

LESSON 1

WEEK 1

LEARNING OUTCOMES

Having completed this lesson, students should be able to explain the meaning of data and information, the difference between data and information, explain the stages involved in data processing cycle, and able to recognize the qualities of good information.

TOPIC OUTLINES

Definition of information system

An *information system* can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making, co-ordination, and control in an organisation.

In addition to supporting decision making, co-ordination and control, information systems may also help managers and workers analyse problems, visualise complex subjects, and create new products.

Meaning of data and information within an organisation

Data

The word *data* means facts. Data consists of numbers, letters, symbols, raw facts, events and transactions, which have been recorded but not yet processed into a form, which is suitable for making decisions. Data on its own is not generally useful, whereas information is very useful.

Information

Information is data, which has been processed in such a way that it has a meaning to the person who receives it and who may then use it to improve the quality of decision-making.

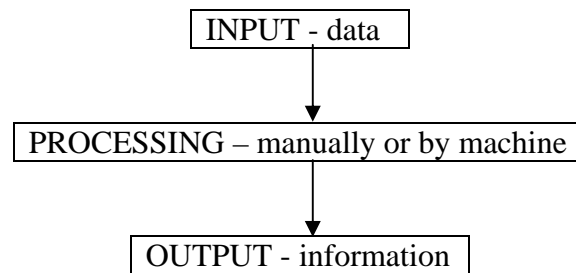
Difference between data and information

Information is different from data.

$\text{Data} + \text{Meaning} = \text{Information}$

Data processing cycle

Data processing is the conversion of data into information, as follows:



Data processing can be seen as a system, whose interfaces with the environment are data and information.

Qualities of good information to the organisation

Good information is information, which has **value** to the user. It is **useful** to the recipient, can be relied upon and helps decision making process. The basic qualities of good information are that it should be:

- (a) complete
- (b) relevant
- (c) timely
- (d) as accurate as is required
- (e) understandable
- (f) significant
- (g) communicated to the right person
- (h) communicated via an appropriate channel.

Completeness

- The reliability of information increases with its completeness. However, the appropriate level of completeness varies enormously, according to the type of information. Information should be ***complete enough for its purpose***.

Relevance

- Information must be ***relevant to the problem under consideration***. It is often the case that report contains irrelevant sections, which cloud the understanding and can irritate the user searching to find what is required. In the same way, financial analyses can sometimes confuse the reader presenting a mixture of relevant and irrelevant information, or information with unnecessary details.

Timeliness

- Information can only be of use if it is ***received in time to influence the decision making process***. Routine information should be produced at time intervals, which are relevant to the process involved. For example, information on the temperature of a chemical process may be reported every hour, while routine production statistics and management accounts are produced monthly.

Accuracy

- Information should be ***sufficiently accurate for its intended purpose*** and the decision maker should be able to rely on the information.

Understandability

- Information, which is easy to understand, is more likely to produce action. Information must be understandable by the person receiving it. Modern computer packages contain tables, graphics and charts, all of which can assist in speeding up and improving the understanding process.

Significance

- Part of the art of keeping information simple and understandable is to highlight the significant factors, screening out any facts, which are not important enough to affect the decision-making process. Information has no value if the user already knows it: we say that information must have a 'surprise' value. The significant information is both new and important for the decision making process.

Communicated to the right person

- Information must be communicated to the person who has to take action. For example, monthly reports on the production efficiency of a department should be reported to the manager responsible for the operations of the department. In doing this, care must be taken to distinguish between those elements of production which are directly controllable by the manager and those which are not.

Communication via an appropriate channel

- Information must be communicated using an appropriate channel. There are many channels available, including:
 - (a) conversations
 - (b) telephone calls
 - (c) VDU computer screens
 - (d) electronic mail
 - (e) written reports
 - (f) postal communications
 - (g) facsimile (fax) copies
 - (h) 'modem' computer links.

Exercise

Describe the difference between data and information.

What do you consider to be the qualities that should be possessed by good information?

Basic Reading

Foulks Lynch, Information Technology Processes, page 31-37

Management Information Systems, Parker Case, page 12-19