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Computerized Accounting System

Learning objectives :

After studying this chapter, you will :

■ Know the meaning of Computized Accounting System, its components parts and capabilities.
■ Understand the utility and benefits of computer in accounting
■ Learn about the automation of the accounting process.
■ Understand the composition of Computerized Accounting System.
■ Understand the Management Information System and Accounting Information System.
■ Learn about Computerized Accounting Software.
■ Understand manual and Computerized Accounting Systems.

In a business organization, accounting of all financial transactions, valuation of stock and assets, warehousing, payroll of employees, etc. generally done is by the manual accounting system. Accountants or some accounts officer prepares final accounts in the form of profit-loss account, trial balance and balance sheet at the end of accounting period. The actual position of the business is known through these statements and books of accounts. These final accounts are used by businessmen for decision making. Reports are prepared through these books and accounts. All the above mentioned financial statements are prepared through manual system. That is all the books of accounts are prepared and maintained by the accountants, without the use of any technology. This type of accounting system is a time consuming process, as well as many types of errors are likely to occur. There are many other kinds of problems and complexities that come in the traditional manual accounting system. All these complications and problems can be solved by a superior technique. The development of information technology as well as the increased activities and transactions in business, generated a need for better system of accounting. Many machines were developed to facilitate accounting system- All these machines were partially successful in indirectly accelerating accounting work. For example, the billing machine that contained some limited information of the customer. This machine was able to do simple arithmetical functions like addition, subtraction, multiplication, etc. and could generate customer's information and billing amount. The receipt or the bill is prepared automatically by the operator of the machine. In a way, this machine could do the job of both the calculator and typewriter. However only limited work could be done by such machines. With the expansion of business and increase of financial transactions, technological advancement has also registered its place. Machines in the form of computers were introdused due to their ability of high speed, storage and processing capacity. They facilitated quick decision-making and reduced complexity in the transaction process.

Computer technology and its use have gained an important place over the past few decades. Historically, it has been effectively used to solve problems in science and technology. It has been used for economic policies and forecasts. With its very highly demand, the need for its use in business and commerce has also increased. The most important impact of computer is the processing and storage capacity of data and its effective presentation. In the

present scenario in business, accounting and the operations of management information system would be nearly impossible without computers. On the other hand to resolve the complexity of intense competition and increasing business dealings, management of various types of data is a major challenge. It is now necessary that the accounts to be managed in such a way that they can be used at the right time when needed for prompt decision making. Such an accounting approach can be followed only by computerized accounting system.

Concept of Computerized Accounting System

Accounting of financial transactions was done through manual books of accounts prior to the origin of computer. According to the process of accounting, an accountant prepared cash book, Journal, Ledger etc. Handwritten final accounts were prepared from these books that included profit and loss account and balance sheet. Accounts are now maintained with computers. A Computerized accounting system is such a system by which all accounting activities are operated through a computer.

The following requirements are needed for the implementation of this method.

1. Computer; 2. Software; 3. Hardware; 4. User; 5. Networking procedures.

1.   **Computer :** The computer word is derived from the English word "compute", which means "to calculate", so it is also called a calculator or computer. Computer is an electronic machine that has the ability to accept and process data and solve given problems. Its invention was done to calculate. In early stage computers were used only for simpler calculations, but nowadays these are used to create documentary, e-mail, audio, video, electronic games and to maintain database. It is extensively used in educational institutions, banks, offices, shops, railways etc. Computers are machines and therefore they work only as per the inserted instructions in the form of programs.

2.   **Software** : Software is a set of instructed programs given to the computer that works through the hardware to achieve a definite result. All instructions are stored in the computer through the code. Operating system is the most prominent component of the software. This operating system establishes connection between the computer and the user, through which the resources of the computer get settled, and it becomes easy for the user to work on it. The software is divided into three types:

(i)   The utility programs are created to perform certain specific type of functions on the computer, though some supplementary operations can also be performed in addition to the main work. All these programs also fall under the category of software. Transfers of a file, deleting data, copying and storing etc., are categorized under the utility programs.

(ii)   A language processor is software that converts a source program into a machine language. Machine language is the language through which the computer converts the given instructions into its own language.

(iii)   Application software is a group of programs by which a specific procedure is performed for a predesigned task. The instructions given through programming is limited to the performance of a specific task. For example, financial accounting (Tally or Marg), payroll (salary calculation), inventory management etc. Similarly, the system software controls and operates the internal functions of the machine for conducting a specific task

3.   **Hardware :** Computer hardware is the collection of physical parts of a computer system. This includes the computer case, monitor, keyboard, and mouse. It also includes all the parts inside the computer case, such as the hard disk drive, motherboard, video card, and many others. All these instruments are operated by electricity. These are of two types. The input device through which the information is entered   in the computer, such as key board, mouse, pen drive. The output device through which the information is revealed. Monitor and Printer are examples of output device.

4.   **User and Operators :** It is a group of people who contribute to the operations of the computer. These mainly include system analysts that prepare the format of the data processing system. Additionally programmers are

those people who implement the format of data processing by some programming language. In the end, the operator who works on the computer for some specific purpose.

5. **Data :** Computer data is information processed or stored by a computer. This information may be in the form of text documents, images, audio clips, software programs, or other types of data. Computer data may be processed by the computer's CPU and is stored in files and folders on the computer's hard disk or any other storage media. For instance data of a school include all types of information about the students. The computer coordinates it by systematically classifying data for the purpose of analysis. Data is used in making various kinds of decisions.

6. **Networking :** For the exchange of information, the computer is connected to many devices. The internet is the key in this. As a small network that connects various computers at a specific space is termed as local area network (LAN).A wider form of network is used in transformation of high frequency of information through internet. Such network is termed as wide area network.

Parts of Computer

Computer parts can be divided into three types -

1. Input unit

2. Output unit

3. Central Processing Unit (CPU)

1. **Input Devices :** These are hardware devices that allows us to input any data or command in the computer. Examples of input devices are mouse, keyboard, scanner, pen drive, card reader etc.

2. **Output Devices :** These are hardware devices that provide any data or any output from the computer. For example, monitor, speaker, printer, projector, headphone etc. The accounting transactions are entered in the computer, their processing leads to profit & loss account and other financial statements. This can be displayed through the monitor and the hardcopies of the statements can be taken from printer.

3. **Central Processing Unit :** The central processing unit is the main part of the computer. It can also be called computer's brain. Its function is to process the input and instructions given to the computer. It is also commonly known as processor. Computer needs both software and hardware to work properly. Both of these support each other. It performs the basic arithmetical, logical, and input/output operations of a computer system. The CPU is sometimes also referred to as the central processor unit, or processor for short. It is installed on the motherboard in the computer and through the motherboard only other components of the computer are connected to each other.

Components of CPU

(i) Arithmetic Logic Unit

(ii) Processor Register

(iii) Control Unit

The processing of computer operations is completed in the following manner:

Input ----- Processing ----- Output

The complete process of the computer can be understood in the following steps :

Input : For input we use input devices like keyboard, mouse, and also provide commands or instructions and data to the computer through software.

Processing : It is the second part of this process. The information entered in the computer is processed through it. This is done by processor or central processing unit.

Output : Third and final part is Output. In this process, the information is processed on the basis of the given command by the computer in the form of particular output.

Types of Computer

Based on the purpose of the work or use, the computer is divided into different types. Different areas are used according to capacity in each field. Some computers can be powerful, large, high speed, or long lasting. The details of various types of computer are discussed as under:

1. **Analog Computer :** Analog computers are computers that measure physical quantities, such as pressure, temperature, length, etc. and express their measurements in numbers. These computers do the measurement of any amount on the basis of comparison. Analog computers are mainly used in the field of science and engineering because quantitative analyses have more use in these areas. For example, the analog computer, located at a petrol pump, measures the amount of petrol released from the pump and shows it in liters .It calculates its value and shows it on the screen.

2. **Digital Computer :** Digital Computer is a computer that calculates the numbers. Using a computer the user can prepare a budget, write a letter, make a picture, listen to music, watch photos and videos, play games and so on. Digital computer is based on binary digits (0-1). This computer can calculate with hundred percent accuracy. Digital computer converts data and programs into 0 and 1 in an electronic form.

3. **Hybrid Computer :** Hybrid computers have the properties of both analog computer and digital computer. For instance the computer's analog device measures the symptoms of a patient i.e. temperature, blood pressure etc. These measurements are later converted into digits by digital computer for the purpose of processing and output. This output can be immediately used for the patient's treatment.

Types of computer : Based on purpose of Use

Depending on the purpose, computers can be divided into following types :

1. **General Purpose Computers:** Most computers in use today are general-purpose computers .These computers are used for a variety of processing jobs. A general purpose computer is able to perform a wide variety of operations because it can store and execute different programs in its internal storage. Personal computers, including desktops, notebooks, smartphones and tablets, are all examples of general-purpose computers. These computers have multipurpose use like, word processing, music composition, digital games, programming, watching movies etc.

2. **Special purpose computers :** These computers are designed for a particular task. The CPU's capabilities are according to the given function. The same category of computers, such as children's books, mini computers, super computers, etc. These computers are highly configured compared to common personal computers. They are mainly used in defense, economic analysis, sports, big data analysis, movie production etc.

Need and Importance of Computer Accounting System

Computer accounts are kept through software. The software are based on the database. Unlike manual accounting system, accounting data entries are made through a system supported software. In manual accounting system various books of accounts are maintained on day to day basis before the preparation of final accounts. Entries are done through customized or readymade software designed for the purpose of accounting. Usually the requirement of computer accounting system has arisen due to the following reasons :

1. Accounting can be done with greater speed and accuracy.
2. Accounting data can be stored.
3. Large business organizations can use ERP (enterprise resource planning) packages.
4. Softcopies of all types of financial statements can be kept.
5. Classification of accounts can be done from the beginning.
6. Accounting data can be entered through coding.
7. The security of financial data can be maintained.
8. Print outs of accounting reports can be taken.

Apart from accounting, many other details can be kept through software packages such as employees' payroll, storage of goods, salary register, creditors diary, debtor's diary, tax returns, registers etc.

Features of Computer Accounting System

Due to some of its specifications, a computer has more work efficiency than the manual system. This system is increasing in importance to reduce the complexity of intense competition and increasing business dealings. Mainly it has the following characteristics -

1. **Accuracy :** This refers to perfect level of calculations and operations performed by the computer. It can also be called exactness. The errors made by the user are identified in a short time through computer programming. In case of manual accounting system, there might be a chance that the desired results may vary from the actuals. This is because of human involvement in the process of accounting. The computer performs the task of identifying errors and inaccuracies followed by the process of rectification.

2. **Speed :** The time taken by the computer to perform a certain task is called speed. In the manual accounting process, a lot of time is involved in creating accounts books, subsidiary books, cash book, trial balance, profit-loss accounts and balance sheet. The duplicate records are kept through the process of recording and posting, which is also time consuming. The same work can be done in a very short time by computer accounting software. This is due to its processing speed. Generally, time is calculated in minutes or seconds. But the computer has the ability to calculate the time in seconds. This helps in prompt decision making.

3. **Reliability :** The efficiency of service provided by the computer to the user is called reliability. The computer is a machine, which remains active through its artificial intelligence. This machine is free from any type of human emotion, such as cheating, fraud, deceit etc. It can work without any interruption for several hours, so it has proved to be more reliable than humans. The results of processing are produced according to the instructions given under programming therefore no chance of discrepancy occurs in the outcome.

4. **Multi-Tasking :** Computer can be used for more than one purpose. A simple form of computer can be used in many areas such as science, business, technical communication, defense, industry governance etc. It can do many things because of its multi-tasking ability. For each particular specific programming is done for specific tasks. For example, we can do accounting on a computer and also payroll related work of employees on the same computer. The user can do many things on the internet, such as on line ticket, online purchases, sales, e-mail etc. Thus, the computer fully utilizes its capacity.

5. **Automation :** A computerized accounting system eliminates or reduces many cumbersome and time-consuming manual processes. In addition to calculating it can create all accounting reports at the end of the year at a click of button through accounting software. It can generate the accounting reports in seconds due to automatic processing. In addition to automated accounting process, it also has the ability to share reporting, accounting statements and information with different users. Accounting information can be freely entered into computers by authorized users. Additionally, financial information and documents can be e-mailed in a few moments.

6. **Compatibility :** A computerized accounting system has the ability to work according to different business activities. It optimizes the exchange of information between two business centers. If two companies use computerized system, then all their accounts can be adjusted with each other in case of integration of both companies. In other words the accounting process through computers are not rigid and can be adjusted as per the business requirement. In case a business organization is dealing with two different types such as trading or manufacturing, the accounts or inventory can be maintained with the same set of computers with the change in software configuration.

7. **Storage :** Computer can preserve many types of information and data through its storage media. It stores data through files. These files can be from media, audio, video, text, software etc. These data and files can be used by the users as per the requirement. Many types of data in the company, such as inventories, salaries,

purchases, sales, taxes etc. can be stored through computers. Storage of data depends on the storage capacity of the computer. The storage capacity of data is measured by TB (Terabytes), GB (Giga byte), KB (Kilobytes). The storage is done by storage media such as the hard disk on the computer. Similarly data can also be stored in Pen drive, CD Rom. All these types of files and solders can be transferred through the Internet.

Basic structure of Computerized Accounting System

Computerized accounting system is primarily an organized system through which accounting decisions are taken. The first task of this system is to collect accounting related data. The structure of a robust computerized accounting system can be understood by the following points:

1. **Accounting framework :** It creates an environment to implement computerized accounting system. It prepares the basic structure of accounting. In this, a mixture of accounting principles, procedures, database, classification of data and accounts etc., are predesigned. Process of data input, data processing, results according to user, format of representations etc. are decided. This framework depends on the the accounting needs of the business .

2. **Operating Procedures :** A well-operated operating process accompanied by well-structured system of accounting is vital for establishing an effective computerized accounting system. A computerized accounting procedure is one of the database-oriented applications of computerized accounting system. Data related to transactions are collected. The user can access and collect accounting related statements and reports from the database using the necessary interface. Therefore, the basic principles of computerized accounting system include the requirements of database-oriented application. It's a comprehensive layout of the flow in which computer based accounting will be directed.

3. **Accounting Query :** Query is used to obtain any kind of information in the computerized accounting system. The query is a question that can be inserted into the database through software to obtain any information required by the user. For example, an accountant or user has to identify all the debtors or consumers who have not paid within the credit time limit. This type of information can be obtained through a structured query language. This type of facility is not available in the human accounting method.

4. **Data and Information :** Initially the computer accounting system was entirely dependent on transactions done in the business. This now is a system of decision-making through information in a business. It facilitates the user to make accounting related decisions and prepare articles through a well-organized process. First of all the data related to accounting are collected. Thereafter, the data are edited by classifying them. This process converts data into relevant information. Data is related to purchasing, sales, income, expenditure, creditor, debtor, property etc. This data is collected by different departments and a master file is prepared. Data is taken into use through software. Software packages are created according to the needs of the business organization. The software operates through the transaction process system. In this system all data collected is edited and authorized to convert it into required information. This system is based on input, processing and output. To make accurate decisions in the form of correct information, it is necessary to determine the exact type of data as an input.

5. **Computerized Accounting Process :** As mentioned earlier computerized accounting process operates through the transaction process system. This system works to record, process, validate and collect day to day transactions in the business .These transactions are related to business processes like purchase, billing, production, payroll etc. The transaction can be internal or external. When the production department requests the purchase department for the purchase of raw materials, or the transfer of goods to a sales center from one sales center, it will be taken into the definition of internal transactions. When the sales department sells goods to a customer, it is an external transaction. Generally the account of the financial accounting department are related to outside transactions. This can be divided into the following steps :

(i) Collection of Data : The collection of accounting data is compilation of all types of data in files at one place. Before designing any accounting package the classification of various heads is to be done under which data will be collected. It can be related to sale, purchase, cost etc. Accounting details are prepared only through all these collected data.

(ii) Data Editing : It is a process through which data collected is processed, and the inappropriate data is removed from the collected data, thereby causing no interference during the analysis process.

(iii) Data Validation: Data validation is an automated process by computer, which helps in reducing input errors in the data. This corrects data by correcting typing errors and other language related errors. It increases the ability to check and verify the accuracy of the data. This process helps in finding the right type of conclusions.

(iv) Data Manipulation: Under this process, some changes are made according to the requirement in the data collected, so that they can be easily used, to understand and analyze them for the users .It can be done through Data Manipulation Language.

(v) Data storage: The accumulation of accounting data can be done by various storage devices in the computer, such as pen drive, hard disk or CD. These data can be used by the user by retrieving the same from the storage device as per requirement.

(vi) Coding of Data: Data coding is providing a brief identification to the collected data. It is the process of identifying information collected on a large scale. The code can be a short word or a number. The analysis process of accounting becomes simpler through codes. The collected data can be speedily retrieved through codes. For example, code for cash sales can be CS and for credit sales can be CRS. In the same way, January can be given code JS.

(vii) Classification of data: Data are divided into groups based on a certain class .Each and every class holds some common factors so that they can be effectively used. In accounting process, data and transactions are divided into various pre-defined classes. Like a group of creditors or debtors of fifty thousand and above, a group of assets used for more than ten years, or a group of assets charged depreciation at fixed rate.

6.   Management Information System :

Management of a business is based on decisions taken by it. These decisions are based on the timely information received by its user. The stronger the information system of a business will be, the more accuracy and transparency will be there in the decisions. All this is possible by an efficient management information system. The management information system is the system that forms the basis of remaining systems of an organization. Information in the accounting information system is timely, accurate and systematic. It is a computer-based system that provides managers with tools to organize, evaluate and manage the flow of information among various departments. In other words, management information system is a system that meets the information needed to make decisions, in order to manage a business smoothly. In a business transaction cycle there are various transactions relating to procurement of goods, advance of vendor / supplier, amount to be paid to creditors, salaries etc. All these information are distributed to the other departments of the management information system of an organization. This information is provided through a computer based system. It is collectively an electronic mechanism through which a perfect flow of information is insured in the organization horizontally and vertically. This system supports the long term policy goals and objectives of the organization. The management information system can be defined primarily in the following points :

- It is an integrated user machine system.
- It provides information.
- It manages and operates the information
- It is used in Business

7.   Accounting Information System :

The use of information and technology in accounting is called accounting information system. It is an computer aided information system used in various areas of accounting, such as taxation, financial accounting, budgeting etc. The information of all these areas is used for managerial decisions. The accounting information system exchanges information for other active information systems. During the course of business ,there are various integral activities of the business that make a business, its invoicing on the sale of a merchandise, receiving a sales order and performing its operations, employees' wages etc. Under the Accounting Information System, all information related to accounting and finance can be exchanged among high, middle and lower management. Through this system, financial information about a person or an object is created for identification, collection and processed for a variety of its users. Data related to financial information are organized in such a way that right decisions can be made through its utilization. In addition, the accounting information system is a mixture of all the resources, so that the financial and other data are designed to be converted into information. This information is provided to the end users and decision-makers at their convenience. The use of this system provides the certainty of being able to control various types of financial transactions and deal in an effective manner. This system is also used in generating financial reports for its beneficiaries. To use information to make management decisions, that information should be managed in the right way, therefore information management includes :

- Determining the necessary information
- Collecting and analyzing information
- Storage of information and retrieve it when needed
- Use and distribute the information

Functions of Management Information System

(i)   Determining the information required for management: Many information is generated during planning, execution and inspection of a business. Some information is necessary to make immediate decisions and some are needed for later management decisions. Therefore a good management information system helps the managers with the relevante information at a particular point of time.

(ii)   Obtaining information for Information management and Analysis: Information can be obtained from technical reports, rural books, forms, group meetings or conferences, meetings, observations etc. The MIS receives data from company units and functions. Some of the data are collected automatically from computers

(iii)   Storage of information : It is necessary that the information obtained should be collected at one place so that it can be used later. Information can be stored in various books and documentation can be done as per the need and usage of the information. The basic principle of securing or storing information is to get this information easily recovered.

(iv)   Use of information: There are many uses of information for the management. It is used to solve collective problems, to set the resources (quantities and types) for upcoming projects in the business

(v)   Flow of information: It is the approach where the collected information or data is to be moved for management in decision process. In order to get the benefit of information collected, it is necessary that it should be shared with all stakeholders, consumers and other beneficiaries of the business. These users can also assists the persons engaged in collection of such information with regard to its collection and use.

8.   Accounting Reports :

Different types of financial reports can be processed by accounting information system. In the beginning, the data passes through various stages and it is converted into information. These reports are presented in brief according to the requirement of the users. The subject and format of the report varies for each level. The usefulness of a report depends on the fact that it helps the user to make decisions. There is timeliness in the computerized accounting information system. We can transfer, erase and produce the necessary report through a single click. Accounting

reports are prepared only through accounting information. Its process is as follows :

    (i)   Determination of the objectives of the reports.

    (ii)   Define users of reports

    (iii)   Designing the framework of reports

    (iv)   Preparation of query related to data base.

    (v)   Finalizing the reports.

The formulation of a good accounting system must include the following elements, which make the reports important in decision making. It includes :

-      Accuracy

-      Relevance

-      Timeliness

-      Summarized

-      Understandable

-      Perfection

The report prepared by the software is for different types of users. If the sales department wants information about the sale of the last one month, it can be produced from the sales report. If the personnel department requires data of salary for last six months, then it can retrieved from payroll report. The report related to the creditors or debtors according to the name of the party or the amount can be obtained from debtors and creditors book. The report can be summarized and can also be elobarative. Time based reports may be derived, such as quarterly sales, monthly salary, annual profit etc. Similarly, reports can be drawn as per demand, such as bad debt report etc. The reports as per the management information system, can be of the following types:

(i)   **Summary Report :** The activities of accounting are presented briefly in summary report. This report primarily represents the overall financial data of an accounting period of a   business unit, branch or a product. Multiple information are presented jointly in it. For example profit and loss account, stock of material, sales summary, summary of creditors and debtors etc. Such report doesn't contain details of every data content.

(ii)   **Trend Report :** Tendency reports are made for the purpose of comparing two or more units, products, branches. This report can predict future data according to previous figures. For instance, taking the base of sales of last five years, it can be ascertained in which direction the future sales would probably move. If the business unit or product unit is showing a negative trend, then managerial decisions can be taken to adopt an effective marketing policy to increase its sales.

(iii)   **Exception Report :** In this type of report, the extra ordinary information is shown separately from general information. Exception reports present information about abnormal circumstances. In the case of exception, this report is very helpful for making immediate decisions in any kind of managerial decisions. The manager does not need to look at any other report. This saves time and other resources. For example, in case of unusual sale on any ordinary day, a report of such days falls under the category of exception report. On the basis of such a report the purchase analysis for those days can be done.

(iv)   **Demand Report :** This report is prepared only at the request of higher level management. There is no certainty of its duration. The format of these reports depends on the information required by the user. Its format can be as summarized report, trend report, or exception report. For instance if the company wished to provide cash discount to its debtors, then they can take the information of the dues of the total debtors, which will help them in making decisions. The demand report will be the data of total debtors. Such reports are not generated on regular basis.

(v)   **Personal Report :** This report is related to a particular person, group or organization. Accounting reports such as debtors, creditors, banks, customers, and suppliers of raw materials can be submitted through a personal

report. For example, Ramesh & Company's six monthly Sales Report is example of a personal report.

9.   Management Information System and Data Interface :

The main function of the management information system is to provide information to different users of an organization through a computer network. This information helps in making managerial decisions. This type of system has to be coordinated with many departments and active areas of operations. The reason for this is that no single department can make its decision or plan its activities in isolation. The information from the various departments is needed to be provided to the managers. In this there is separate information system of each department for their level of activities performed, which is called sub-component. In order to make collective decisions in any two or more sub-components, the sharing of information is called data interfaces. It can be understood through the information of the following departments:
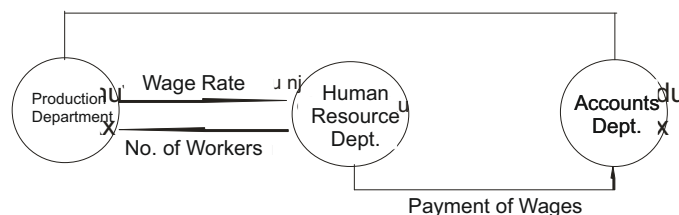
(i)   Accounting Information System, Operations and Production Information System and Human Resources Information System : The Department of Production requires the details of the workers from the Human Resources Department. The details of units produced by labours are given to accounts department for calculation and payments of wages. There after the details of the remuneration paid by the accounting department are given to the Department of Production and Human Resources so that management of employees can be done for their effective performance. Accounting Information Systems and Marketing Information Systems.

Similarly in the case of recruitment of new employees the accounts department, the information can be shared with human resource department, since the recruitment is processed by the later department.

(ii)   Accounting Information System and Marketing information System : Marketing and selling plays an important role in the progress of the business. It mainly includes -

-   Inquiries
-   Contact establishment
-   The order of entry of goods
-   Shipping goods
-   Consumer receipt

In the accounting system the transactions are to be supported by sales details, transport details, insurance etc. Apart from this, the consumer accounts are also needed to be reviewed for the purpose of collection .The inter-relationship between these departments can be presented through following figure (Picture 1).

Picture 1: Relationship between AIS, OPIS, HRIS

(iii)   Accounting Information System and Production Information System : Production Department is responsible for production of goods and deals with the planning, development and maintenance of production facilities as per the established production goals. It also provides the flow of information with the acquisition, storage and availability of production material. The production department performs the following functions in business:

-        Preparation of plans
-        Quotation of raw material
-        List of items to be produced

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- Order for the release of raw material purchased
- Handling the suppliers invoice
- Payments of suppliers

The accounts department processes the purchase orders, makes payment to creditors or suppliers in coordination with production department and the information flows through their respective information systems. The information regarding production is provided by production department to accounts department through information system.

Accounting software

Accounting process through computerized accounting system is performed with the help of accounting software. It is software that processes accounting transactions with functional modules such as journal, ledger, trial balance etc. In its absence, the accounting process cannot be easily completed by the computer. In computer based accounting system, accounting software is required in following two situations:

- When current computerized system is replaced by new requirements.
- When manual system of accounting is converted into computerized accounting system.

There are many accounting software available in the market, which are of different importance to different types of businesses. Before using the accounting software, the following general conditions should be taken into consideration:

1. **Flexibility :** It is the ability of the software to make data and hardware enable as per the need of the user. It refers to the adaptability of the accounting system as per the change in the accounting process. The flexibility of the software should be kept in mind at the time of installation or upgradation of computerized accounting system.

2. **Installation and maintenance costs :** The software should be selected based on the objectives of the organization. Economical software should be used inorder to maintain its cost. Therefore a cost benefit analysis should be applied before the installation, before adopting any software.

3. **Easy adaptability and minimum training requirement :** Accounting software should be selected on the basis of ease of handling by the user. This means that the software should be user friendly .The user should find himself in a comfortable position while making the accounting proceedings through it. The user should be able to perform its activities with minimum effort and support. Some software are user-friendly and complete with easy training. But some complex software packages may require extensive training.

4. **Level of confidentiality** : The software should contain high level of security for the purpose of safeguarding and protecting the accounting data. If privacy is not kept in mind then important information related to the organization can be leaked and misused, that can be fatal to any organization. The higher the level of privacy, the more information related to the organization will be kept safe.

5. **Size of Organization :** The larger the size of the organization, the accounting software will be more complex and cost-sensitive. Small organizations, where the number of accounting deals is not high, such organizations can take software with simple and single user, while large organizations require special software to meet the user's needs.

6. **Utility** : If the level of management information system is high, that is the number of department is large then software should also be of high standard. In the organization the management information system and its utility rate, decide the need for software.

7. **Vendor information** : The organization should be well informed about the supplier of the software. The software should be purchased and installed from a vendor who has expertise in this area and provides his services for upgradation etc. on the demand of the buyer, related to vendors should always keep the buyer.

8. **Import-Export of data :** Sometimes the data base of accounting software needs to be changed from one system or software to another system or software. For example Information about the institution's liability in

ERP packages has to be changed directly into spreadsheet software. Accounting software should be such that it can transfer data originally. Ready to use accounting software have the facility of import export of the data but they are restricted to the MS DOS only and are not supported by any other operating system. Tailored software is designed in such a manner that it can interact with all the different subgroups of Management Information System and should be compatible with other software and operating systems for data transfer.

Types of Accounting Software

In the computerized accounting system, the accounting work and its reporting are prepared according to the needs of the institution. Accounting software, also called accounting packages, are of the following types:

1. **Ready to use Software :** Such accounting software are not developed for any particular user. It is useful software for small traders who have very limited dealings in business. They lack privacy, but they are simple to understand and are less expensive. Its training is simple and does not involve much cost in training, as the vendor provides training without any cost. These are usually not related to any other information system. The possibility of deception in this software is high because privacy is of low level.

2. **Customized Software :** It is useful for medium and large business entities. The cost of installing and maintaining these is high, because the software needs to be altered according to the requirement of the user. The privacy increases in this and the authorized persons alone can use it. Due to the availability of all these benefits, the costs of the user's training and after-sale service is high.

3. **Tailored Software :** Such type of software is fully prepared according to the instructions of the customer. It is demanded by large business establishments, which are geographically distant at different places. The development cost is high in comparison to customized or ready to use software. Highly trained users are using this software and therefore they can have an optimum utilization of the software

Advantages of Computerized Accounting System

Compared to human accounting, there are many benefits of computerized accounting. These are summarized below.

1. **Less Error :** Errors become extinct in the computerized accounting system because initial accounting data is entered at one time and then used to prepare accounting details. Mistakes are likely in the manual accounting system, because big data on repetitive basis is often used for identical entries to prepare various accounting documents. Computer accounting works with complete accuracy. It keeps the chances of error at a lower level.

2. **Automated Information:** Accounting records are updated automatically in the computerized accounting system. Therefore, the details of the accounts are prepared and extracted for the latest accounting information. For example, the effect of any purchase on cash account, purchase account, and the final account (Trading, Profit and Loss account) is instantly displayed by entering cash payment on the purchase of goods in accounting data. The effect on final accounts is observed immediately after the primary entry. There is no requirement of making duplicate entries in the accounts .The up-to-date detail of accounting documents are available at all times.

3. **Exchange of data :** The accounting data processed through computers can be shared from, one computer to another through local area network. This allows different users to have multiple information at the same instant. The accounting reports can be also shared among different branches located at distinct geographical locations.

4. **Preparation of documents :** Most computerized accounting systems have preset parameters and formats, which automatically prepare accounting reports according to the user's need. For instance the accounting reports such as cash book, details of summarized account, trial balance etc. can be retrieved on one click.

5. **Clarity :** When data comes to the monitor of the computer, it is provide clarity by its visibility because of

standard fonts for typing is taken. Similarly the hard copy of accounting documents also possesses the same clearity and redability. This eliminates error and ambiguity in understanding caused due to handwriting in manual accounting system.

6.   **Reports :** Computerized-accounting system provides information for management with immediate effect that is necessary for managing and controlling business. Various summarized reports related to debtors, creditors, accounts payable, accounts receivable, inventory, cash balance can be prepared. Analysis can be made on the basis of these reports. For example, if a company restricts credit sale to a certain limit of sale, then this information will be immediately available on the computer .This will restrict the credit sale,upto the pre decided limit. On the other hand it takes time in the manual accounting system to track this type of restrictions.

7.   **Storage and access of data**: Computerized accounting system stores data for a longer duration through its storage media like hard disk, external SD card, compact disk, pen drive etc. The electronic storage takes very little space compared to the manual storage. Additionally, you can get the data and information very quickly through computer storage media, by giving the command to the computer.

8.   **Motivation and benefits for employees:** Employees are required to take special training in computer systems so that they consider themselves to be more valuable. This encouragement keeps the interest in his job. Their efficiency and effectiveness in their job reaches higher level, which is helpful in their professional growth and development.

Manual and Computerized Accounting System

The difference between manual and computerized accounting system can be understood through the following points:

1.   **Elements of Manual Accounting System :**
     (i)   Financial transactions are done manually (handwritten).
     (ii)   Transactions are recorded by original entries in books of accounts and can be retrieved from these books.
     (iii) The original entry of the transaction is done in the journal, after which it is posted in the ledger books. Thus financial transactions are recorded twice.
     (iv)   After preparing the Journal and Ledger, Trial Balance is prepared to summarize the accounts.
     (v)   The final accounts are prepared with the help of Trial Balance, in which profit-loss account and Balance Sheet is finalized.
     (vi)   In case there is any error in entries in primary or secondary books, adjustments are made to remove it. Errors are corrected by passing rectification entries.
     (vii) At the end of the year, accounting ledgers (Assets and Liabilities) are closed and their balances are transferred to next year.

2.   **Computerized Accounting System :**
     (i)   Financial transactions are recorded in computer through program based software applications.
     (ii)   Financial transactions are recorded through the database.
     (iii) The accounting transaction once recorded in the computer, immediately get processed in all other books of account.
     (iv)   Ledger accounts are not required to prepare trial balance. The accounts balance can be known through summary accounts. After each entry the accounts book balances automatically.
     (v)   Profit & loss account and balance sheet are created while passing the entries in primary books. The reason for this is that every entry is directly processed and final accounts are not dependent on trial balance.

(vi) There is no necessity for making any type of manual entry for error correction. It can be done automatically through primary entry.

(v) Preliminary and final accounts are stored in the data base.

3. **The main difference between Manual Accounting and Computerized Accounting System for the purpose of implementation can be explained as follows:**

   (i) Speed : The main difference in human accounting and computerized accounting system is speed. Accounting transactions are processed through software aided database that prepares financial statements much faster than in the manual system. Calculations and other mathematical work is automatically performed with the help of software. In manual accounting, right from primary entry to the final accounts, hand-written accounts are prepared by the accountants, in which the possibility of errors might occur. For these reasons, it takes time to complete the accounting process. Computerized systems are less likely to have errors, and if done, then it takes less time in comparison to the manual accounting system. In the computerized system, only data is entered once and the account details are prepared on the click of a single button.

   (ii) Cost: The second difference between human and computerized systems is cost. Software-based computerized systems are more expensive compared to paper and pencil based manual system. Cost of maintenance of computerized system is also high. It requires skilled staff to run and their training costs are too high. In addition to computers, other hardware like pen drives, UPS, server, printer, hard disk, etc. are required. The maintenance cost of all such equipment also costs a lot. Thus, this accounting system is more expensive than the manual accounting system.

   (iii) Back Up of Data: The third difference in human and computerized systems is back-up of financial statements. In this system, many types of details can be stored at some other place. Those details can be kept safe. In case if any damage occurs the backed up data can be used.

   (iv) Security: Accounting details and reports in computerized system can be kept safe through password protection. It is not possible to steal these computerized details or to misuse it in some other way. The possibility of stealing from the books of account prepared under the manual system or using them by any unauthorized person remains persistent.

   (v) Classification: In manual accounting system, the transaction is classified on repetitive basis after recording in the initial books of accounts. As a result, the copy of transaction of accounting data is prepared. While in the computerized accounting system, classification is done initially, thereafter automatic classification is done at the time of making the entry. To prepare the books, the data of the secured deals is classified as a document. A similar transaction data is displayed by various documents.

   (vi) Summarization: Transactions in the manual accounting system are briefly shown in the books, after which their account balance is transferred to the trial balance. Whereas in the computerized accounting system, initially accounting database is prepared and thereafter entries are made in designed formats, that are eventually shown in the trial balance document. The summarized records of the accounts can be extracted instantly as and when required. Preparation of books for the trial balance is not necessary under the computerized accounting system.

   (vii) Adjustment Entry: In the manual accounting system, accounting entries are recorded on the principle of double entry book keeping system. In other words, it can be said that the insertion of these entries is done in the form of a match between debit and credit entries. Apart from this, some other adjustedment and rectification entries are also done for improvement. While computerized accounting voucher entries are made on the basis of expenditure and receipts, due to which chances of error are less.

Types of Computerized Accounting System

The computerized accounting system is a multilateral accounting system in which data is entered through

accounting software and automatically books of accounts, trial balance, profit & loss account and balance sheet is prepared. This system operates various co-functions of accounting. These functions are discussed as under:

1. **Management Accounting :** The purpose of management accounting is to run business smoothly by analyzing the financial information provided by the management. This is done by providing right and required information to management accountants. This is done through transfer of data through networking with the mechanism of accounting information system. It is the branch of accounting, which manages to make business decisions and exchange information between the administrators. It records the actual cost, and tries to reduce costs by various cost control techniques, such as standard cost, budgetary control, marginal cost accounting etc. This system compares the standard costs and actual costs employed by the firm and with the use of computer the variations between the costs are estimated and controls are made. A sub part of this method is estimated accounting, in which the software estimates the cost of any item produced or any project undertaken. It also examines how much profit is obtained by using the estimated cost. Management accounting lays emphasis upon fuller utilization of financial resources.

2. **Inventory Accounting** : Inventory accounting system is used for determining the value of stock and determine its level. Valuation of stock is the process of calculating the value of finished goods, work in progress in terms of rupees on a particular given date, when the goods are purchased. A database is created for each and every item of goods. The process of codification and classification is followed for inventory management. At the time of every purchase and sale, the goods are entered in the format preset by the software with the calculations required for its valuation. After every entry the units of goods along with its value are immediately acertained. Such entries are known as inward entry and outward entry. The computers are connected to various departments through the data interface. In this way, the amount of material available for use in it is always available with the store manager, purchase manager, accounts officer. In case the business unit is engaged only in trading then bar coding is done in the context of the products. This is helpful in displaying the content details and price of the product.

3. **Industry Specific Accounting :** The accounting system includes industry special applications as accounting requirements for a retailer are different from other category of business. Similarly, for a grocery trader or general store the requirement would be different from merchandise specific trader. This is because the sale of grocery merchandise will be high in cash and its stock evaluation will be a complex process, because the stock contains many types of materials. The software requirement for a courier company will be different. It requires tracing so that it can be ensured that the goods sent have reached the right person. In the same way, special accounting software is prepared keeping in view the prevailing general practical conditions of particular industry, which can comply with its operations.

Limitations of Computerized Accounting System

The main limitations of the computerized accounting system are given below:

1. **Cost of training:** Computerized accounting packages usually require trained staff for operating the computer accounting system in a most effective and efficient manner. Training is required to obtain knowledge of the technology and software used in accounting. The cost of training on regular basis may not be suitable for small concerns.

2. **Resistance of Employees**: Whenever accounting is computerized, it is opposed by the accounting staff. These employees are preoccupied with the notion that they will have less importance in the organization and their numbers will also have an impact.

3. **Disintegration:** When an organization moves to computerized accounting system, it has to go through wastage of time of ts establishment. This is due to the change in the environment of work and for this, such accounting staff is required to adopt the system and method of operation. The entire accounting mechanism may be divided into separate segments, that may lead to shuffling of employees.

4. **Failure of the system:** The serious limitation of the computerized accounting system comes when a terrible

situation arises due to the failure of hardware or software resulting in the loss of work. However, this situation can be solved by the back-up arrangement. The software's failure can be caused due to virus. Such a situation is actually due to the extensive online use of internet in accounting systems operation.

5. **Unable to check fault:** Since the computer lacks the ability to decide on its own, as it doesn't possess any ability to detect the faults or errors on its own. This is because computers are enabled to detect only those errors that are permitted by the application software.

6. **Breach in security:** Detection of computer-related crimes is a difficult task. The computerized data can be stolen without notice or any clue that the data is stolen. This is because the primary data exists in the file so it is very difficult to identify that which data or file is copied or extracted by an unauthorized person. In the manual Accounting System, the theft of data can be identified. Fraud and embezzlement in computerized accounting system can be done by altering data or programs. Accounting records can be obtained by altering the user's password or data can be even misused by the authorized person having excess to password. It is obtained by re-opening, telecommunication tapping, line taping etc.

7. **Impact on health:** A wide variety of health problems arise due to continuous use of computer. Waist pain, eye problem, muscle pain and other illness may occur to the user. It has adverse effect on the work efficiency of accounting staff and on the other side the medical expenses of the employees may increase.

8. **Lack of general consciousness**: Computer programming is done in such a manner that it makes a decision according to the instruction given in the programme. Any small mistake of any kind in instruction can have great negative impact on the results. The machine does not have this capability to automatically correct the small error and give the right results in a better format. Therefore, due to the lack of general consciousness, the possibilities of wrong consequences remain in this system.

9. **Inability to make decisions:** The computer cannot take any decision on its own, because it acts according to the instructions given by the user. User has to give instructions through program to deal with every type of situation. Computers do not have the ability to make decisions like humans. Even for small decisions, instructions have to be given to the computer.

10. **Expensive System:** As stated earlier, large expenditure is required to install computer system in business. The expenses incurred in manual system are limited. From time to time, software have to be upgraded, due to that the expenditure is likely to increase. It is not possible for a small trader to afford this. In addition, training of staff has to be done.

11. **Lack of security :** The data stored in the computer contain all the secret information of a business. Any unauthorized person can take out that data and use it. However there are various measures to protect it but sometimes the system may fail due to the expertise of unauthorized persons or hackers.

Summary

- **The meaning of computerized accounting system :** Computerized accounting system is a technique by which all accounting activities are operated through a computer".

  The following items are needed for the implementation of this method.

  1. Computer; 2. Software; 3. Hardware; 4. User; 5. Networking process

- **Components of computer :** Computer parts can be divided into three types

  1. Input unit
  2. Output unit
  3. Central Processing Unit

- **Need and Utility of Computer Accounting System :** Computerized accounts are kept through software. This software is set up on database. Usually the requirement of computer accounting system has arisen due to the following reasons:

  1. Accounting can be done with speed and accuracy.

2. Accounting data can be stored.

3. Softcopy of all types of financial statements can be kept.

4. Classification of accounts can be done from the beginning.

5. Data can be entered in the system through coding.

6. The security of financial information can be maintained.

7. Print out of accounting reports can be taken.

● **Features of Computer Accounting System :** A computerised system has more work efficiency than the manual system due to its specifications. This system has gained in importance due to increased complexities, intense competition, increasing business dealings. Credibility, speed, reliability, multi-functional, automation, compatibility and storage are its main features.

Questions for Exercise

Multiple Choice Questions :

1. Which among the following is an input Device :
   (a) Key Board   (b) Monitor   (c) Hard Disk   (d) Printer

2. The main function of the memory in computer:
   (a) Run the program   (b) Controlling the hardware
   (c) Storage   (d) All of the above

3. For CPU the full form is:
   (a) Control Process Unit   (b) Central Production Unit
   (c) Central Processing Unit   (d) Control Program Unit

4. A group of computer programs that effectively organize data is called :
   (a) Program   (b) Information System   (c) Database   (d) All of above

5. The benefits of computerized accounting system is :
   (a) Speed   (b) Reliability   (c) Readability   (d) All of the above

6. A report of Trading account, Profit and Loss Account etc. of an organization is :
   (a) Exception Report   (b) Reporting Framework
   (c) Liability Report   (d) Summary Report

7. The following are functions in the managerial process:
   (a) Planning   (b) Directing   (c) Control   (d) All of the above

8. Software is:
   (a) Language   (b) Program   (c) Physical part of computer   (d) None of the above

9. Which of the following languages is directly understood by the Computer ?
   (a) Machine language   (b) Assembly language   (c) English language   (d) High level language

10. The process of computerized accounting is integration of:
    (a) Sale   (b) Purchase   (c) Ledger   (d) All above

11. A feature of the Computerized Accounting System is
    (a) Purchase and sale reporting   (b) Online entry of accounting data
    (c) Both of the above   (d) none of above

Very Short answer type questions :

1. Describe any two characteristics of computer accounting system.

2. What is the Computerized Accounting System?

3.   What is the Management Information System?
4.   What is the Customized Accounting Software?
5.   Name various Components of the Computer.
6.   What is Central Processing Unit?
7.   What is the Accounting Information System?

Short answer type questions :

1.   Explain the difference between hardware and software.
2.   Describe the limitations of the computer accounting system.
3.   Describe the characteristics of the computer accounting system.
4.   Describe different parts of the computer system.
5.   What is the computer accounting system? What are its utilities?
6.   Explain differences between manual accounting system and computerized accounting system.
7.   What is an accounting report? Explain with example.
8.   Explain the contribution of computers in accounting.
9.   Explain various information systems related to the computer.
10.   Explain the types of accounting software packages.

Answers of Multiple Choice Questions

Question No.	1	2	3	4	5	6	7	8	9	10	11
Answer	a	c	c	a	d	d	d	b	a	c	c