



CHRISTIAN EMINENT COLLEGE, INDORE

(Academy of Management, Professional Education and Research)

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E-Content

On

“Management Information System”

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Information can be defined as meaningfully interpreted data. If we give you a number 1-212-290-4700, it does not make any sense on its own. It is just a raw data. However if we say Tel: +1-212-290-4700, it starts making sense. It becomes a telephone number. If I gather some more data and record it meaningfully like –

Address: 350 Fifth Avenue, 34th floor
New York, NY 10118-3299 USA
Tel: +1-212-290-4700
Fax: +1-212-736-1300

It becomes a very useful information - the address of New York office of Human Rights Watch, a non-profit, non-governmental human rights organization.

So, from a system analyst's point of view, information is a sequence of symbols that can be construed to a useful message.

An **Information System** is a system that gathers data and disseminates information with the sole purpose of providing information to its users.

The main object of an information system is to provide information to its users. Information systems vary according to the type of users who use the system.

A **Management Information System** is an information system that evaluates, analyzes, and processes an organization's data to produce meaningful and useful information based on which the management can take right decisions to ensure future growth of the organization.

Information Definition

According to Wikipedia –

"Information can be recorded as signs, or transmitted as signals. Information is any kind of event that affects the state of a dynamic system that can interpret the information.

Conceptually, information is the message (utterance or expression) being conveyed. Therefore, in a general sense, information is "Knowledge communicated or received, concerning a particular fact or circumstance". Information cannot be predicted and resolves uncertainty."

Information Vs Data

Data can be described as unprocessed facts and figures. Plain collected data as raw facts cannot help in decision-making. However, data is the raw material that is organized, structured, and interpreted to create useful information systems.

Data is defined as 'groups of non-random symbols in the form of text, images, voice representing quantities, action and objects'.

Information is interpreted data; created from organized, structured, and processed data in a particular context.

According to Davis and Olson –

"Information is a data that has been processed into a form that is meaningful to recipient and is of real or perceived value in the current or the prospective action or decision of recipient."

Information, Knowledge and Business Intelligence

Professor Ray R. Larson of the School of Information at the University of California, Berkeley, provides an *Information Hierarchy*, which is –

- Data – The raw material of information.
- Information – Data organized and presented by someone.
- Knowledge – Information read, heard, or seen, and understood.
- Wisdom – Distilled and integrated knowledge and understanding.

Scott Andrews' explains *Information Continuum* as follows –

- Data – A Fact or a piece of information, or a series thereof.
- Information – Knowledge discerned from data.
- Business Intelligence – Information Management pertaining to an organization's policy or decision-making, particularly when tied to strategic or operational objectives.

Information/Data Collection Techniques

The most popular data collection techniques include –

- Surveys – A questionnaire is prepared to collect the data from the field.
- Secondary data sources or archival data: Data is collected through old records, magazines, company website etc.
- Objective measures or tests – An experimental test is conducted on the subject and the data is collected.
- Interviews – Data is collected by the system analyst by following a rigid procedure and collecting the answers to a set of pre-conceived questions through personal interviews.

Information can be classified in a number of ways and in this chapter, you will learn two of the most important ways to classify information.

Classification by Characteristic

Based on Anthony's classification of Management, information used in business for decision-making is generally categorized into three types –

- **Strategic Information** – Strategic information is concerned with long term policy decisions that defines the objectives of a business and checks how well these objectives are met. For example, acquiring a new plant, a new product, diversification of business etc, comes under strategic information.
- **Tactical Information** – Tactical information is concerned with the information needed for exercising control over business resources, like budgeting, quality control, service level, inventory level, productivity level etc.
- **Operational Information** – Operational information is concerned with plant/business level information and is used to ensure proper conduction of specific operational tasks as planned/intended. Various operator specific, machine specific and shift specific jobs for quality control checks comes under this category.

Classification by Application

In terms of applications, information can be categorized as –

- **Planning Information** – These are the information needed for establishing standard norms and specifications in an organization. This information is used in strategic, tactical, and operation planning of any activity. Examples of such information are time standards, design standards.
- **Control Information** – This information is needed for establishing control over all business activities through feedback mechanism. This information is used for controlling attainment, nature and utilization of important processes in a system. When such information reflects a deviation from the established standards, the system should induce a decision or an action leading to control.
- **Knowledge Information** – Knowledge is defined as "information about information". Knowledge information is acquired through experience and learning, and collected from archival data and research studies.
- **Organizational Information** – Organizational information deals with an organization's environment, culture in the light of its objectives. Karl Weick's Organizational Information Theory emphasizes that an organization reduces its equivocality or uncertainty by collecting, managing and using these information prudently. This information is used by everybody in the organization; examples of such information are employee and payroll information.
- **Functional/Operational Information** – This is operation specific information. For example, daily schedules in a manufacturing plant that refers to the detailed assignment of jobs to machines or machines to operators. In a service oriented business, it would be the duty roster of various personnel. This information is mostly internal to the organization.
- **Database Information** – Database information construes large quantities of information that has multiple usage and application. Such information is stored, retrieved and managed to create databases. For example, material specification or supplier information is stored for multiple users.

MIS Need for Information Systems

Managers make decisions. Decision-making generally takes a four-fold path –

- Understanding the need for decision or the opportunity,
- Preparing alternative course of actions,
- Evaluating all alternative course of actions,
- Deciding the right path for implementation.

MIS is an information system that provides information in the form of standardized reports and displays for the managers. MIS is a broad class of information systems designed to provide information needed for effective decision making.

Data and information created from an accounting information system and the reports generated thereon are used to provide accurate, timely and relevant information needed for effective decision making by managers.

Management information systems provide information to support management decision making, with the following goals

–

- Pre-specified and preplanned reporting to managers.
- Interactive and ad-hoc support for decision making.
- Critical information for top management.

MIS is of vital importance to any organization, because –

- It emphasizes on the management decision making, not only processing of data generated by business operations.
- It emphasizes on the systems framework that should be used for organizing information systems applications.