Accounting Information System: An Application of Information Technology in the Area of Accounting

Parmil Kumar,
Assist. Professor Commerce,
Govt. P. G. College, Ambala Cantt.
E-mail ID : parmilkumar2512@gmail.com

ABSTRACT: Accounting Information System is essential to all type of organizations nowadays. The economic and industrial scenario in the recent past has been changing rapidly both in India and elsewhere. Especially, the growing intensity of competition has forced corporate sector to establish more innovative production and communication systems. To the modern business, the information flows are as important to the life and health of the business as the flow of blood is to the life and the health of the individual. As such the managerial functions centers around its decision making capabilities of the organization towards its cherished goal. This would not be possible without having adequate knowledge which in turn depends on relevant information. All over the world, Information and communication Technology (ICT) is playing an increasingly important role in both business and individual’s private lives. This is the era of Information and Communication technology and informational technology has touched all sphere’s of life. All organizations are adapting Information Technology in their business processes. The organizations have adapted Management information Systems (MIS) in taking strategic business decisions. An Accounting Information System is the System of records a business keeps to maintaining its accounting system. This includes the purchase, sales, and other financial processes of the business. The purpose of AIS is to accumulate data and provide decision makers the necessary information. In the decision area of Accounting and Finance, which is the most crucial area of management, flow of accurate, timely and sufficient information is necessary.

Key Words: Management Information System (MIS), Accounting Information System (AIS), Financial Accounting Standard Board (FASB), Information and communication Technology (ICT), Recording, Computerized System, Electronic Data Interchange (EDI), Decision Making, Corporate Social Responsibility,
Corporate Image, Corporate Sustainability

INTRODUCTION:

Accounting Information System is essential to all type of organizations nowadays. The economic and industrial scenario in the recent past has been changing rapidly both in India and elsewhere. Especially, the growing intensity of competition has forced the corporate sector to establish more innovative production and communication systems. To the modern business, the information flows are as important to the life and health of the business as the flow of blood is to the life and the health of the individual. As such the managerial functions center around its decision making capabilities of the organization towards its cherished goal. This would not be possible without having adequate knowledge which in turn depends on relevant information.

Martin Harper, Jr. has rightly said, “To manage a business well is to manage its future and to manage its future is to manage information.”

Peter F. Ducker is very emphatic about the importance of information to managers. “The manager has a specific tool: information. He does not handle people: he motivates guides and organizes people to do work. His tool, his only tool to do all this is spoken or written words or the language of numbers.”

The most challenging problem faced by the world today is to meet the human needs through creation of goods and services. Moreover, needs have been increasing day by day in terms of quantum as well variety. With the rising level of standards of living apart from basic needs non basic needs are also increasing and require to be fulfilled. More clearly, the limited natural resources which are the inputs to creation of goods and services are dwindling at an increasing rate and becoming progressively scarce. In such a situation, judicious and optimum utilization of these available resources is great need of the day. For optimum and judicious utilization of resources, timely, effective decision making is required. To make a sound decision, sum piece of information is required to have a clear cut view of the situation. In the organization, all level of employees needs information to update their knowledge and make decisions which are capable of using resources most efficiently. It is the responsibility of the management to devise policies, establish procedures and practices to make available the relevant information. Need of management for relevant information to discharge its responsibility is comparatively vital as the economic and industrial scenario in the recent past has been changing rapidly. Moreover the growing intensity of competition has forced the corporate sector to establish more innovative production and communication system. In this time of rapid technological changes, vigorous global and domestic competition and enormously expanding information
processing capabilities Management Information System (MIS) provides useful and timely information for the timely decision. It has been reported that the traditional measures of decision making hindered the introduction of new system, which is necessity to improve the overall competitive capabilities of the corporate. Therefore the managers believe that management information system should be improved to meet there increasing demand of information in rapidly changing environment.

All over the world, Information and communication Technology (ICT) is playing an increasingly important role in both business and individual’s private lives. This is the era of Information and Communication technology and informational technology has touched all sphere’s of life. All organizations are adapting Information Technology in their business processes. The organizations have adapted Management information Systems (MIS) in taking strategic business decisions. Accounting Information System (AIS) is a division of MIS. An Accounting Information System is the System of records a business keeps to maintaining its accounting system. This includes the purchase, sales, and other financial processes of the business. The purpose of AIS is to accumulate data and provide decision makers the necessary information. In the decision area of Accounting and Finance, which is the most crucial area of management, flow of accurate, timely and sufficient information is necessary. in the financial accounting, the information approach was officially introduced in 1978, when the statement of Financial Reporting Concept number (1) was issued by Financial Accounting Standard Board (FASB). According to this statement “Financial Reporting should provide information that is useful to present and potential investors and creditors and other users in assessing the amount, timing and certainty of prospective cash receipts.”

Prop. H. A. Simon views the computer as the fourth great breakthrough in the history to aid man in his thinking process and decision making ability. The first was the invention of writing which gave man a memory in performing mental tasks. The remaining two events prior to the computer were the devising of the alzabric number system with its zero and positional notion and the invention of analytic geometry and calculus which promise the solutions of complex problems in scientific theory. Now the electronic digital computers combine the advantages and attributes of all these breakthroughs and make them available for decision making and management of organizations.

A quite revolution has been sweeping for last four decades in the computer world. Right from its advent, there had been no doubt that it was going to be a highly useful machine. This conviction has been reinforced many times since then and growth in the number of useful application has shown no sign of abatement. Even the nature of applications is now becoming
increasingly so varied that, it seems, hardly any discipline would be left for long which is not touched by the use of computer. Such a phenomenal growth process would not have been possible, had computer not come near the users over time. Side by side, the manners in which programmers’ are written for the computer have undergone a sea-change. The development of software engineering and unbelievable progress in the hardware technology are together, poised to ensure that computers become more and more familiar to users. The fast developments in the information technology made only access to information cheaper but also have paved way for treating information as the resource. The information at global level is multiplying over every decade. The manager of today have to view themselves as information mangers and have to cope with increasing level of information with which they have to deal.

Management Information System

Management information system is planned and organized approaches to supply executives with intelligence aids that facilitate managerial process. It is a system that aids management in making, carrying out and controlling decisions. Management Information System is an organized approach to gathering information from company operations and making strategic decisions. It is an approach of providing timely, adequate and accurate information to the right person in the organization which helps him in taking right decisions. So, MIS is a planned and organized approach to transferring of intelligence within an organization for managing it an efficient and effective manner. The information is furnished into useful quantum of knowledge in the form of reports. Hence, developing quality characteristics for gathering information is essential to making solid management decision.

Management Information System (MIS) are used to manage the data created within the structure of a particular business. These systems store the data and allow the business to manipulate, analyze and compile the date through the use of software applications. Reports and analysis pulled from an information system can assist in the directing, planning and decision making needs of managers.

Accounting Information System

Accounting Information System—shortly called as AIS is defined as a system of records maintained by an organization to keep its accounting system. The system incorporates many functions like buying, selling and other pecuniary processes of the organization. In fact, AIS is a division of Management Information System, shortly called MIS. The responsibility of AIS is to built up statistics and gives decision makers like investors, creditors, and managers the data to make decision.
Accounting Information System is basically the combination of learning and applying accounting with the design, implementation, and monitoring of information system. The system makes use of fresh information technology resources along with usual accounting controls and methods to supply users the financial information needed to control their organizations.

The accounting information system is an integral part of any business. It should provide users with timely information to aid in decision making. Accounting information system are helpful with preparing financial statements, taxes, reconciling bank accounts and generating reports. AISs combine the study and practice of accounting with the design, implementation, and monitoring of information technology resources together with traditional accounting controls and methods to provide users the financial information necessary to manage their organization.

Definition of Accounting Information System

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Accounting Information system is a system of records, usually computer based, which combines accounting principles and concepts with the benefits of an information system and which is used to analyze and records business transactions to prepare financial statements and provide accounting data to its users. Some accounting information systems are still manual, i.e. accounting records are made with a pen, paper and manual entries into accounting books.

Features of Accounting Information System

1. Timely Information: Accounting information system should provide the users with timely information. This information helps users and business owners with strategic planning, budgets and other valuable sales information. Payroll, bank reconciliations and creating spreadsheets are some of the tasks that accounting information system should be capable of handling.

2. Easy to Use: Raw data such as vendor names, sales data and amounts and purchases are entered into the system. Point of sale devices offer another means of data to be input directly into accounting information system. Once the data is input, the system processes any calculations, reports, and reconciliations. For popular accounting information systems such as QuickBooks, reconciling bank and credit accounts is as simple as clicking mouse to match accounts with one another.

3. Internal Controls: Accounting information system makes it easier for
the user to establish internal controls. These internal controls include various inventory decisions resulting from sales data. A good accounting information system helps detect fraud, theft and other mismanagement.

4. Decision Making: Data recorded and processed in accounting information system yields reports that aid managers and owners in the decision making process. These business decisions include how much inventory should be carried and how much money should be spent. Most accounting information systems can yield statistics that indicate performance of products and services. This information can further be analyzed to make decisions regarding sales, cost of goods sold and efficiency.

5. External Financial Reporting: One of the most important characteristics of accounting information system is its ability to produce information that helps to generate year-ending financial statements. From accounting information system user should be able to create company’s balance sheet, income statement, shareholder or owner’s equity and statement of cash flows. Many accounting information systems have the ability to create financial statements within the software itself.

Accounting Information Systems: Customization

These systems can be customized to meet the needs of a business. For example, information technology professionals responsible for business process and information technology professionals responsible for the accounting information system can work together to develop and implement such a system that is automatically gets information from other sources already in use by the business. Also, the systems can be set up to feature certain functions that are important to the business and eliminate functions minor to the business. Information can be automatically fed or manually fed into a business accounting information system at whatever pace and however often it is necessary.

Benefits of Accounting Information System

Businesses use accounting information systems to make their accounting activities easier, quicker, and more accurate, since accounting records are analyzed and financial statements are prepared within the system, which allows to save time of employees and avoid mistakes. Since many accounting information systems are equipped with error reducing mechanisms and gather information regarding transactions electronically and automatically, data entry and computing errors are rare. Such systems are often automatically populated with transaction information, and many accounting processes are less cumbersome and time-consuming when using such system.

The AIS is usually a computerized system comprising business and accounting software and computers. This automated system allows
comprises to collect and review information in a timelier manner than using the traditional, manual-style AIS. Companies are able to lower business costs by eliminating waste in the production process or limiting the number of hours workers are allowed to spend on one project.

AIS have the following benefits:

- **Integrate Accounting Functions**: Integrated accounting information systems collect management accounting information and financial accounting information in the same accounting ledger. Traditional accounting methods have separated this information between two accounting ledgers; management accounting is typically used by business managers for decision making purposes while financial accounting information is used by external users. Integrated accounting puts this information in one system so company accountants can reconcile the information and present a full picture to internal and external users of the company’s financial information. Using computerized AIS can help accountants complete this process quickly and accurately so managers can make timely business decisions regarding new opportunities.

- **Work with Current Systems**: The AIS should be able to work with current company software rather than around it. Business technology can sometimes be difficult to integrate and align when working with different systems or computer software modules. Integrated AIS is oftentimes sold as individual accounting modules, allowing companies to pick and choose which module it wants to implement in its current system. Common AIS modules include general accounting, cost allocation and accounts payable. These modules are typically used by both management accounting and financial accounting functions, helping companies to integrate these processes under one AIS module.

- **Improve Information Collecting**: Integrated AIS modules should improve the company’s accuracy when collecting and reporting vital accounting information. The systems should be easy to work with and allow multiple employees to access the information needed. Installing complicated software or technology can have a download effect on employee productivity; more time should not be spent managing the system rather than the information collected by the system. Accountants may not be most technological employees in an organization. Installing or implementing difficult AIS module or systems that cannot integrate with current business or accounting software may limit the accountant’s ability to gather and prepare accurate and timely financial information.

- **Makes Accounting Process Easier**: Accounting information systems are useful for companies and businesses wanting to make the accounting process easier by utilizing a computer program or other system that will perform payroll and other functions. These systems, commonly including
accounting software, make it easier to compile financial data for use in taxes, payroll, and other bookkeeping requirements.

**Future Forecasting:** The use of information systems is very important in recording vital financial data that will be used in the future. Major corporations, especially in the retail industry, will keep such data as sales, profits, expenses, and many other items for future use in financial reports. This is very important also because it will not only be used for daily practices, but will be necessary for tax purposes for the remainder of the year.

**Reference for Legal and Audit Issues:** Data has to be kept on file for a number of years, in the event of an audit or other financial issues that may arise. Legal issues can cause severe problems and even end in the destruction of a company. By using computerized accounting information systems to organize and retain this data, companies have a much better chance to survive and succeed.

### Process of AIS

1. **RECORDING:** Recording is the first step in these systems that are used by companies including pertinent data such as expenses and profits that are very important to keep on file.
2. **PROCESSING:** After the recording phase, the information will be processed for use. When processed, it is filled in the areas where it is most important. These systems have various groupings or categories to maintain files until they need to be used in future for whatever reasons.
3. **COMMUNICATION:** The final step that is part of most software programs is the communication phase. This is the process of actually utilizing the records that have been recorded and processed. Common communications of this data will be used for payroll and tax purposes. The process of AIS is shown in Exhibit 2

#### Exhibit 1: Process of AIS

<table>
<thead>
<tr>
<th>RECORDING</th>
<th>PROCESSING</th>
<th>COMMUNICATION</th>
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### Development of Accounting Information System

The development process of an Accounting Information System involves three main phrases including planning, analysis and design. However, each phase needs a time duration ranging from a few weeks to as long as several years depending upon its nature.

**PHASE 1 – PLANNING:** Being the first phase of the development process,
the planning of the project is considered as an important step. The planning phase involves resolving the possibilities and purposes of the project, the definition of project responsibilities, control requirements, project phases, project budgets, and project deliverables.

PHASE 2 – ANALYSIS: Second in line, the analysis phase involves resolving and filling the accounting and business processes carried by the organization. They are reformed in such a way to provide advantage of best prices or of the operating characteristics of modern system solutions. The phase further can be subdivided into three main categories:

- **DATA ANALYSIS**: It is the complete analysis of the accounting information presently being gathered by an organization. These are then compared with the information that the organization has been previously preparing for managerial purposes. Basically, this is used in planning accounting transaction processing systems.

- **DECISION ANALYSIS**: It is the complete analysis of the decisions a manager is liable for making. They are considered as individual decisions and therefore are viewed on individual basis. It is determined by the help of models created to support the manager in collecting relevant information to develop and design alternatives, and to make actionable choices.

- **PROCESS ANALYSIS**: It is the complete analysis of the organization’s business processes. The processes are identified and divided into series of events on the basis of adding and changing data. With some modification it improves the organization’s operations in terms of lowering cost, improving services, improving quality, or improving management information.

PHASE 3 – DESIGN: The design phase accumulates on the result produced by the analysis phase and builds up detailed, specific designs that can be applied in subsequent process. The process involves events such as designing of inputs, processing, storage, and outputs of the planned Accounting Information System. It involves the detailed design of all inputs, processing, storage and outputs of the proposed accounting system. Inputs may be defined using screen layout tools and application generators. Processing can be shown through the use of flowcharts or business process maps that define the system logic, operations, and work flow. Logical data storage designs are identified by modeling the relationships among the organization’s resources, events, and agents through diagrams. Also, entity relationship diagram (ERD) modeling is used to document large scale database relationship. Output designs are documented through the use of a variety of reporting tools such as report writers, data extraction tools, query tools, and on-line analytical processing tools. In addition, all aspects of the design phase can be performed with software tool sets provided by specific software manufactures.
Implementation of AIS

The implementation phase consists of two primary parts: construction and delivery:

CONSTRUCTION: Construction includes the selection of hardware, software and vendors for the implementation; building and testing the network communication systems; building and testing the databases; writing and testing the new program modifications; and installing and testing the total system from a technical standpoint.

DELIVERY: Delivery is the process of conducting final system and user acceptance testing; preparing the conversion plan; installing the production database; training the users; and converting all operations to the new system.

Security in AIS

Security exists in several forms:

- PHYSICAL SECURITY: In typical AISs the equipment is located in a locked room with access granted only to technicians. Software access controls are set at several levels, depending on the size of AIS. The first level of security occurs at the network level, which protects the organization’s communication systems.

- OPERATING LEVEL SECURITY: The operating system level security protects the computing environment.

- DATABASE SECURITY: Database security is enabled to protect organizational data from theft, corruption, or other forms of damage.

- APPLICATION SECURITY: Application security is used to keep unauthorized persons from performing operations within the AIS.

Testing of AIS: Testing is performed at four levels

1. UNIT TESTING: Stub or unit testing is used to ensure the proper operation of individual modifications.

2. PROGRAM TESTING: Program testing involves the interaction between the individual modification and the program it enhances.

3. SYSTEM TESTING: System testing is used to determine that the program modifications work within the AIS as a whole.

4. ACCEPTANCE TESTING: Acceptance testing ensures that the modifications meet user expectations and that the entire AIS perform as designed.

Phase Out Old AIS and Put New AIS in Use

Conversion entails the method used to change from old AIS to new AIS. There are several methods for achieving this goal. One is to run the new and old systems in parallel for a specified period. A second method is to directly cut over to the new system at a specified point. A third is to phase in the system, either by location or system function. A fourth is to pilot the new system at a specific site before converting the rest of the organization.
Support in AIS
The support phase has two objectives
1. The first is to update and maintain the AIS. This includes fixing problems and updating the system for business and environmental changes. For example, changes in generally accepted accounting principles (GAAP) or tax laws might necessitate changes to conversion or reference tables used for financial reporting.
2. The second objective of support is to continue development by continuously improving the business through adjustments to the AIS caused by business and environmental changes. These changes might result in future problems, new opportunities, or management or governmental directives requiring additional system modifications.

Attestation
AISs change the way internal controls are implemented and the type of audit trails that exist within a modern organization. The lack of traditional forensic evidence, such as paper, necessitates the involvement of accounting professionals in the design of such systems. Periodic involvement of public auditing firms can be used to make sure the AIS is in compliance with current internal control and financial reporting standards.
After implementation, the focus of attestation is the review and verification of system operation. This requires adherence to standards such as ISO 9000-3 for software design and development as well as standards for control of information technology. Periodic functional business reviews should be conducted to be sure the AIS remains in compliance with the intended business functions. Quality standards dictate that this review should be done according to a periodic schedule.

M/s Ranbaxy Laboratories Ltd. A pharmaceutical company has its corporate office in Delhi and has chemical division at Mohali near Chandigarh. This company started its chemical plant at Mohali in 1974 and establish another plant at Tonsa (near Ropar in Punjab) in1986. A one more plant for manufacturing of bulk drugs and fine chemicals was set up at Mohali in 1991. The company has pharma manufacturing facilities at Devas (MP) and Poanta Sahib in (HP). This company is the second largest manufacturer in pharmaceuticals in India. There is continued thrust to expand international operations with greater emphasis on branded dosage forms. Company has joint ventures nearly 20 countries in the world. This company is continuously incorporating all new developments in the field of information technology.
Objectives of company’s MIS department
- Strong data base
- Minimization of manual work
- Better control and monitoring
- Timeliness and accuracy in overall functioning
- Integrity of data and quality check on inputs/outputs
Reduction in paperwork and cost thereof

Standardization of accounting procedures.

Various finance function performed at the manufacturing locations can be divided into routine accounting functions, costing, budgeting, statutory compliances, and other financial functions. In the routine accounting functions, the functions covered are cash operations, bank operations, payroll and disbursement, purchasing accounting, payment of suppliers and closing of account. In costing area various finance functions performed include collection and analysis of operations costs, analysis of product costs, variance, and analysis of profitability reports, capacity utilization analysis and cost audit requirements.

In budgeting section, thrust is laid on expense budgeting capital expenditure budgeting, fixation of standards for yields and usages and transfer price. The statutory compliance includes provident fund; ESI; contributions; bonus; Gratuity; Sales Tax; Purchase Tax; Excise Duty and income Tax. In other function included is adequate insurance coverage, declarations under various insurance policies, lodging of insurance claims.

There is complete Financial System operating in the company on On-Line basis. The system covers all financial accounting transactions relating to income, expenditure, assets and liabilities through coding system for Division, RCC codes, Account Codes, Sub-Codes, Mirror Codes.

System operates on various financial accounting input documents like: Cash Payment Vouchers, Bank Payment Voucher, Purchase Voucher, Payment Advice, Journal Voucher, Receipts Voucher, Travel Statements, and Provisional Journal Voucher.

The outputs generated from IFAS (Integrated Financial Accounting System) are:

1. PV Printing
2. CPV Printing
3. JV Printing
4. BPV Printing
5. Day Books (BPV,CPV, PAD,PV, JV)
6. Cash Book (Daily)
7. Cash Book (Monthly)
8. Bank Book
9. Sub-Ledger (For Employees Entitlement)
10. Employees Loan and Advances Ledger
11. Employees Trial Balance
12. Creditors Trial Balance
13. Statement for Payables (Employees)
14. Statement for Payables (Suppliers)
15. Cheques Printing
16. Payment Advice Printing
17. General Ledger
18. Schedule of Profit and Loss Account and Balance Sheets
19. Tax Audit Schedule
20. Fixed Assets Register
21. Trial Balance
22. Provisional Trial Balance
23. Profit and Loss Account
24. Payroll Output/ P F Returns/ ESI Returns
25. Bonus Register
26. Bank Reconciliation Register
27. Expense Variance Account Head-Wise/ RCC-Wise
28. Sales Tax Returns
29. TDS Related Outputs/ Returns
30. CEPs Status Reports
31. Rule D Printing
32. Missing Documents List

**Inter-linkage with other Systems**

**Payroll System:**
1. Statutory requirement relating toPF, ESI, TDS Deductions, Bonus Calculation.
2. Record of Employees Balances/ Loans/ Advances.
3. Monthly Summary of Payroll Transactions. It is merged with IFAS System through Auto JV
5. Expense Control Outputs in relation to Employees Costs
6. Information as required in Section 217 (2B) of the Company Act in relation to Employees Salary
7. Other Data related to Employees as required Statutorily by Govt. Bodies

**Material Management System**
1. Purchases and purchase Reconciliation
2. Stock Valuation
3. Consumption of Material and its Reconciliation
4. Inter plant Movement of stock
5. Material Consumption Data as per Schedule VI of Company Act
6. Tax Audit Schedule
7. Stock Insurance:-
   a) Policy
   b) Actual Declaration
   c) Actual Claim

**Cost Control Outputs**
1. GWC Report
2. Obsolete Stocks Report
3. FSN Moving Reports
4. Price Variance Report

Systems integrated with the finance accounting system are payroll system, material management system, and provident fund accounting system, engineering materials management system, lease rental system and finished goods system and there is online costing system, fixed assets system, excise duty System, Distribution Department Invoicing System, inter division ordering system, production planning and working capital management information system which helps in formation of command data base. The interfacing with the production planning helps in working capital requirements reporting from the system. The interfacing with utility Data Monitoring helps in monitoring and control of utility costs and interfacing with work order system helps in the projection of expenditure for provisions.

Financial system interfacing with personnel Management System helps in budgeting personnel costs and immediate settlement of accounts for transfer and resignation cases. Interfacing of financial system with Distribution System helps in reconciliation of inter-plant/inter-division transfers and auto-booking in the financial accounts. This helps in auto Journal Voucher for material transfers to other locations and help in
linkage with ‘Excise Paying Documents’ and reconciliation of excise accounts. Interfacing of Material Management System with other systems like Integrated Financial Accounting System; Production Monitoring and Compliance System; and On-line Costing System helps in Material Transfer Notes (MTN) reconciliation with Material Receipt Notes (MRN) and calculation of price variance. The On-line Costing System has interfacing with Material Management, Financial Accounting System, Production Monitoring and Compliance System. This system helps in monitoring of raw material consumption and auto material reconciliation, solvent recoveries/yields monitoring and computation of variance from standard usages both for months and year-to-date, inventories valuation and working capital blockage.

**Conclusion**

Accounting Information System deals with almost all types of business functions from accounting transaction processing systems to complicated financial management planning and processing systems. The Accounting Information System offers advanced analyses for better resource allocation and performance tracking. Management Accounting Information System helps in providing organizational planning, monitoring, and controlling every activity. Thereby the managerial level employees get benefited as they are enabled to have access to superior reporting and statistical analysis. They are also helpful in gathering data, to develop different scenarios, and to decide the best possible answer among alternative scenarios.

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