

CO1126

# Management Information System



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# INTRODUCTION TO MIS

# MIS –MANAGEMENT INFORMATION SYSTEM

- ▶ Data- Unorganized Facts, Raw Facts
- ▶ Information- Organized Data that have a particular meaning within a specific context.
- ▶ Knowledge-Understanding the information and make decision, experience, explanation.
- ▶ System- is a group of components that interact to achieve a purpose.
- ▶ Information System-is a group of components that interact to produce information. Collect input, process, and output data and information and provide a feedback/control mechanism.
- ▶ CBIS-Computer Based Information System are information system that includes computer.
- ▶ MIS-System used to handle management information

# Systems: Some Examples

- ▶ University

- ▶ Inputs:

- Students, Faculty, Textbooks

- ▶ Processes:

- Education/Courses

- ▶ Output:

- Graduates

- ▶ Feedback:

- Surveys, grades

- ▶ Toyota Plant

- ▶ Inputs:

- Raw materials, components

- ▶ Processes:

- Assembly line

- ▶ Output:

- Mini-vans

- ▶ Feedback:

- Customer surveys, quality reports

- ▶ Fast Food IS

- ▶ Inputs:

- Consumer orders

- ▶ Processes:

- Processing software

- ▶ Output:

- Receipts, cook's order list

- ▶ Feedback:

- Invalid entry message

- ▶ Video Store IS

- ▶ Inputs:

- Rentals, returns

- ▶ Processes:

- Processing software

- ▶ Output:

- Reports, rental agreement

- ▶ Feedback:

- Error reports

# The Value of Information – Information Quality (IQ)

- ▶ Accuracy (Is information correct? Can we rely on it?)
- ▶ Timeliness (How current is the information?)
- ▶ Accessibility (Can the information be accessed when needed?)
- ▶ Engagement (Is the information capable of affecting a decision?)
- ▶ Application (Is the information relevant to the current context?)
- ▶ Completeness (Are any of the values missing?)
- ▶ Consistency (Is aggregate/summary info in agreement w/ detailed info?)
- ▶ Rarity (Is the information previously known?)

# MIS

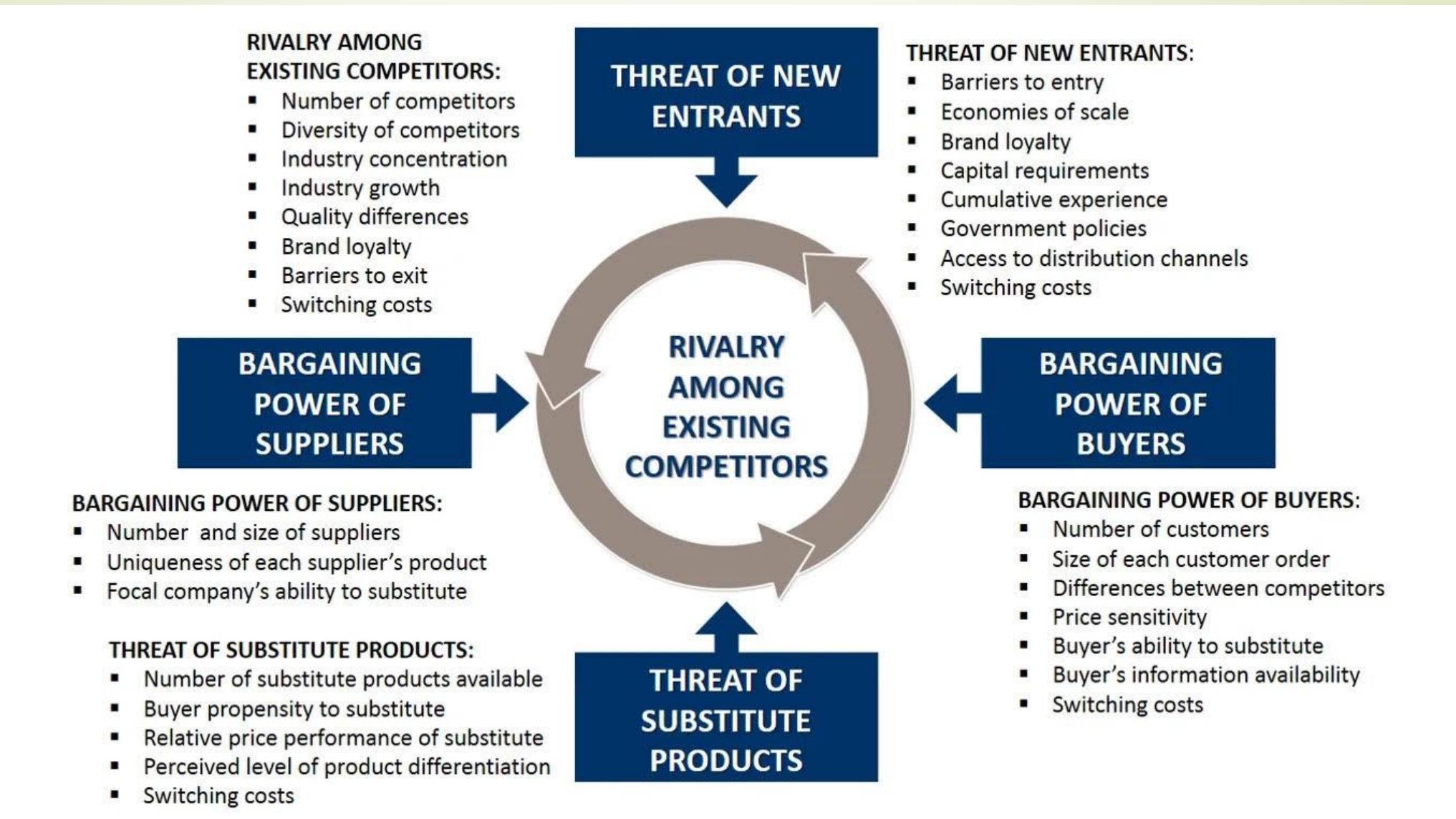
- ▶ MIS is a computer based system that provides information needed to manage organization effectively.
- ▶ MIS can include software that helps in decision making, data resources such as databases, the hardware resources of the system, plus decision support system, people management and project management and any other computerized process that enable the department to run efficiently.
- ▶ Peter Keen, one of the leaders in the field of MIS define MIS as,
  - ▶ “The effective design, delivery and use of information system in **organization**”
- ▶ We alter the Keen's Definition as
  - ▶ “MIS is the development and use of information systems in organization”

# Primary Resources

- MIS involves 3 primary resources:
  - People-Set goals, carry out tasks, make decisions, to be successful in their use of technology, people must be information literate and technology literate.
  - Information- Organized Data that have a particular meaning within a specific context.
  - Technology-Is any computer based tool that people use to work with information and support the information and information-processing needs of an organization.

# Porter's Five Forces Model

- ▶ To meet the technology and information needs of an organization, you must understand the industry, build the appropriate business strategy, identify important business process and finally select your technology.
- ▶ It is a method for analysing competition of a business.
- ▶ The Five Force Model helps business people to assess an industry structure, with the impact of IT.
  - ▶ Buyer Power
  - ▶ Supplier Power
  - ▶ Threat of substitute products or service (how likely are customers to switch to an alternative)
  - ▶ Threat of new entrants
  - ▶ Rivalry among existing competitors



# MIS in Airline industry

- ▶ Generation I – A database-supported transactional system used for reservations, sale of airline tickets, and inventory management.
- ▶ Generation II – A database-supported on-line transactional system used for reservations, airline tickets sales, and inventory management. Also includes sales monitoring functionality and revenue management for each individual flight in a given time period.
- ▶ Generation III –A Generation II system that also includes modules allowing for benchmarking an airline against the competition. This system would include a statistical modeling tool allowing for trend analysis, forecasting, etc.
- ▶ Generation IV –A Generation III system that also includes modules allowing for the implementation of a pricing strategy based on probability, knowledge database, and heuristic methods to obtain an optimal profit from each sale

- ▶ Data warehouse, as an element of Generation IV MIS system, would incorporate historical, current, and future airfare information such as price, rules, flight information, fare class, where the sale originates, etc.
- ▶ Modeling database would include yield management algorithms helping with the following decisions:
  - ▶ 1. What price should be set for the next sold ticket; using marginal calculus models
  - ▶ 2. What combination of prices will bring an optimal profit/revenue for each flight; using optimization and simulation models.
- In addition, the models would include the elements of risk assessment (for example: how many group tickets could be sold on each flight; the probability of groups returning their tickets; could the returned tickets be resold, etc.).
- ▶ Knowledge base would include information about the competition, financial results of earlier promotions, etc.
- ▶ MIS itself uses all price changes as input, and converts them
  - ▶ using all three supporting elements (DW, MD, and KB) – into new airfares.
  - ▶ Where a sophisticated MIS does not support pricing decisions, airlines are not able to establish a competitive price.
- ▶ Thus:
  - ▶ 1. The airline is loosing revenue if its price is higher than the competition; plane flies empty
  - ▶ 2. The airline is loosing profit if its prices are too low

## Exercise:

- ▶ Differentiate between Information Technology(IT) and Information System (IS).
- ▶ Analyze the application of MIS in WWW Search.