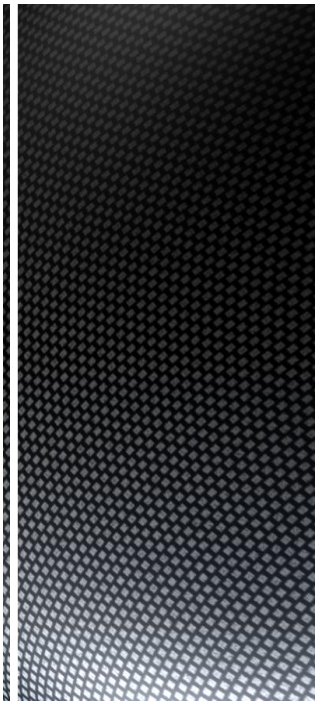
CIS (21-774)
Computer Information Systems
in
Industrial Engineering

Department of Industrial Engineering
Sharif University of Technology

Session # 5



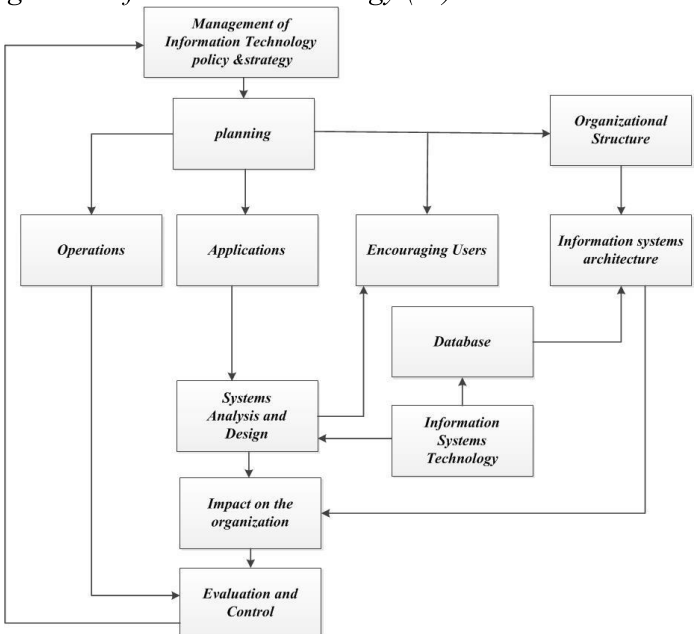
Course Description (Continued..)

- *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*

The role of managers in Information Technology (IT)



The role of managers in Information Technology (IT)

- *Information Technology (IT) in perspective*
  - *Is there value in IT?*
    - *In deciding whether to make an investment, companies frequently compute the*

Net Present Value (NPV)

of a proposal, using an interest rate that represents a minimum acceptable return for the firm.

The role of managers in Information Technology (IT)

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

***IT* INVESTMENT OPPORTUNITIES MATRIX**

Type of investment	Example	Comments	Upside	Probability of return
Infrastructure	Wide Area Network	Support current business—may allow for future investments	Little itself, but allows new programs	.2 to 1.0 (.5)
Required: no return Managerial control	OSHA reporting system, budgets	A cost of doing business	Almost none	0 to .5 (.2)
No other way to do the job	Computerized reservations system, Air Traffic Control	Enable new task or process, provide better customer service, new products	Could gain more than forecast	.5 to 1.0 (.75)

The role of managers in Information Technology (IT)

- *Information Technology (IT) in perspective*
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Direct return from IT	Merrill Lynch, Chrysler	Structured, cost/ benefit and NPV appropriate	A little if you can build on the investment	.7 to 1.0 (.9)
Indirect returns	CRS in travel agencies	Potential for considerable return, but indirect benefits hard to estimate	Could be substantial future benefits	0 to 1.0 (.5)
Competitive necessity	Bank ATMs, much EDI Electronic commerce	Need the system to compete in the business; what is the cost of not investing in technology?	Very little if you are following the industry	0 to 1.0 (.2)

The role of managers in Information Technology (IT)

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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)

The role of managers in Information Technology (IT)

- *HW#*

  There are information systems all around us. We encounter them at the university, in stores and banks, when making airline, hotel, or rental-car reservations, and in many other aspects of our daily routine. For this project, choose an information system and critique it.

  First, describe the system: What are its objectives? Who are the users? What is the underlying technology including computers, databases, and communications network? Trace the input of the system to determine who inputs what information. Look at the output of the system. Is it a physical document? Often, systems have to store data on a more or less permanent basis in files or in a database. Can you figure out what is in the database for your system?

  Draw a diagram of the input, processing, database, and outputs of your system. What are the major strengths of the system? Do you see any problems with it? What can you suggest to improve the system?

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