

## DATA AND INFORMATION

Data are raw facts, events, numbers and transactions, which have been collected, recorded, stored but are not yet processed. Data consist of numbers and characters (i.e. alphabets and special symbols) which are used to record facts and events about activities occurring in an environment.

Information is processed data. It is obtained after subjecting data to a series of processing operations which convert related groups of data (raw facts) into a meaningful and coherent form. Processing could be in the form of addition, subtracting, comparison, sorting, rearrangement etc. This makes information useful and meaningful. In other words, information could be defined as the desired form to which data is finally transformed after undergoing a series of processing.

Let us consider an example which distinguishes data from information. The costs of five different items are data while the total cost or average cost which is obtained from the different costs is information. Information must be communicated and received by a manager who uses it for decision making. On most occasions, what is information to one manager might be data needing further processing to another manager.

We should know that the main reason why people muddle both terms: data and information is because they are both dynamic in their state. That is, data used as input for a computational process may be an output of an earlier computation performed on the same computer and vice versa.

The Table below shows example of data being used as information and vice versa.

S/N	Operation	Data	Information
1	Typing of students name, Matriculation number and scores in computer science	Characters like alphabets (A-Z, a-z), digits (0-9), or special characters (+, -, *, /)	Set of characters (words) like Ade, 70, Sola etc.
2	Computation of a class average score in computer science	Each student's test score in computer science	The class average score in Computer science
3	Computation of a school average score in Computer science	Each class' average score in Computer science	The school's average score in Computer science

If we study the Table above, we shall realise that information (output), for a particular computational stage serves as input for the next operation. For example, the information (set of characters like Ade, 70, Sola etc) is what will be used as data input in the second operation (Computation of a class average score in computer science), and the same logic is applicable to the third operation.

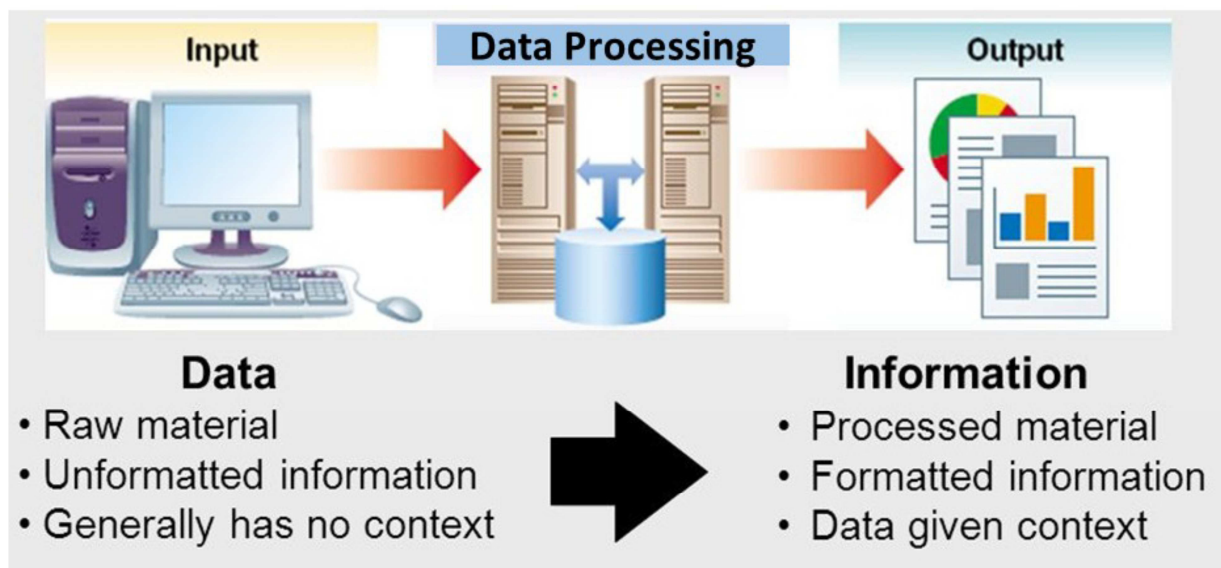
The table below gives some distinctions between data and information

S/N	DATA	INFORMATION
1	Data is raw, an unchanged fact	Information is an organised and sorted fact
2	It serves as input into the computer system	It serves as an output from the computer system

3	Observation and recording are done to produce data	Analysis of data are done to obtain information
4	Data is the lowest level of knowledge	Information is the second level of knowledge
5	Data by itself is not significant	Information is significant

### Data Conversion Process

The conversion of data to information is represented diagrammatically in the figure below



### General Characteristics of Information

The following are the essential attributes of information for management decisions:

- i. It must be detailed enough to allow for effective decision
- ii. It must contain an appropriate level of details for the recipient. At the top management level, the information must be very broad in scope while at the operating or departmental management level; the information must be of a very detailed nature;
- iii. It must relate to the current situation and have acceptable level of integrity;
- iv. It must be produced at an optimum cost and must be compatible with response time needs of the systems;
- v. It must be easily understood by the recipients. Presentation, in forms of charts, diagrams and tables may be essential. It must be concise and not contain unnecessary redundancy;
- vi. It must be precise and have an acceptable level of accuracy to the recipient. It must be producible at regular intervals and be relevant to its purpose. For example, bank balances are given to 2 decimal places for accuracy;
- vii. It must be verifiable. Many knowledgeable people acting independently will produce the same information.
- viii. It must be arranged or organised to suit the requirement or purpose for which it is needed.

- ix. Information, when derived, must be communicated through the right channel to the recipient.

### **Types of Information**

Information needs of an organization can either be quantitative or qualitative

- a. **Quantitative Information:** Quantitative information deals with the magnitudes of variables, their variability or absolute values. Some examples are Annual sales of a production company, Variation in the wages of low-level staff in an organization, Prices of goods; and Number of hours worked on a production line.
- b. **Qualitative Information:** Qualitative information is related to the attributes of an entity in respect of quality factors. This type of information is not exact (precise) in nature but it is very useful for comparative measurement. Examples include standard of finished product in respect of paintwork or electroplating; and Variation of tolerances of manufactured parts i.e. deviation from standard dimensions.

### **Information System**

With the proper definitions of data, information and the attributes of information given above, we can now define an Information System as distinct from information. An Information System is the set of interconnected procedures, the purpose of which is to provide managers at all levels and in all functions of an organization with the information necessary to enable them make timely and effective decisions.

Information Systems can also be defined as a combination or collection of people, hardware, software, communication networks and data resources that collects, transform and provides information to managers at all levels in all functions to allow timely and effective decision making in an organisation. These decisions are for:

- i. Planning,
- ii. Directing, and
- iii. Controlling of all activities for which they are responsible

The common characteristics of all information systems are:

- i. The existence of procedures for orientating and/or collecting data;
- ii. The existence of procedures which sort and classify data, carry out arithmetic and logical operations on the data, holds data in the form of records for immediate or future use, summarise and analyse data and check the results for accuracy. All these activities constitute the processing of data; and
- iii. The existence of procedures for communicating the processed data to appropriate managers.

### **Accounting Information System (AIS)**

A special type of Information System for accounting professionals is the Accounting Information System. An Accounting Information System (AIS) consists of people, procedures and Information Technology (I.T). Just as we have above, the AIS performs three important functions in any organisation:

- a. It collects and stores data about activities and transactions so that the organisation can review what has happened;

- b. It processes data into information that is useful for making decisions that enable management to plan, execute and control activities; and
- c. It provides adequate controls to safeguard the organisation's assets, including data. These controls ensure that the data is available when needed and that it is accurate and reliable
- d. It helps in the analysis of information presented in Payroll/Payslips; Stocks report; List of debtors/creditors; Cost summaries; Budget reports; Labour turnover statistics.

The AIS differs from other information systems in its focus on accountability and control.

### **Subsystems of Accounting Information Systems (AIS)**

Most business organisations engage in many similar and repetitive transactions/activities. These transaction types can be grouped into the five basic cycles, which constitute the basic subsystems in the AIS:

- a. The Expenditure subsystem/cycle which consists of the activities involved in buying and paying for goods or services used by the organisation;
- b. The production subsystem/cycle which consists of the activities involved in converting raw materials and labour into finished products (only manufacturing organisations have production subsystem);
- c. The Human Resources/payroll subsystem/cycle which consists of the activities involved in hiring and paying employees;
- d. The Revenue subsystem/cycle which consists of the activities involved in selling goods or services and collecting payment for those sales; and
- e. The Financing subsystem/cycle which consists of those activities involved in obtaining the necessary funds to run the organisation and in repaying creditors and distributing profits to investors.

The above basic subsystems suggest the most important work activities performed by Professional Accountants. Some of these include:

- i. Accounting systems and financial reporting;
- ii. Long-term strategic planning;
- iii. Managing the accounting and finance function;
- iv. Internal consulting;
- v. Short-term budgeting;
- vi. Financial and economic analysis;
- vii. Process improvement;
- viii. Computer systems and operations;
- ix. Performance evaluation (of the organisation); and
- x. Customer and product profitability analysis.

### **Benefits of Information systems**

Information systems can help an organization in any of the following ways:

- a. **Operational Efficiency:** This entails doing routine tasks faster, cheaper, neater and more accurately. The use of transaction processing software, word processing and electronic spreadsheet help to make operations more efficient;
- b. **Functional Effectiveness:** This entails the use of decision support software which are oriented towards helping managers to make better decisions;
- c. **Provision of better improved services:** This entails the use of help technologies like the automatic teller machine (ATM), e-commerce and the reservation systems used by travel agents. All these are examples of provision of improved services to customers;
- d. **Better Product selection:** The provision of information helps in the selection of products offered for sales by industries like Banks, insurance companies, travel and financial services. Products that can be differentiated largely on the basis of the information inherent in them are called Information-Intensive Products; and
- e. **Competitive Advantage:** The provision of information and the creation of new products through information technology can give some companies competitive advantage over other companies in the same industry.

#### **Disadvantages of Information System**

Everything that has an advantage will have some disadvantages and Information Systems is not an exception. Some of the disadvantages of Information systems include:

- i. **Ease Of Fraud:** Information System makes whoever uses it efficient. This implies that if fraudsters have access to information systems, it will make their fraudulent activities efficient too.
- ii. **Data Loss:** If there is a disaster and an organisation fails to back-up her data regularly, the information she has may be lost and this can lead to legal liability and may eventually lead to the collapse of an organisation.
- iii. **GIGO Effect:** The popular term GIGO (Garbage-in Garbage-Out) implies that whatever you feed into the system is what you get. This becomes a disadvantage if wrong data is fed into the system, as it will produce wrong information that may ultimately lead to wrong decision making in businesses.
- iv. Information can be deceptive sometimes, e.g. statistical information, if not well explained, which can lead to wrong use.

#### **Roles of Information In the Accounting Environment**

Accounting information plays major roles in organisations which include the following:

- a. It identifies activities requiring action. For example, a cost report with a huge variance might stimulate investigation and possible corrective action;
- b. It reduces uncertainty and thus provides a basis for choosing among alternative action. For example, it often used to set prices and determine credit policies
- c. Information makes decision making process of the accountant to be fast
- d. It makes the Accountant's output to be accurate
- e. It enables the Accountant to develop strategies and formulate policies for the survival of their profession
- f. It enables effective planning and control, desirable in the accounting profession

- g. Information is needed in the accounting profession to proactively respond to rapidly changing conditions in the environment
- h. It enables the Accountants to be abreast of government policies and regulations
- i. It enables the Accountants to monitor and gain insights into the activities of their professional competitors
- j. It enables the Accountants to meet customers' request adequately
- k. It enables the Accountants to maintain patronage and goodwill of their customers