ROLE OF COMPUTERS IN MM
CHAPTER V

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The efficient functioning of any organisation largely depends upon a continuous process of information-flow by which informations are received, stored, processed and communicated. This information system is the combined effort of the people, the equipment used, processing facilities and the procedures which are directed for meeting the information requirements of the organisation. The central feature of this information flow is Electronic Computer.

The computer is a piece of equipment which calculates and processes information from stored instructions known as programmes. The programme must be capable of being processed updated and modified as and when needed, thereby facilitating managerial decision-making.

BRIEF DESCRIPTION OF BASIC TERMS

Input Units

Input units read the data and translate it into the appropriate internal code of the computer for transfer to the internal storage unit. Input may take the form of purchased cards, paper tape, etc.

Internal Storage Unit or Memory

It holds the programme and the data currently required for processing.
Control Unit

It directs and co-ordinates all the activities of the computer.

Arithmetic Unit

It carries out arithmetical and logical operations and decision-making tests, such as sequence control and comparison of number on the data held in the internal store.

External Storage Units

External storage units are the devices supplementary to the internal stores, meant for holding information not immediately required.

Output Units

It converts data from the form in which it is stored internally into a physical form in which it can be displayed by and removed as and when required from the computer.

Information

Information is the result of processing data or output.

Electronic Data Processing

The conversion of 'Data' into 'information' through the use of an electronic computer and associated equipment.
Hardware

Computer equipment of a complicated type is generally referred as hardware.

Software

It is used to describe operating programmes.

TYPES OF COMPUTER

There are two major categories of computers.

1. Analogue Computers.


The difference between the two, lies in the input that goes into the computer. Physical elements such as ray of light, heat-temperature, weight, etc are the input for analogue computers and these machines are mostly used in the laboratories.

Digits in one form or another becomes the input for digital computers. In the Commercial as well as scientific world where digits are largely used, digital computers are used.1

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The main advantages of a computer are as follows

1. It calculates speedily which makes it ideally suited for repetitive work.

2. It ensures accuracy and reliability of data.

3. It has the capacity for storing and making use of a wide range of information, and rapidly selecting from a mass of information items needed for particular purposes.

4. It also accomplishes high quality and fast output printing.

5. It greatly reduces the errors which would have normally crept in manual calculations.

6. It regularly provides management with a large quantity of valuable and detailed, data for control purposes.

7. There will be a significant saving in the clerical costs and

8. If frees professional personnel from a large amount of routine work.²

AREA OF APPLICATION

Computers are employed both by private and public sectors, educational institutions, research organisations and government departments. The maximum area of application is in payroll for processing

the large mass of data in quick time, with great accuracy and financial accounting. But the materials management proves to be the most beneficial area in which the computers can be put to effective use. Since computerisation of inventory control ensures better control and profitability any big concern can go for computerisation irrespective of the cost involved therein.

Advanced countries have saved up to 15 percent of the total cost of the materials by proper application of computers in monitoring and decision supporting system.³

Computerisation of Materials Management primarily consists of purchases, stores and inventory control.

Materials planning is the first activity in MM. The important input here is the sales forecast. The sales forecast is converted into finished goods forecast and the bill of materials is used for exploring the requirements of finished goods into the requirements of materials. The bill of materials is a document containing a detailed list of all raw materials, components and sub assemblies needed for manufacturing a particular final product. It is very exhaustive and carry code numbers

for each part, store locations, whether they are to be purchased or manufactured and so on. After the completion of materials planning the requirements of all component parts, are estimated.

At the inventory management stage, computers are used to control the level of inventories and to supply the materials at the right time. Various inventory control techniques are easily programmed into the computer, so that tedious and time-consuming calculations are averted. Also, movement analysis, lead-time analysis, ABC, analysis, vendor rating, etc, can be computerised in a short time which helps the management to take scientific decisions so as to control the inventory levels.

In general, computers are utilised to guide all the activities involved in getting the materials to the factory. The basic materials activities performed by the computer are.

1. Posting of Inventory records.
2. Computation of quantities to be ordered for.
3. Preparation of purchase requisitions.
5. Preparation of purchase orders.
8. Preparation of goods received note.
9. Preparation of numerous operating reports needed by different levels of management.

DISTRIBUTED COMPUTING INTELLIGENCE

Instead of having Central Data processing department, small computers can be distributed throughout the organisation and this allows corporate departments to do their own computation most effectively. This method is known as Distributed Computing Intelligence (DCI).

Under the new DCI system each department handling such data has its own minicomputer and visual display terminal. This removes the need for purchasing card and clerical work, at the same time increasing managerial productivity since the managers can get the data they need whenever they want rather than waiting for a Central DP Department in processing it.

How much of a company's computing should remain in the hands of the Central DP Department will depend on the individual characteristics of its organisation, business and personnel. However, Michael Heavan of UK Computer Consultants XIOMICS Ltd maintains that, "as a general rule not more than 20 percent of the information processing in a company should be centralised."

As a matter of fact, a computer cannot determine the urgency of the firm's need for a component part. Consequently, for
other than normal delivery requirements, exact shipping dates and order
follow-up dates must be specified by the buyers. For this reason and
for purposes of control, an automated system usually provides for a
review of all purchase requisitions by the buyers. In case the production
needs fluctuate, the production control analyst changes the requisition
accordingly. The buyer analyses the requisition in terms of potential
supplier's performances under current conditions. He also considers future
quantity and quality requirements as well as other intangible factors
and makes all the changes he deems appropriate. The buyer specifies
unique delivery dates, shipping routines, the dates on which follow-up
inquiries should be made and a purchase order number.

A computer system frees buyers and other professional
personnel from a vast amount of routine work associated with the initiating
and processing of requisitions. The buyer is free to devote a major portion
of his time to creative buying activities such as vendor investigation,
negotiation, value analysis and various types of purchasing research.

The relationship between purchasing and other materials
activities, particularly inventory control, is closer under the computer
system. The computer is the common bond which draws all materials
activities into an integrated system. The resultant tendency is towards
the development of materials management type of organisation.
COMPUTERISATION IN SPB LTD

There are about 12000 items of materials handled in the stores of SPB Ltd, Pallipalayam. Accounting of stores transactions and the analytical statements thereof are voluminous and hence, computerisation of systems in materials management area are very much beneficial and justified for this organisation.

A computer was installed for the first time in June 1981 in SPB Ltd. It is of HCL make-system IV and the configuration consists of:

1. CUP with 128 K bites of Memory
2. Two mini floppy drives
3. One disk with 20 MB Capacity
4. One printer of 600 I PM
5. One tape drive of 600 feet 800 BPI 17.5 LPS
6. One visual display unit
7. Three offline key to minifloppy data entry machine

The jobs performed by the above computer are given below

1. Invoicing
2. Sales accounting
3. Cash accounting
4. Stores accounting
5. Preparation of pay-roll
6. Accounting payables
7. Sales analysis, outstandings and other connected jobs
8. Cost statements and energy analysis
9. Goods received notes.
10. Shares accounting
11. Stock statements for bank purpose.

As per the agreement made with the HCL company, the computer was replaced by Horizon III Mode in 1988.

It is a multi user and multi task system and is known as super mini form. The configuration is 36 bites, M 60200 Base System.

The new Horizon Model III carrying out the extra load (work) which is not within the capacity of HCL Make System IV.

Under the new model computer sales and invoicing are linked under the name of marketing management system. Stores accounting and goods received note are linked under the purchase management system. Similarly, cash accounting and accounting payables are combined as one system in the name of Financial Management System.

The other jobs are executed without any change. The new computer extended two terminals one for the purchase department and the other one for the Marketing department.
At present the purchase department need not wait in the Central Data Processing department for its routine works such as preparation of purchase requisition, purchase order, etc.

With regard to other departments, the Data processing centre is well within their access. The department requiring the computer service can easily approach the Data processing centre for getting the received results. The authorised person of the department can operate the computer without even waiting for the assistance of the officials of the computer department.

The recent changes made in the computerisation system in SPB Ltd was admirable. For it saves the cost of installation of mini computers in each of the departments at the same time all the advantages of distributed computing intelligence were derived by the organisation in entirety.

Thus computerisation has enabled the purchase department of SPB Ltd in obtaining quick results through the processing of the data in extended terminals. The resultant time saved in the above process can be utilised for vendor rating negotiation, value analysis and other useful managerial work.