

Topic 8

Information Technology and Information Systems in Business

Session Objectives

- Discuss the types of information technology and information systems used by the business organisation
- List the attributes of good quality information



Session Objectives

- Explain how the type of information differs and the purposes for which it is applied at different levels of the organisation:
 - Strategic
 - Tactical
 - Operational



Session Objectives

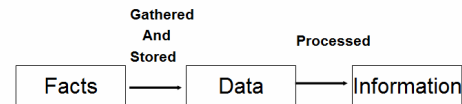
- Identify the different sources of internal and external information
- Describe the main features of information systems used within the organisation



Data and Information

- Data consists of numbers, letters, symbols etc.
- Data when processed becomes information.
- Data has no clear meaning until it is processed, analysed and organised into information.

Data and Information



Types of Data

- **Primary:** Collected for a specific purpose
- **Secondary:** Collected for another purpose, but may be reanalyzed in a subsequent study
- **Quantitative:** Can be measured numerically
- **Qualitative:** Cannot be measured numerically
- **Discrete:** Can take only distinct and separate values
- **Continuous:** When data can take any value

Why Does Management Require Information?

- Provide current and historical records
- Form a basis of decision making
- Analyse the business environment
- Monitor business performance

Users of Information

- Shareholders
- Customers
- Suppliers
- Employees
- Government agencies
- General Public

Qualities of Good Information

- Relevant and purposeful
- Timely
- Understandable
- Accurate
- Complete but not excessive

Qualities of Good Information

- Communicated to the right person
- Value of information should exceed the cost of producing it
- Communicated by appropriate channel

What is Data Processing

- Conversion of data into information by classifying, sorting and producing total figures
- Conversion process may be manual or automated

Transforming or Processing Data

- Bringing related pieces together
- Summarising data
- Basic processing of data
- Tabulation and diagrammatic techniques
- Statistical analysis
- Financial analysis

Information Technology (IT) and Information Systems

- **Information Technology**
 - Describes any equipment concerned with the capture, storage, transmission or presentation of information
 - Provides the infrastructure to run the information systems

Information Technology (IT) and Information Systems

- **Information Systems**
 - Combination of planned procedures, suitably designed forms, an appropriate organisation structure and capable managers who can use the output effectively

Output of Information Systems

- Routine Report or transaction documents
- Management information

Sources of Information

- Internal Sources
- External Sources

Internal Sources

- Customer records
- Employee records
- Product or service specifications
- Inventory details
- Production information
- Sales information
- Purchase information
- General information

External Sources

- Invoices
- Quotations
- Letters
- Advertisements
- Catalogues

Structured Internal Information System

- Gathers data within the organisation and then processes the data to provide reports to management
- All businesses have a structured system for financial accounting and financial reporting
- Many businesses also have cost accounting system or management accounting system

Role of IT in MIS

- Transformed MIS
- Businesses can develop information systems with enormous processing and storage capacity, providing access to vast stores of external and internal data.

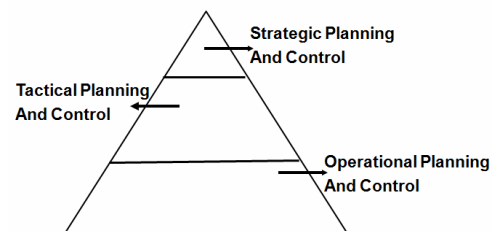
Developments in IT

- Internet
- Access to corporate databases
- Mobile computing
- Improved telecommunication structure

Advantages / Disadvantages of Computers

- **Advantages**
 - Speed of processing and communication
 - Accuracy
 - Volume
 - Cost-efficient
 - User friendly presentation
 - Accessibility via internet / intranet from any location
 - Flexibility of working
- **Disadvantages**
 - Cannot exercise judgement

Planning Hierarchy in an Organisation



What is Strategic Planning

- It is a process of deciding on objectives of the organization, on changes in these objectives, on resources used to attain these objectives, policies that govern the acquisition, use and disposition of these resources.
- Examples of strategic planning include:
 - Selection of products
 - Markets to sell the product in
 - Required level of company profitability

Why Do Strategic Planning

- Provide a framework for management
- Concentrate resources on key areas
- Deal with and manage change
- Improve decision-making and management effectiveness
- Serve as a monitor

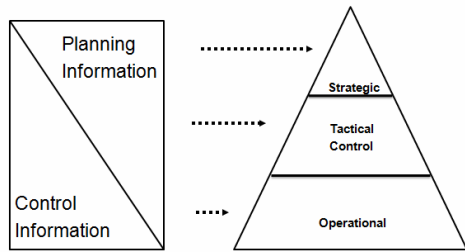
What is Management Control

- Management control is a process by which the managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's objectives.
- It is also called Tactical planning
- **Examples:**
 - Setting budgets for sales, production etc.

What is Operational Control

- This is also called operational planning. It is a process of assuring that specific tasks are carried out effectively and efficiently
- **Example:**
 - Allocation of particular staff to particular tasks
 - Handling customer complaints etc.

Information Requirements at various Hierarchy Levels



Information Processing Systems in an Organisation

- Transaction processing system (TPS)
- Management Information System (MIS)
- Decision Support System (DSS)
- Executive Information System (EIS)
- Expert system (ES)

Transaction Processing System (TPS)

- Collects, organizes, stores and retrieves an organizations daily activities.
- Used mainly by operational level managers
- Supplies summary data to DSS and similar packages
- Example:
 - Sales marketing systems, Finance or accounting systems

Management Information System (MIS)

- Uses internal and external sources to provide information to managers for facilitating decision making
- Used at all levels but extensively by operational managers
- Examples:
 - Supplier information
 - Product information

Types within MIS

- Database systems
- Direct control systems
- Enquiry systems
- Support systems

Decision Support System (DSS)

- A system that provides data, structured models and ad-hoc query tools to enable business decision development and analysis.
- It combines data with models and graphics to make decisions based on the data.
- Assists tactical or management level decision makers

Executive Information System (EIS)

- Provides high-level information to decision makers, usually to support resource allocation, strategy or priority decisions.
- This could include a balanced scorecard system, Enterprise Resource Planning (ERP) system, Decision Support System (DSS)

Expert Systems (ES)

- A form of DSS with specialized problem-solving expertise.
- The "expertise" consists of knowledge about a particular domain, understanding of problems within that domain, and "skill" at solving some of these problems.
 - Example: Legal advice, process loan application

Databases

- An organized body of related information
- Stores large amounts of raw data
- Advantages
 - Facilitates reporting and sharing data
 - Does not require duplication
 - Can be modified without impacting programming
 - Provides security to access privileged information

Sample Exam Question

What information processing system does a company use to record daily sales and purchases?

- A. A transaction processing system.
- B. A management information system
- C. An office automation system
- D. A decision support system

Answer

A.

A transaction processing system records all daily routine transactions in an organisation. It facilitates recording all sales and purchase transactions by volume and category.

Sample Exam Question

Which of the following is the most important attribute of good quality information?

- A. Accurate
- B. Complete
- C. Relevant
- D. Understandable

Answer

Answer: C

The most important attribute of good quality information is that it should be understandable. Accurate, complete and relevant information which is not understandable may not be of any use to the decision-maker.

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