Conceptual Overview of MIS and its Importance in an Organization

Mohd. Ehmer Khan[1*] Farmeena Khan[2]

1. Department of Computer Science, Singhania University, Jhunjhunu, Rajasthan, India

2. Janardan Rai Nagar Rajasthan Vidyapeeth University, Rajasthan, India

* E-mail of the corresponding author: ehmerkhan@gmail.com

Abstract

A management information system is an integrated, uniform method for collecting and reporting information about a particular program, event or activity. We can also define MIS as a user machine system which is used for providing information to support the operation and decision making function in an organization. MIS support decision making at all levels of the organization and also supports decision making in both structured and unstructured problem environment. In our paper we have described about the MIS and its importance in an organization. We have also explained various types of information system and the steps involve in designing and developing of an effective MIS in an organization.

Keywords: Transactional Processing System, Management Reporting System, Decision Support System and Executive Support System.

1. Introduction

Information processing is a major societal activity and before defining MIS conceptually and operationally we must first develop conceptual framework for management, information and the system separately.

➤ Management: Management emphasis optimal use of information systems for managerial decision making rather than stressing on technology. There are two common definition of management-decision oriented and function oriented. Decision oriented definition of management are provided by decision theorist such as Peter Drucker who was a management thinker and has viewed that the life of manager is a perpetual decision making activities.

  Stanley vence has provided a more formal decision oriented definition as follows "Management is simply a process of decision making and control over the action of human being for the purpose of attaining pre determined goals".

  On the other hand function oriented definition of management put more emphasis on various functions performed by managers and make them understand the exact nature and scope of management.

➤ Information: The second and the important constituent of MIS is information. In MIS information is the processed data which is used for informative purpose or decision making. So, we can define information as the data that has been processed into a form that is meaningful and helpful in decision making.

  The three most important characteristics of useful information are

> a) Timeliness
> b) Adequacy, and
> c) Form

➤ System: The third important element of MIS is system, which is an interrelated set of elements that function as a whole. So, we can define system as "an organized or complex whole; an assemblage or

combination of thinks or parts forming a complex unitary whole".

2. Understanding the Concept of Management Information System

Management information system has been described as a pyramid structure which is explained in Figure 1. In a pyramid the bottom layer consists of information for transaction decisions, status enquiry etc. The next layer is for operational decisions which include day to day activities such as daily scheduling, payroll, sales analysis etc. After operational decision the next layer is tactical planning which deals with production bottle neck, performance appraisal, advertising etc. The topmost layer consists the information for strategic decision which is used by higher level of management.

Management information system converts the data (internal/external source describe in Figure 2.) into the information which can be used managers at different levels to carry out effective decisions for planning, directing, coordinating, decision making and controlling activities for which they are responsible.

There are various factors influencing the success or failure of an information system such as

   i. Concentration on low level data processing.

   ii. Inappropriate management demands.

   iii. Lack of team work and professional standards.

   iv. Inadequate analysis of information.

   v. More emphasis on computer system

MIS is needed:

   i. To meet programmatic and federal requirement for use in evaluating.

   ii. To guide staff in more effective service delivery.

   iii. To support program promotions and public awareness activities.

Benefits of MIS:

   i. A good MIS will offer significant efficiency gains and time saving.

   ii. It improves profits and deliver measureable cost saving.

   iii. It can cut down unrecognized cost that is transaction cost in an organization.

   iv. MIS improves effectiveness and efficiency.

3. Types of Information Management Systems

3.1 Transactional Processing System (TPS)

TPS supports the processing of a firm's business transactions by collecting and recording the routine transaction of a firm. TPS automate the processing of voluminous amount of paper work that must be handled daily and thus makes running of any firm smoothly. Examples of TPS are sales order entry, payroll, shipping etc.

The four major components of TPS are

   i. Input

   ii. Processing

   iii. Storage

   iv. Output

Transaction processing cycle describe in Figure 3, begins with the entry of valid data, then continues with the actual processing of transaction data, updating of master file. After the completion of these processing the enquiry processing activities can occur.

3.2 Management Reporting System (MRS)

The system that provides predefined types of information to managers so that they can take structured and semi structured decisions is known as management reporting system (MRS). MRS represents the MIS subsystem that issues pre formatted report to managers. Common type of output provided by MRS is hardcopy reports such as exception report, demand report etc. The common type of output produce by MRS is hard copy report such as exception report, demand report etc.

3.3 Decision Support System (DSS)

System that provides information for making semi structured and unstructured decisions by the middle management is called as Decision support system (DSS). Different types of DSS are describe in Figure 4 and some of the important features of DSS are

   i. For analyzing important block of data DSS provides necessary tools to its user.

  ii. Tightly focus on specific set of decision.

 iii. It is aimed at higher-middle and top management.

 iv. More emphasis on end user system development.

Decision support generators are the software that help user to built effective DSS for example LOTUS 1-2-3 and interacting financial planning system (IFPS).

3.4 Executive support system (ESS)

An information system which is at the strategic level of an organization and is designed to address unstructured decision making is known as executive support system.

Some of the important features of executive support system are:

- Relevant for top management of an organization
- Combines both internal and external information
- Information generated is in the form of summary reports and graphics

In short we can say ESS is a reporting tool that provides quick access to summarized reports coming from all company levels and departments.

3.5 Diagrammatic relation between different information systems

The diagrammatic relationship between different types of information management systems are described in Figure 5.

4. Basic Steps involve in designing and developing an effective MIS

The basic steps involve in designing and effective MIS are shown in Figure 6 and explain below:

Step 1: In the first step we have to identify the type of system needed i.e. whether manual in which all the forms that contain information are completed manually or automated in which we have to rely on computer to aggregate data and desired report.

Step 2: In this step we have to identify the types of information to be collected as it is useless to collect data that has no designated purpose. Accurate information are collective from summary report generated from intake form, weekly or monthly report from outside trainers intake forms etc.

Step 3: In the third step various data collection methods are developed and the best method to collect the information is selected. For example for limited staff, the project director may responsible for data collections and reporting and while for larger units specific evaluator is responsible for this work.

Step 4: Next step is to institute the reporting system, by this we mean the staff must understand the type of reports they need to generate.

Step 5: Establishing quality control system to monitor our MIS and allow for timely modifications of the system. For example spot checks of data collection, spot checks of data entry by MIS specialist etc.

5. Importance of MIS in an Organization

All the organization and their business pass through four phases of growth cycle as shown in Figure 7.

Each phase generates new goals to achieve. If the organization does not follow the goal the decaying starts. The proper use of MIS in any organization keeps its maturity phase constant for a longer period of time.

5.1 Economic Impact of MIS

 i.   Impact on transaction cost is shown in Figure 8.

Information system in the form of MIS reduces the cost for a given size, shifting the transaction cost curve in words. It can also reduce internal management cost.

 ii.   Impact on agency cost is shown in Figure 9.

MIS also reduces agency cost by reducing the number of middle manager and clerical workers and thus shifts agency cost curve down and to the right.

6. Conclusion

Through the MIS, the information can be used as a strategic weapon to counter threats to business, make business more competitive, and bring about the organizational transformation through integration. In our paper we have explained the basic concept and the pyramid structure of MIS and various types of information management systems such as Transactional Processing System, Management Reporting System, Decision Support System and Executive Support System.

We have also explained five basic steps involve in designing and developing of an effective MIS in an organization. We have described the economic impact of MIS in an organization. In a nutshell, MIS is a management tool to help company management make informed decision for their business based on information gathered from all business departments. A good MIS also makes an organization seamless by removing all the communication barriers.

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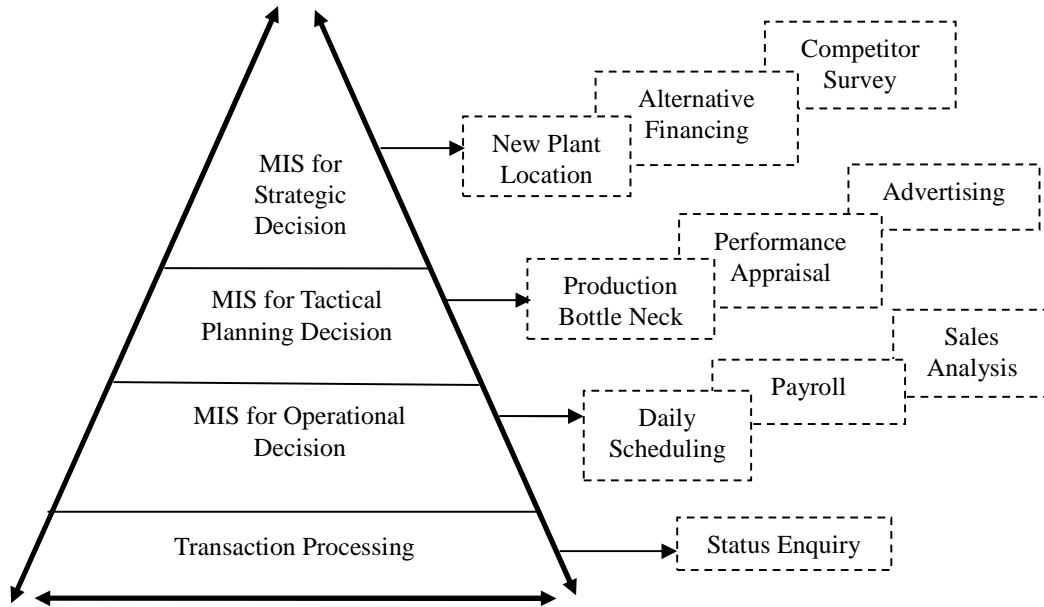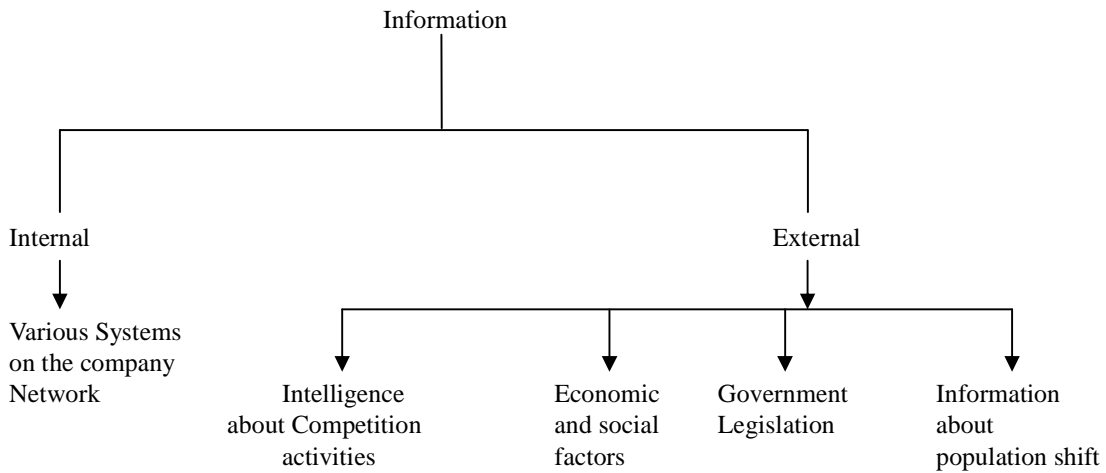
Figure 1. Typical Management Information System

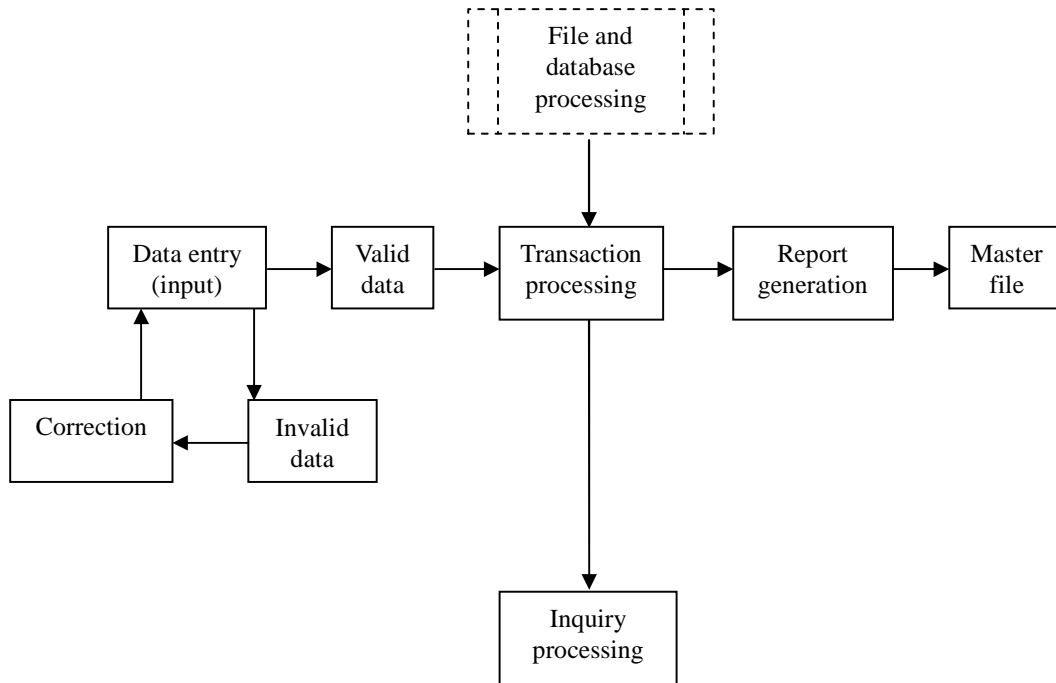Figure 2. Representing Various Sources of Information

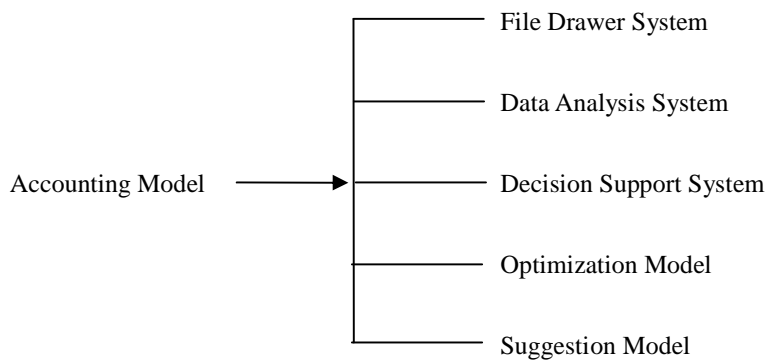Figure 3. Transaction Processing Cycle

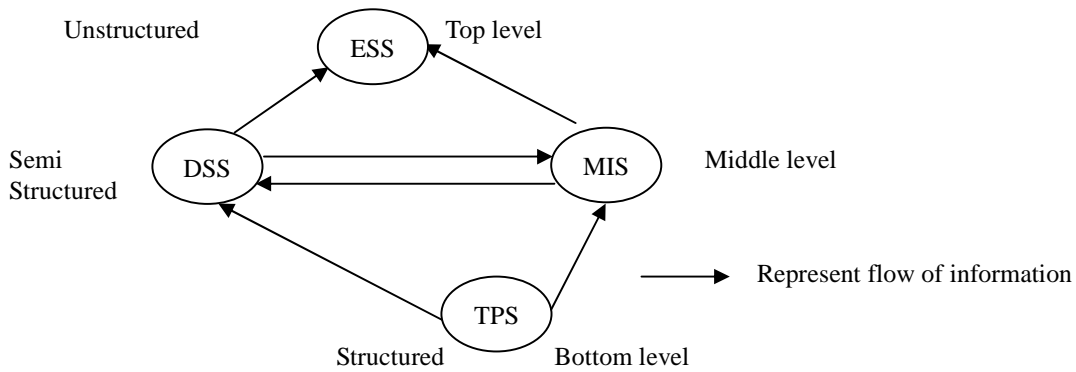Figure 4. Different Types of DSS

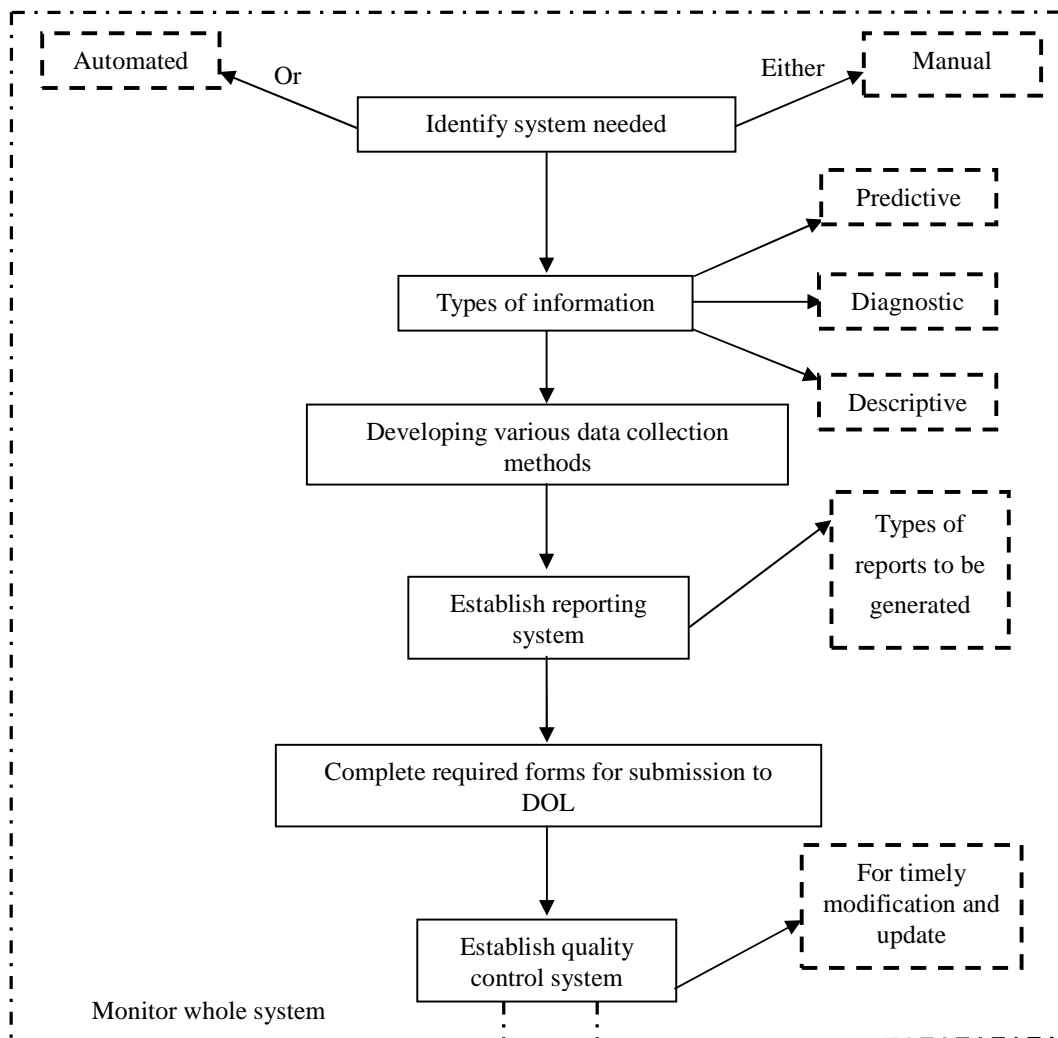Figure 5. Represent relation between different Information System
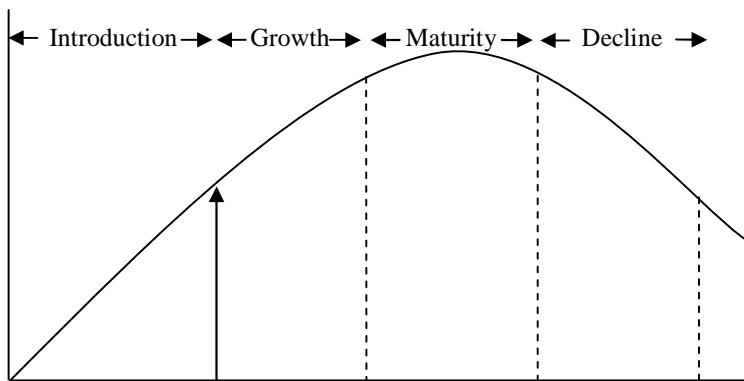

Figure 6. Overview of a development process of MIS
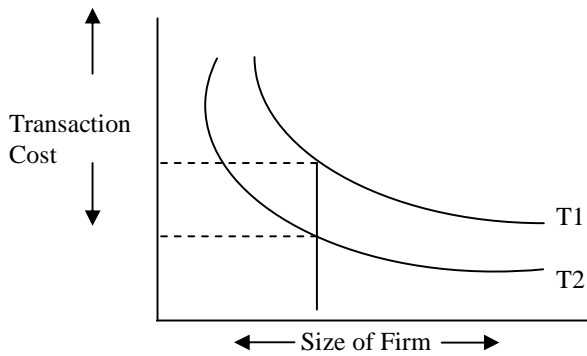
Figure 7. Represent business growth cycle

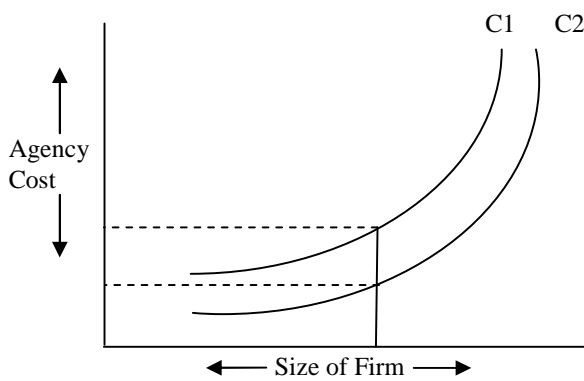Figure 8. Represent Transaction Cost Graph

Figure 9. Represent Agency Cost Graph

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