

Role of Management Information System in Business and Industry

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Abstract: Complex factor of survival force modern business to shift their primary focus from mere 'profit' to 'gaining competitive advantage' in their respective markets. Effective and efficient strategic decision making by ensuring that the right kind of information reaches the right person in the right format at the right time determines the market position of any business. Management Information System is a rapidly evolving IT based system that continuously create information from raw data collected from various sources and compiles individualized reports of various kinds which helps different levels of management in informed strategic decision making. MIS, oriented with rapidly evolving technology surrounding AI aims at maximum automation of business processes. This paper discusses the role of MIS in the success and survival of modern business and industry. The evolution of modern dynamic MIS from its Traditional manual version – IBM Mainframe based – to the latest cloud based MIS services are discussed along with the Framework and Components of MIS. The role of MIS in business and industry is examined in detail. It begins with the investigation into the information requirements of modern business. Discussions on the general types/ divisions of MIS and how it caters to various information requirements of a typical business follows. Application of MIS in existing organizations and its significant applications for various levels of management and other key stakeholders are also discussed. With the current global economic turmoil, the need for increased efficiency and to enhance maximum productivity make the study on MIS relevant than ever before.

Key Terms: Management Information System , Business , IT (Information Technology) , Information Requirements of the Business , Industry.

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I. Introduction

MIS is of immense importance in today's world. During this age of liberalization and globalization business firms are required to compete not locally but globally. In such a circumstance a manager has to take quick decisions to capitalize the opportunities as and when it arises. Otherwise the fruit would be snatched away by its competitors. Efficient, quick decision making is possible only with the aid of a system like MIS which provides systematically analysed information of high quality in the form of personalized reports.

Secondly today, in this age of high speed internet access and low cost highly capable hardware components organizations are provided with abundance of data from both external and internal sources. But at present there are only a very few organizations that are capable of capitalizing this advantage.

So it is important that organizations should be equipped with tools and systems to assist them in their challenging role of decision making and control. So today MIS is considered to be name centre of a successful organization.

Objectives of the study

- 1) To understand role of MIS in modern business and industry.
- 2) To study the major components of MIS in modern era.
- 3) To analyse application of MIS in existing organisations and its significance.

II. Methodology

This study is based on the secondary data. Data published by various institutions such as Government of India, various research papers, books, journals, websites etc are used.

Management Information System

Management Information System is a rapidly evolving IT based system that continuously create information from raw data collected from various sources and compiles individualized reports of various kinds which helps different levels of management in informed strategic decision making. MIS, oriented with rapidly

evolving technology surrounding AI aims at maximum automation of business processes. The concept of MIS is a blend of 'Management', 'Information' and 'Systems'. MIS is generally regarded as the division of overall internal control procedures in a business which covers the value of people, the value of information, the value of documentation and the value of technology. MIS consist of many systems that the organizations use to produce information and for managerial purposes. Originally it was the system that provided managers with information to take strategic decisions. The term MIS initially was used to describe the firm's overall computer system and networks. MIS is usually defined as a systematic and scientific approach to compile internal and external information into integrated and effective business information. MIS can also be stated as an integrated technology to collect, process, classify, store and distribute information. MIS contains information about crucial people, systems and environment within and around the organization. Some popular definitions of MIS are:

" Management information system, or MIS, broadly refers to a computer-based system that provides managers with the tools to organize, evaluate and efficiently manage departments within an organization".

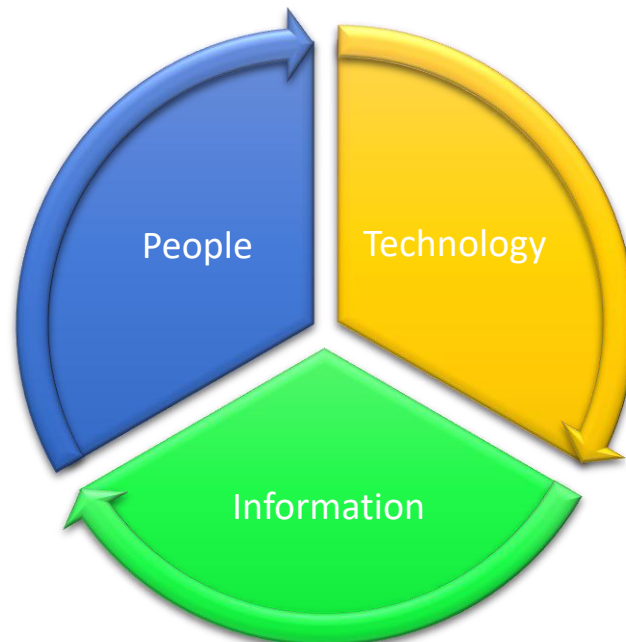
-Webopedia

"A management information system (MIS) is a broadly used and applied term for a three-resource system required for effective organization management. The resources are people, information and technology, from inside and outside an organization, with top priority given to people. The system is a collection of information management methods involving computer automation (software and hardware) or otherwise supporting and improving the quality and efficiency of business operations and human decision making"

-Techopedia.

MIS is a rapidly evolving concept which needs to be reviewed and modified according to the changes in its environment. The concept of MIS is not new for an organization. Its computerization is the only new factor. Computerization of MIS increased the speed, accuracy and the ability to deal with multiplied volume of data. MIS analyse data based on principles, theories and concepts of different subjects like Management Science, Managerial Accounting, Information Technology, Networking, System's Theory etc. MIS gives high regard to individual and his ability to use information. MIS can be evolved for any objective, if it is evolved after systematic planning and design.

Primary Resources of MIS



Classification of Information produced by MIS

MIS basically provides companies with four major types of information. They are descriptive, diagnostic, predictive and prescriptive.

Descriptive Information: It provides important information regarding the company's operations. It generally answers the 'What is?' situations. It generally involves sales reports, financial reports, production reports, shipping, and receiving reports and customer service reports.

Diagnostic Information: The diagnostic information generated by the MIS compares 'What is wrong?' information to standardized correct information. For example, a shipment report indicates how many units of product "X" shipped (descriptive information) but the key performance indicator report indicates that shipments have fallen below target levels (diagnostic information).

Predictive Information: It deals with 'What if?' scenario of analysis. It doesn't always foresee the future. Rather it produces all the information necessary to foresee the future. Examples of predictive information include: What will sales look like next quarter?

Prescriptive Information: As the name suggest it answers the question of 'What should be done?'. It does give the company the information required to make a decision based on the company's goals and strategic objectives.

Evolution of MIS

The rapid evolution of MIS illustrates the change in the information requirements of a business and the increased complexity to survive and grow in this unprecedented highly competitive environment. MIS in its basic conceptual form was applied long before the invention of computer. It actually began, the moment people began to record transactions (Mesopotamia; around 7000 years ago). Much sophisticated and evolved versions of MIS was developed and manually followed by supply chain managers of early 20th century. Individuals had to handpick the data required from a collection of Mass Data and derive out necessary information. MIS today is fundamental to the growth and survival of any business organization. Jane Prince Laudon, a famous authority on the subject identifies five Era of MIS based on the corresponding five phases in the development of Information Technology.



Development of Mainframe & Minicomputers in the late 1950's and the subsequent introduction of MIS oriented hardware and software support from IBM made the transition to digitalization of MIS. The Second Era (post 1965) after the development and the wide application of Microprocessor proved the viability to decentralize the computing needs of the organization. It resulted in the wide spread introduction of MIS in business organizations across the globe. 1970's saw the development of cheaper Personal Computers and the concept of networking. This enabled business to provide its employees the ability to increase their productivity using computers and Data Sharing which solved the problem of conflicting nature and needs of the same data. This proliferation of network enabled computers gave way to the development and application of Internet. The 4th Era saw the development of High Speed Intranet, LAN, Internet etc. Developments in networks combined with multiplied microprocessor capability induced technology based business integration along with rich information access. Current era of the evolution of MIS is based on Cloud Computing Technology which enabled networks to provide data storage, software applications and huge information base independent of the constraints of configuration, location & nature of hardware. The development of High speed mobile data collections (4g in India) and Wi-Fi networks provided new levels of mobility which enabled the remote access of MIS even through smartphones. It is not justifiable if evolution of MIS based on Information is neglected. Data transformed into information constituted the initial stage of Evolution. It was followed by individual orientation of reports which provoked an action, decision or an investigation. The need for selective reporting was met with the introduction of need based exception reporting and the concept of database. Thus the evolution of MIS was a rapid tech oriented process which proved to be imperative today.

Components of MIS



Role of MIS in Business & Industry

The Role of MIS in Business & Industry can be demonstrated with the role of Heart in the human body. Heart is one of the most significant part of humans as the moment it stops supplying blood the humans die. The blood symbolizes information that flows throughout the organization meeting the diverse needs from the brain to the last living cell of the human body. This example well illustrates the exigency of MIS in any organization.

Information Requirements of a Business Organization

Business Organizations differ in their need for information. Every business gathers useful information from two different sources. I.e. Internal source & External Source. Information requirements of a particular business depends on its Area of Operation, External Environment, Market Condition, Sales & Process related information etc. Information requirements of a typical business and the way MIS fills this gap can be better understood analysing the role various types or constituents of modern era MIS plays in an organization.

❖ **Management Reporting System**

Designed to analyse Finances & Operations of a business. MRS is generally used by middle level management to compare financial reports & operations. Higher level management uses MRS to ascertain financial position of the organization and to evaluate the progress towards its organizational objectives.

❖ **Process Control System.**

Monitors the physical or industrial process of the business. It Provides management with data and help the evaluate process & forecast the future trends.

❖ **Sales & Marketing System.**

Focused on executing and tracking Sales & Marketing functions.

❖ **Inventory Control System.**

Keeps track of the inventory and its movement including the heads of spoilage, theft etc.

❖ **Accounting & Finance.**

It is designed for the purpose of financial reporting of Assets, Investments & Liabilities of a business.

❖ **Human Resource Management System.**

Automated recruiting function & provision of an Electronic hub for HR policies are the key features.

❖ **Office Automation / Enterprise Collaboration System.**

It is developed to control the flow of information throughout the organization & Automation of repetitive Business process.

Role of MIS in an Organization

The huge role MIS have on the survival and growth of a business organization are summarized below:

- ✓ Gives managers feedback about the performance of the organization.
- ✓ Need based, personal oriented managerial information are communicated in the form of time- based or on-demand reports.

- ✓ Information primarily geared to achieve strategic and efficient managerial decision making.; This helps to take fact based decisions.
- ✓ MIS provides timely, accurate information which helps in informed decision making.
A delayed information is useless and obsolete.
- ✓ Flow of information is based on systems approach. Thus information integrating the diverse activities of different departments within the organization is supplied.
- ✓ Flexibility in information system is an important attribute of a rapid evolving modern MIS. It helps the organization to incorporate future information requirements.
- ✓ It helps in better control and administration of the organization at different levels.
- ✓ Enables better Communication within the organization.
- ✓ Efficiency in Operations and Management of the Organization is ensured with the use of MIS.
- ✓ MIS produces different types and forms of reports from the same set of information or data. This enables MIS to cater the diverse information requirement within the organization.
- ✓ MIS enables easy, secure and quick sharing of data within the organization.
- ✓ Balancing Conflicting data requirements through the use of MIS because the same data can be accessed in more than one location even remotely from outside the organization parameters.
- ✓ MIS helps in maintaining standards for data, process and managerial activities.
- ✓ MIS helps to forecast the future circumstances of business by analysing the periodical reports of various kinds of data.

Role of MIS in different levels of Management

In addition to the general role MIS plays in an organization, it plays specific, diverse and vital roles to different levels of management in an organization



➤ **Clerical personnel's / Operational Managers**

MIS helps Clerical personnel or Operational level information users in operation controls, management control, transaction processing etc. Also they answer the queries on data pertaining to status of records and references on a variety of documents.

➤ **Junior Management**

MIS provides operational data and information. It is based on this data planning, scheduling and controlling is carried out. This further helps in maintaining efficiency in operational decision making. This also aids in decision analysis at the operational level to correct an out of control situation.

➤ **Middle Management**

The information provided by MIS helps the middle level management in short term planning, target setting and controlling the business function.

➤ **Top Level Management**

The strategically analysed reports provides the Top level management with targeted refined information which helps them in Goal Setting, Strategic Planning, Evolving Business Plan and their implementations.

Role of MIS in Human Resource Management

MIS plays the following roles in Human Resource Management of an Organization

- Training & Developing the skills Human Resources.
- Automating repetitive, simplified duties redirects the efforts of the employees to other significant areas.
- Increasing the productivity of employees using resources of MIS.
- Reduces Cost.

Role of MIS in Small Business

MIS based functioning is critical to every organization to survive and grow in modern complex highly competitive world. Small business organizations and start-ups has the challenge of David to compete with Goliath's in their respective market. This makes MIS based planning, organizing, directing, controlling, strategic decision making, HR management and other significant sectors crucial for such organizations. These are the fundamental needs of MIS in business:

- ✓ Internal Process should be formulated, established, implemented and managed based on MIS so that productivity of the limited Human & Material resource can be diverted to other areas.
- ✓ Need for effective, need based, personal oriented, systematically analysed information to stay in the competitive market can only be met with strategically developed MIS.
- ✓ Increased efficiency in control of personnel and operations.
- ✓ Easier Office Management & Cost Reduction.
- ✓ Helps in predicting future trends in an organization.

III. Conclusion

The world around us tend to change each second. These changes are often beyond what the limited capacity of our brain can foresee. Business has both positive and negative impact because of this dynamic nature of our environment. MIS enables the business to stay prepared, forecast these changes and capitalize the opportunities as and when they arise. A rapidly evolving MIS is thus imperative for the survival and growth of a business organization.

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