MIS: Sources and Types of Information

Information/Data Collection Techniques

The most popular data collection techniques include:

- **Surveys:** A questionnaires 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.

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.

Good quality information – Quality is a value that would vary according to the users and uses of the information.

According to Wang and Strong, following are the dimensions or elements of Information Quality –

- **Intrinsic**– Accuracy, Objectivity, Believability, Reputation
- **Contextual**– Relevancy, Value-Added, Timeliness, Completeness, Amount of information
- **Representational**– Interpretability, Format, Coherence, Compatibility
- **Accessibility**– Accessibility, Access security

Various authors propose various lists of metrics for assessing the quality of information. Let us generate a list of the most essential characteristic features for information quality

- **Reliability**- It should be verifiable and dependable.
- **Timely**- It must be current and it must reach the users well in time, so that important decisions can be made in time.
- **Relevant**- It should be current and valid information and it should reduce uncertainties.
- **Accurate**- It should be free of errors and mistakes, true, and not deceptive.
- **Sufficient**- It should be adequate in quantity, so that decisions can be made on its basis.
- **Unambiguous**- It should be expressed in clear terms. In other words, in should be comprehensive.
- **Complete**- It should meet all the needs in the current context.
- **Unbiased**- It should be impartial, free from any bias. In other words, it should have integrity.
- **Explicit**- It should not need any further explanation.
- **Comparable**- It should be of uniform collection, analysis, content, and format.
- **Reproducible**- It could be used by documented methods on the same data set to achieve a consistent result.