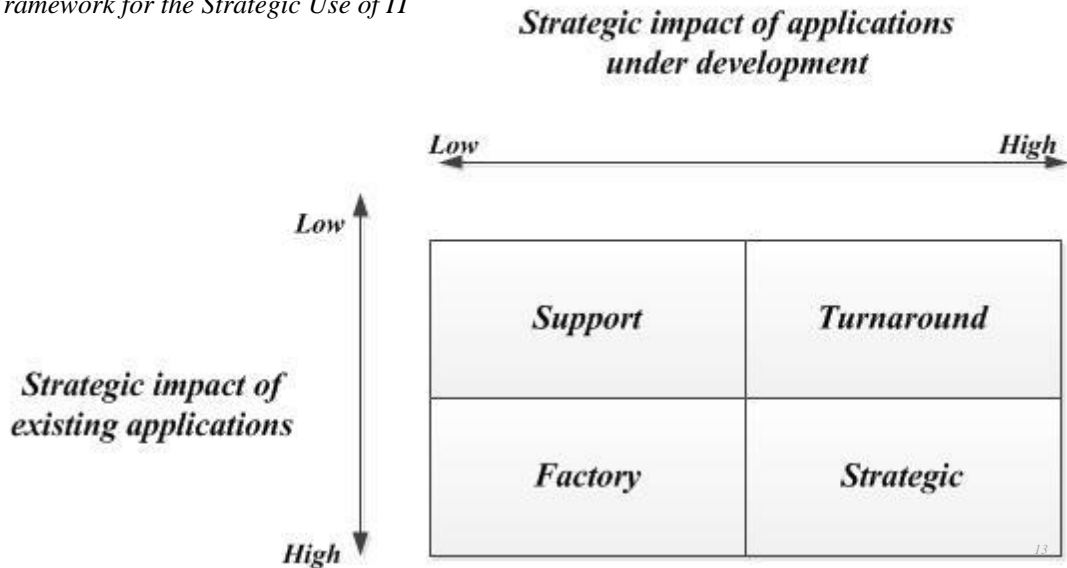
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Computer-aided design  
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 As of planes was the  
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## Organizational Issues

- *Strategic issues of Information Technology*
  - *A Framework for the Strategic Use of IT*

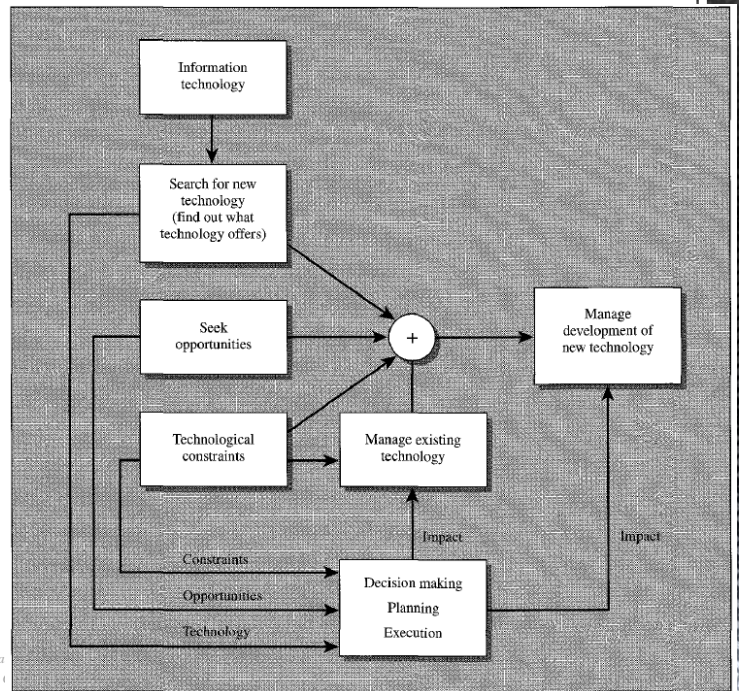


## Organizational Issues

- *Strategic issues of Information Technology*
  - *Integrating technology with the business environment*
    - *One of the most significant management challenges during the coming decade will be to integrate business and technology.*
    - *Successful managers must be able to integrate their knowledge of Information Technology and their business knowledge in making decisions.*
    - *The manager should be aware of the opportunities provided by the technology and the constraints that already exist for the firm in developing new technologies.*
    - *The manager should also recognize that as decisions are made, the alternatives chosen will have an impact on technology and its development within the firm*

*Organizational Issues*

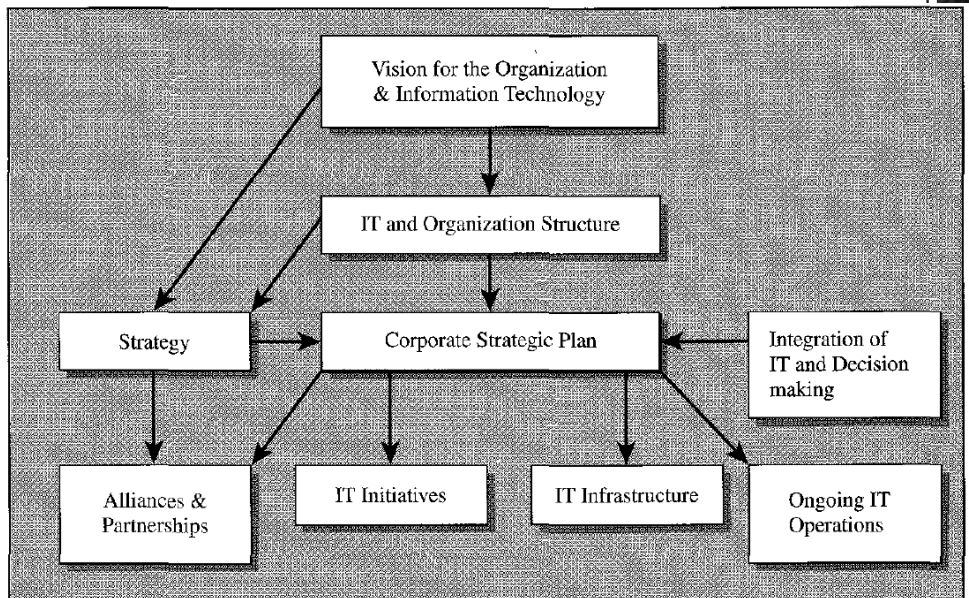
- *Strategic issues of Information Technology*
  - *Integrating technology with the business environment*



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*Organizational Issues*

- *Strategic issues of Information Technology*
  - *Managing Information Technology*





## Organizational Issues

- *Strategic issues of Information Technology*
  - *Managing Information Technology:: A Vision of the Organization and Technology*
    - *Visions are rare and difficult to create; leaders are frequently criticized for lack of vision.*
    - *A fundamental responsibility for management is to develop a vision for the business and for the role of information*
    - *The vision should describe the mission of the organization and identify the products and services it produces.*
    - *It should identify the markets in which the firm will compete and its strategy for competition.*

## Organizational Issues

- *Strategic issues of Information Technology*
  - *Managing Information Technology:: Integrating Technology and Decision Making*
    - *A significant responsibility of management is to integrate technology with all business decisions.*
    - *Integration means that the manager is aware of how new technology can create opportunities.*
    - *A decision to enter a new line of business has a direct effect on existing information-processing systems.*

## *Organizational Issues*

- *Strategic issues of Information Technology*
  - *Managing Information Technology:: A Corporate Plan for Strategy*
    - *A corporate strategic plan comes from the firm's vision for its future activities.*
    - *Given the contents of the corporate strategic plan, it is possible for managers in the IT function to develop a more detailed IT plan to support the corporation.*

## *Organizational Issues*

- *Strategic issues of Information Technology*
  - *Managing Information Technology:: Ongoing Management of IT*
    - *Visions and strategy are long term in nature; the firm still faces the day-to-day task of managing information technology.*
    - *This work consists of two different kinds of tasks :*
      - *Developing new applications and*
      - *Operating the existing stock of applications.*

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

- **HW#05**
  - *Strategic Advantage*
  - *Developing systems for strategic advantage (or calling them strategic) has become very fashionable. As the examples in this chapter suggest, it is unlikely that what is strategic today started out that way. Companies developed systems for one set of reasons. Later they saw extensions that turned the systems into strategic or competitive applications.*
  - *When an organization exists to make a profit and functions in an industry with competitors, it is relatively easy to look at a system and determine that it is strategic.*
  - *What happens in the case of a different organization, such as a university?*
  - *Can you identify the "competitors" of your university? How can information technology be used to make your institution more competitive?*
- *The Home work should be sent to [omidf@ie.sharif.edu](mailto:omidf@ie.sharif.edu) till Monday, 6<sup>th</sup> of Aban (Oct, 28<sup>th</sup>, 2013)*
- *Email subject: "HW05:studentnumber"*

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