كلية المنصور الجامعة

Al – Mansour University College

Computer Science and Information System Department

4th Stage / Information System

Course 1

Management Information System

Lecture_01

Introduction Management Information System

By

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1.1Introduction

A management information system (MIS) is an information system used for decision-making, and for the coordination, control, analysis, and visualization of information in an organization. MIS is a collection of systems, hardware, procedures and people that all work together to process, store, and produce information that is useful to the organization.The goal of the use of a management information system is to increase the value and profits of the business. MIS can be divided into five *eras* :-

1- First Era – Mainframe and minicomputer computing.
2- Second Era – Personal computers.
3- Third Era – Client/server networks.
4- Fourth Era – Enterprise computing.
5- Fifth Era – Cloud computing.

The terms management information systems (**MIS**), information management systems (**IMS**), information system (**IS**) , enterprise resource planning (**ERP**), computer science, electrical computer engineering, and information technology management (IT) are often confused. MIS is a hierarchical subset of information systems. MIS are more organization-focused narrowing in on leveraging information technology to increase business value. Computer science is more software-focused, dealing with the applications that may be used in MIS. Electrical computer engineering is product-focused mainly dealing with the architecture behind computer systems. ERP software is a subset of MIS and IT management refers to the technical management of an IT department which may include MIS,as showen in figure (1.1).

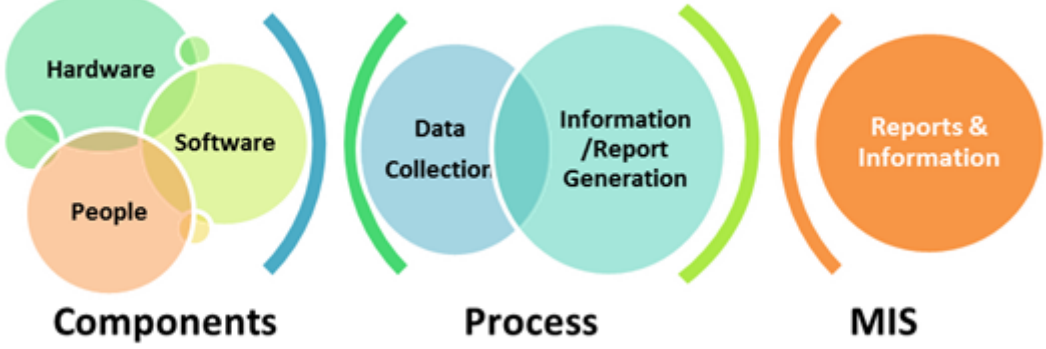

Figure (1.1): Management Information Systems

1.2 Why We Need For MIS

The following are some of the justifications for having an MIS system

1. **Decision makers need information to make effective decisions.** Management Information Systems (MIS) make this possible.
2. **MIS systems facilitate communication within and outside the organization** – employees within the organization are able to easily access the required information for the day to day operations. Facilitates such as the Short Message Service (SMS) & Email make it possible to communicate with customers and suppliers from within the MIS system that an organization is using.
3. **Record keeping** – management information systems record all business transactions of an organization and provide a reference point for the transactions.

1.3 Components of MIS

The major components of a typical management information system are;

1. **People** – people who use the information system
2. **Data** – the data that the information system records
3. **Business Procedures** – procedures put in place on how to record, store and analyze data
4. **Hardware** – these include servers, workstations, networking equipment, printers, etc.
5. **Software** – these are programs used to handle the data. These include programs such as spreadsheet programs, database software, etc.

1.4 Types of Information Systems

The type of information system that a user uses depends on their level in an organization. The following diagram shows the three major levels of users in an organization and the type of information system that they use,as shown in figure(1.2).

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Figure(1.2): Types of Information Systems

1. **Operational management level**

The operational level is concerned with performing day to day business transactions of the organization.Examples of users at this level of management include cashiers at a point of sale, bank tellers, nurses in a hospital, customer care staff, etc.
Users at this level use make structured decisions. This means that they have defined rules that guides them while making decisions.For example, if a store sells items on credit and they have a credit policy that has some set limit on the borrowing. All the sales person needs to decide whether to give credit to a customer or not is based on the current credit information from the system.

2. **Tactical Management Level**

This organization level is dominated by middle-level managers, heads of departments, supervisors, etc. The users at this level usually oversee the activities of the users at the operational management level.Tactical users make semi-structured decisions. The decisions are partly based on set guidelines and judgmental calls. As an example, a tactical manager can check the credit limit and payment history of a customer and decide to make an exception to raise the credit limit for a particular customer. The decision is partly structured in the sense that the tactical manager has to use existing information to identify a payment history that benefits the organization and an allowed increase percentage.

3. **Strategic Management Level**

This is the most senior level in an organization. The users at this level make unstructured decisions. Senior level managers are concerned with the long-term planning of the organization. They use information from tactical managers and external data to guide them when making unstructured decisions.

4. **Transaction Processing Systems (TPS)**

This type of information system is used to record the day to day transactions of a business. An example of a Transaction Processing System is a Point of Sale (POS) system. A POS system is used to record the daily sales.

5. **Management Information Systems (MIS)**

Management Information Systems are used to guide tactic managers to make semi-structured decisions. The output from the transaction processing system is used as input to the MIS system.

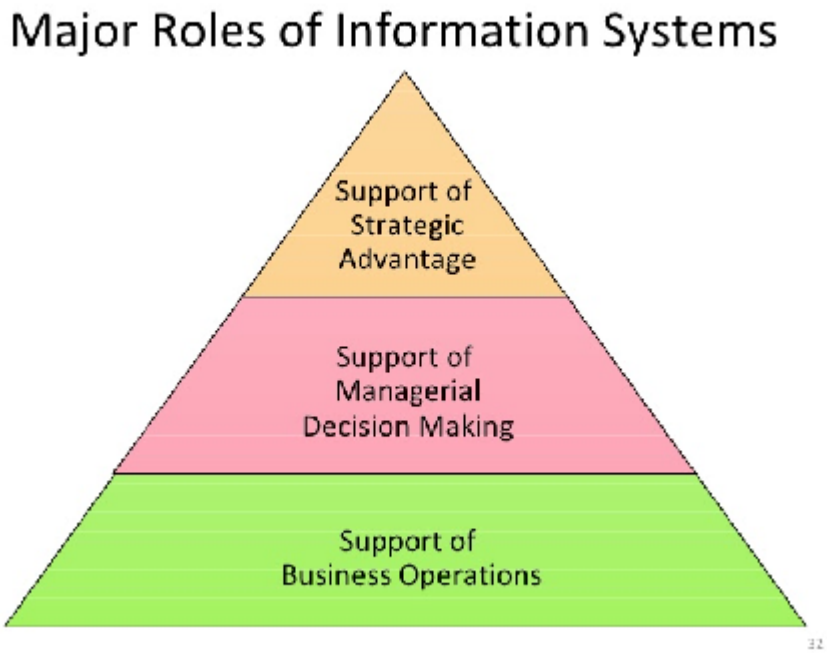
6. **Decision Support Systems (DSS)**

Decision support systems are used by top level managers to make semi-structured decisions. The output from the Management Information System is used as input to the decision support system.DSS systems also get the data input from external sources such as current market forces, competition, etc.

1.5 The Role of Information Systems in Business

There are three fundamental reasons(figure 1.3):-

1- Support of its business process and operations.
2- Support of decision making by its employees and managers.
3- Support of its strategies for competitive advantage.



Figure(1.3) : Role of MIS

1.6 Types of management information system (MIS)

The following are types of information systems used to create reports, extract data, and assist in the decision making processes of middle and operational level managers.

1- **Decision support systems (DSS)** are computer program applications used by middle and higher management to compile information from a wide range of sources to support problem solving and decision making. A DSS is used mostly for semi-structured and unstructured decision problems.

2- **Executive information systems (EIS)** is a reporting tool that provides quick access to summarized reports coming from all company levels and departments such as accounting, human resources and operations.

3- **Marketing information systems** are management Information Systems designed specifically for managing the marketing aspects of the business.

4- Accounting information systems are focused accounting functions.

5- Human resource management systems are used for personnel aspects.

6- Office automation systems (OAS) support communication and productivity in the enterprise by automating workflow and eliminating bottlenecks. OAS may be implemented at any and all levels of management.

7- School Information Management Systems (SIMS) cover school administration, often including teaching and learning materials.

8- Enterprise resource planning (ERP) software facilitates the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders.[8]

9- Local Databases, can be small, simplified tools for managers and are considered to be a primal or base level version of MIS.

1.7 The Advantages and Disadvantages

The following are some of the benefits that can be attained using MIS:-

1. Improve an organization's operational efficiency, add value to existing products, engender innovation and new product development, and help managers make better decisions.

2. Companies are able to identify their strengths and weaknesses due to the presence of revenue reports, employee performance records, etc. Identifying these aspects can help a company improve its business processes and operations.

3. Giving an overall picture of the company.

4. Acting as a communication and planning tool.

5. The availability of customer data and feedback can help the company to align its business processes according to the needs of its customers. The effective management of customer data can help the company to perform direct marketing and promotion activities.

6. MIS can help a company gain a competitive advantage.
7. MIS reports can help with decision-making as well as reduce downtime for actionable items.

Some of the disadvantages of MIS systems:

1. Retrieval and dissemination are dependent on technology hardware and software.
2. Potential for inaccurate information.