Business Information System
05301201

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CHAPTER-1

Business and Management Information

Business organization

- The word business enterprise illustrates how firms are formed and how their structure helps them to accomplish their objectives.
- In general, corporations are designed to concentrate either on profit production or on improving society.
- It is defined for a profit organization when a company focuses on raising income.
- It is recognized as a non-profit (or non-profit) organization and it is not usually referred to as an organization when an organization focuses on building community goods through the arts, education, health care, or any other area.
- There are various types of corporate organizations related to how the corporation is set up, owned, and run. Single proprietorship, association, and company are the basic classes of business firm.

Business organization

- There are advantages as well as disadvantages to and development of a business organization.
- It takes on such risks while it runs, no matter how a company is structured. For a organization to use its assets and investments wisely, whether they are machinery, information, property, or relationships, one way to mitigate risk is.
- The more effectively a corporation uses its money, the greater the likelihood that a financial revenue will also be made.
- Business organization influences how the law treats a corporation.
- For any kind of business organization, state and federal governments have incentives and laws. Industry profitability helps the economy of a country expand, so governments typically support companies by passing legislation shielding investors from responsibility for the company's creditors.

Business work area

- A work area or work area may, in general, define a location where one or more individuals work.
- "Workplace" and "workspace" are frequently used interchangeably, but as technology has created new possibilities for where and how work occurs, they have come to define distinct terms.
- Beyond semantics, it is helpful to consider the distinctions between the two words for visualizing the several layers of interactions between workers with technology and seeing how they communicate.
- This information can be used by IT leaders to find ways to match IT bandwidth with wider business objectives.
- Unsure on what is perceived to be an office or a workspace? To help you spot the difference, here are five main distinctions:

Business work area

1. Workplaces are fixed; workspaces are fluid:

- The workplace is where you go to work; the workspace is where you do your work—place vs. space.
- For the most part, workplaces are fixed physical locations like office buildings, schools, and hospitals where employees gather to work under the same roof.
- In addition to desks and boardrooms, workplaces contain lobbies, communal dining areas, and amenities like gyms or game rooms.
- Workplaces focus on the total employee experience and shape corporate culture.
- In contrast, the workspace is the modern equivalent of the workstation. The era of the deskbound 9-5, one-size-fits all workstyle is ending as employees seek to improve work-life balance and to uncover new ways of working more efficiently.

Business work area

- This shift has been fueled by the widespread adoption of consumer technologies that have enabled greater mobility and the potential to work anytime from anywhere.
- An enabled user can enter the workspace while traveling, working from home, or in a flexible workplace without permanent desk assignments. By augmenting and improving the workspace, organizations can effect change at the core of where work happens.
- When inhabiting the workspace, it is helpful to think of employees as users (or end users from the POV of IT) whose series of digital interactions represent the essential work that powers an organization.

Business work area

2. Workspaces can include non-human digital agents:

- By nature, non-human agents do not currently exist in the vast majority of workplaces.
- Thus, any work done by digital agents is performed in the workspace (the results of such work may or may not be visible in the workplace).
- Examples include digital assistants, bots, AI, software used in self-driving vehicles, and synthetic users that help test environmental thresholds.
- Most of these technologies are too new or underdeveloped to be deeply integrated into the workflow (with the exception of synthetic users), but when they are, they'll function in the workspace.

Business work area

3. The workspace is a component of the digital workplace:

- On the surface, the workspace and the digital workplace seem synonymous.
- The digital workplace is the digital equivalent of the physical workplace; in other words, the environment that supports employees and their working needs, including technology.
- According to Gartner's definition, "The Digital Workplace enables new, more effective ways of working, raises employee engagement and agility, and exploits consumer-oriented styles and technologies."
- So, if the workspace and the digital workplace both concern the intersection between people and technology, where does that leave the concept of the workspace?

Business work area

- If we consider our earlier distinctions between the workplace and the workspace, the difference becomes clear. Fundamentally, workplaces are the supporting infrastructure that nurtures work, whereas workspaces are where work occurs.

An important component of work is:

- People: The people who carry out jobs. Based on responsibilities and workstyles, each employee has specific interests and needs.
- Process: The activities that make up work and differ depending on the needs of the employee and the technology available. One example of a method is reacting to an email.
- Technology: The technologies and software used for process efficiency by individuals.

Business work area

4. The workspace is the home of IT:

- IT employees should have the easiest time grasping the difference between the workplace and the workspace.
- An easy check is to ask whether something is under the purview of IT. If it is, that thing is part of the workspace.
- The main function of IT is to manage and monitor people's interactions with technology.
- The workspace therefore represents the best point of view for IT, and the greater the overlap between people, process, and technology, the greater the visibility for IT.
- Endpoint monitoring tools are particularly powerful for exactly this reason.

Business work area

- By gathering usage and performance data directly from an end user's machine, IT can view the end user, his or her actions, and the behavior of technology simultaneously.
- Non-endpoint solutions can provide pieces of the narrative, but never offer the full story.
- Workspace analytics solutions are designed to increase IT visibility of the workspace by providing meaningful insights into productivity by analyzing end users, the business processes that encompass their jobs, and the technologies they use to get work done.
- These solutions work by monitoring the end-user experience in order to optimize endpoint performance and improve end users' ability to be productive.

Difference between data & information

Data	Information
Raw facts	Processed facts
Dead stored facts	Live presented facts
Inactive (only exists in the backend)	Active (being processed data for knowledge base)
Technology oriented	Business oriented
Example: 10	Example: Roll No: 10

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Business Information

What does business mean?

- A corporation is an organizational body engaged in the distribution of services and products. It is a corporate practice that may be profit-oriented or not profit-based (NGO) or owned by the government. A corporation refers to coordinated economic activity conducted to fulfil the desires and desires of individuals in society and earn subsistence income.

What is knowledge?

- Information is the type of data processed in order to minimize confusion; information is the awareness that one receives from evidence put in the correct context.

What is information?

- Data are facts, events, and transactions which have been recorded.
- They are basically the raw inputs which further get processed to become information.
- When facts are filtered through one or more processes (human or system), and are ready to give certain kind of details… they are the **information**.
- Processed data when presented in some useful and meaningful form, it is actually the information we are looking at.

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Characteristics of Perfect Information

- Relevant
- Accurate
- Complete
- Understandable

What is System?

- System is a functional unit, which involves set of procedures/functions to produce certain outputs by processing data/information given as input.

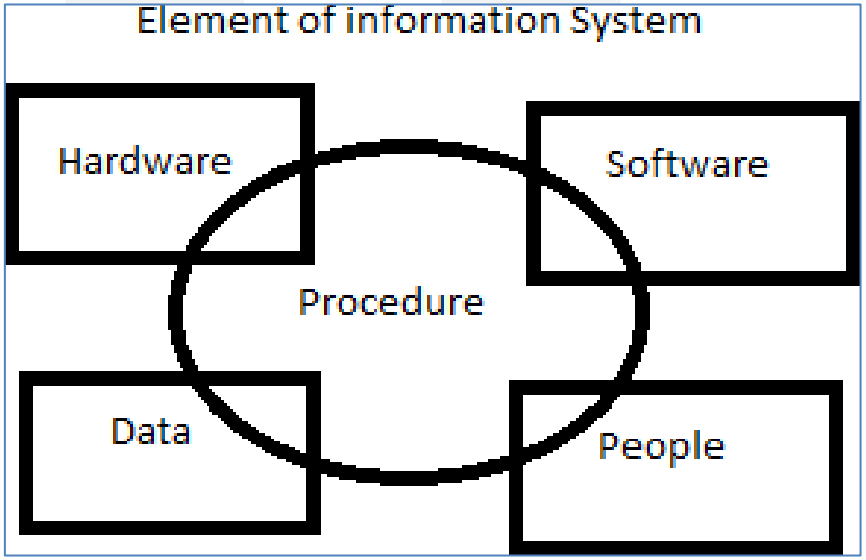
Components of System

- Input
- Process
- Output
- Feedback
- Control

Information System

- An information system is an organized system for the collection, organization, storage & communication of information.
- It take inputs & transform it to output

- **Elements of Information System**



Information System

Elements of Information System

- **Hardware**: Hardware refers to computer system and other associated equipment including the communication links that a modern IT installation may need.

- **Software**: Software is a set of inter-related computer program are collectively called computer software. It is the life-line of the IT Infrastructure and it makes the computer hardware function.

Information System

Elements of Information System

- **Data:** Data are collections of facts or events represented in the form of symbol, such as digits, pictures, graphs etc. Data are the basic raw material in the process of generation of information. Data may be collected form internal sources or external sources.

- **Human Resources (People):** Every system needs people if it is to be useful. Often the most overlooked element of the system are the people, probably the component that most influence the success or failure of information systems.

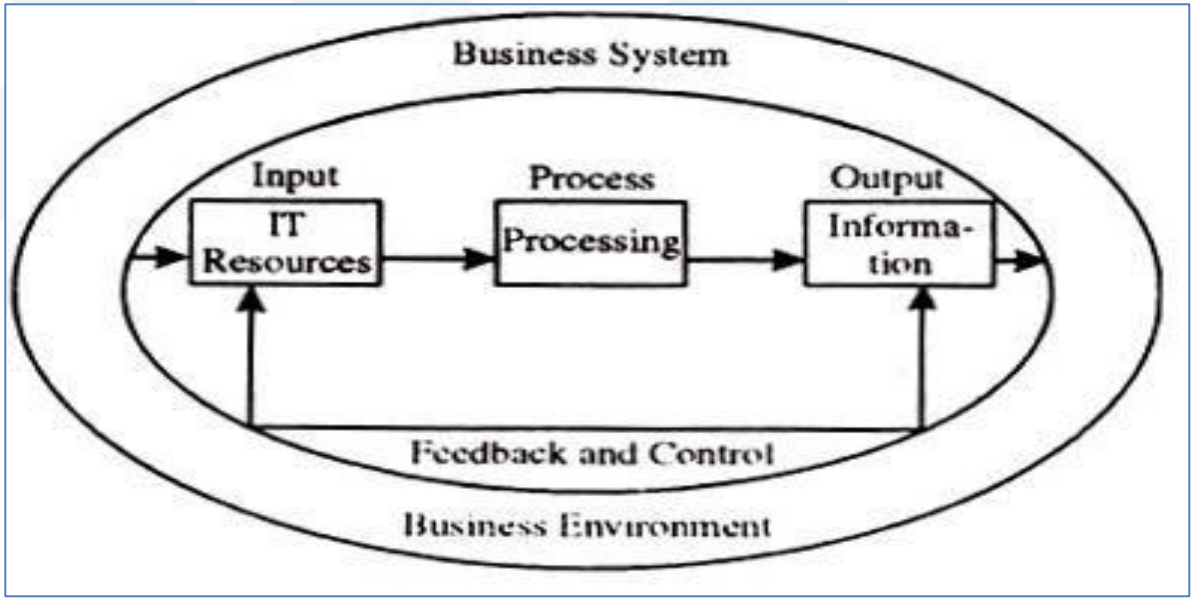
Information System

Elements of Information System

- **Procedure:** Procedures are the policies that govern the operation of a computer system. Procedure provides operation and control mechanisms that in turn help in effective utilization of the system, provide instruction of usage and crash recovery.

What is BIS?

- BIS is basically a software tool which gives a holistic report of processed information based on which management can take certain crucial decision on which strategy and operations could be figured out.



What is BIS?

- An Innovative field of study relating to how ICT (Information & Communication Technology) can be deployed to improve business process to enhance the organization's value chain networks, which can be used to acquire, produce and deliver goods and services all over world in an efficient, effective and competitive use of ICT.
- Example: PUMIS

What is BIS?

Outcomes of BIS :

- global information-based
- technology-driven business environments
- take advantage of computer-based information systems

It improves

- Business efficiency
- Develop effective decision making &
- Maintain competitiveness in their industries

BIS & Users

- Every person in the organization is the user of BIS.
- The people in the organization operate at all levels in the hierarchy.
- BIS caters to the needs of all.

Clerk :

- The main task of a clerk is to search the data, make a statement and submit it to the higher level.
- A clerk can use the BIS for quick search and reporting the same to the higher level.

BIS & Users

Assistant :

- Assistant has the task of collecting and organizing data, and conducting a rudimentary(basic) analysis of it.
- BIS offers user tools to perform such tasks.

Officer :

- Officer has a role of integrating the data in different systems and disciplines to analyze it and make a critical comment if necessary.

BIS & Users

Executive

- Executive plays the role of decision-maker and a planner.
- He is responsible for achievement of targets and goals of an organization.
- BIS provides facility to analyze the data and offers the decision support system to perform the task of execution.
- BIS provides an action-oriented information.

Manager

- Manager has the responsibility and accountability for business results.
- He/She is a strategist and a long-term planner, a person of foresight and analytical.

IT Infrastructure & Business Information System

- A Business Information System cannot exist without adequate IT (Information Technology) Infrastructure.

IT Infrastructure:
It is collection of hardware , software , networks, data centers and facilities related equipment's.

It is used to develop, test, operate, monitor, manage and/or support information technology services.

IT Infrastructure & Business Information System

Three main elements of IT Infrastructure

Information:

- It is in the core of IT Infrastructure
- Common resource needs to be developed and shared
- Its procurement is evolutionary

Service:

- Facilities for generation of information
- Data processing resources used for providing & maintaining services

Network:

- Link users to various services and stock of Information

Features of BIS

Carter information needs for decision making.
Must be cost effective.
Flexible to adopt changes
Designed based on availability of financial & human resources.
Needs to be proactive, expect & adapt changes in need of users.

Business Organization

- It is an entity aimed at carrying on commercial enterprise by providing goods or services, to meet needs of the customers.
- A business organization is an individual or group of people that collaborate to achieve certain commercial goals.

Seven Types/Forms of Business Organization

- One of the first challenges new entrepreneurs face is deciding what type of business they should register.
- Although there are several different types of businesses, choosing one doesn't need to be difficult.
- Here are the seven most commonly-used business types and some questions to help you pick which business type is right for your startup:

Seven Types/Forms of Business Organization

1. Sole Proprietorship:
- The simplest type of business. Sole proprietorships are owned and operated by a single person and are very easy to set up.

2. Partnership:
- A business owned by two or more people who share responsibilities and profits.

3. Limited Partnership:
- A business partnership, often between business operators and investors.

4. Corporation:
- A type of fully-independent business with shareholders. One of the most complex business types.

Seven Types/Forms of Business Organization

5. Limited Liability Company (LLC):

- A mixture of a partnership and a corporation, designed to make it easier to start small businesses.
- One of the most popular business types for startups.

6. Nonprofit Organization:

- A type of business that uses its profits for charitable purposes. Tax-exempt, but must follow special rules.

7. Cooperative (Co-op):

- A business owned and operated for the benefit of the members of the organization that use its services.

Information Industry

- Industries that are information intensive Produce and sell information

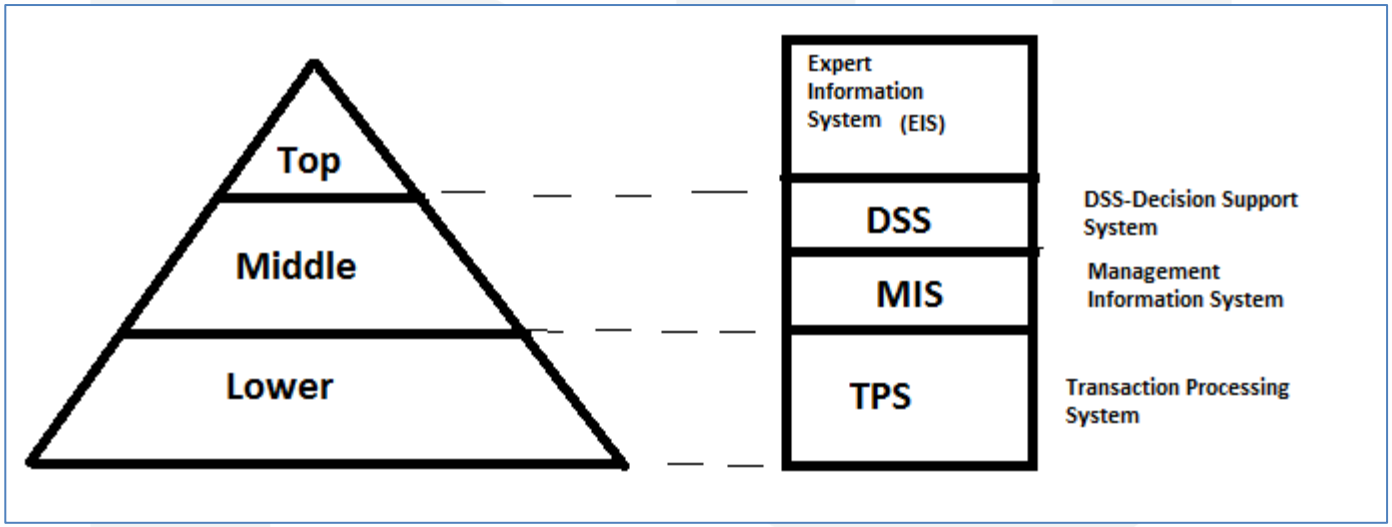
Example:

- ✓ television programs,
- ✓ banking,
- ✓ insurance,
- ✓ market research,
- ✓ tele-communications systems,
- ✓ marketing channels,
- ✓ and other technological and social structures.

Level of information

- Planning, control and decision-making within an organization is carried out at multiple stages within the organization's structure.
- Information systems as utilized by different levels of management.
- The three levels at which information can be used are strategic, tactical and operational and there is a direct correlation between the levels of importance of individuals or groups within an organization and the level of information that is being communicated.

Level of information



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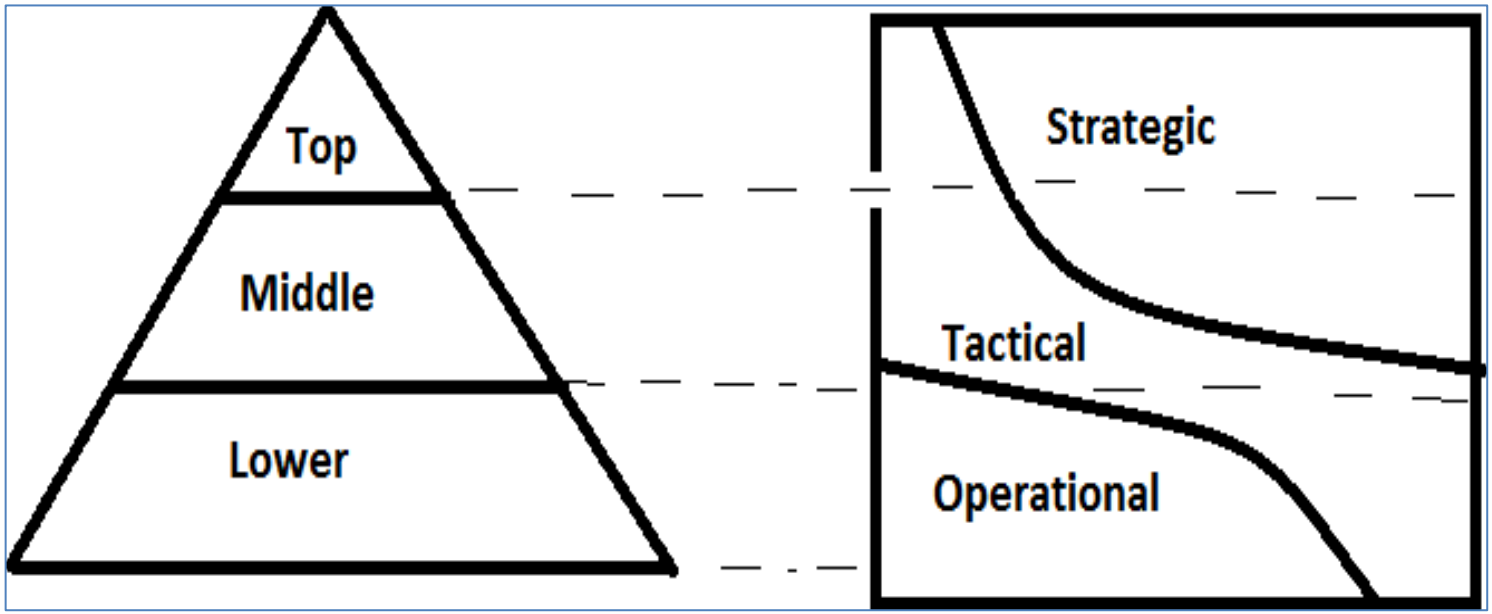

Level of information

Strategic information:

- Strategic information is used at the very top level of management within an organization.
- These are chief executives or directors who have to make decisions for the long term.
- Strategic information is broad based and will use a mixture of information gathered from both internal and external sources.
- In general a timescale may be from one to five years or even longer depending on the project.
- A good strategic plan will be easier to flesh out lower down than a poor or vague strategic plan.
- Similarly, well constructed and more detailed plans will be easier to implement than poorly constructed plans.

Level of information

Tactical information:

- The next level down is the tactical level, and tactical planning and decision-making takes place within the guidelines set by the strategic plan.
- Tactical information will be mostly internal with a few external sources being used.
- Internal information is likely to be function related: for example, how much ‘down time’ a production line must allocate for planned maintenance.
- Tactical information is used by middle management (employees) when managing or planning projects.
- Tactical plans have a medium level of detail and will be very specific; they deal with such matters as who is doing what and within what specific budgets and timescales.

Level of information

Operational information:

- The lowest level is operational and operational planning takes place based on the tactical plans.
- The lowest level of management or workers in an organization implements operational plans.
- These may be section leaders or foremen in a large organization or workers such as shop assistants, waiting staff, and kitchen staff, etc., in smaller businesses where there is no supervisory layer.
- The timescale is usually very short, anything from immediately, daily or at most a week or month.
- Results of operational work will usually be passed upwards to let the tactical planners evaluate their plans.

Categories/Types of information system

- An information system is a group of interrelated components that work to carry out input, processing, storage, output and control actions in order to convert data into information that can be used to support forecasting, planning, control, coordination, decision making and operational activities in an organization.
- There are several categories of information system:

✓ Data Processing Systems (DPS)
✓ Management Information Systems (MIS)
✓ Decision Support Systems (DSS)
✓ Executive Information System (EIS).

Categories/Types of information system

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Organisation Level	Types of Information System
Strategic	Executive information system
Tactical	Decision support system
	Management information system
Operational	Data processing system

Categories/Types of information system

DPS (Data processing system)/TPS (Transaction Processing System):

- A Data Processing System is sometimes referred to as a Transaction Processing System (TPS), because it deals with the day-to-day transactions of an organization.
- Examples include systems for accountancy, invoicing, stock control and data entry.
- For example, a clerk processing a customer order needs to know whether the item is in stock, what the price of the item is, as well as customer details including name and address.

Categories/Types of information system

Management information systems:

- An MIS is a system that converts data from internal and external sources into information, communicated in an appropriate form to managers at different levels of an organization.
- The information can contribute to effective decision making or planning to be carried out.
- The source of data for an MIS usually comes from numerous databases.
- These databases are usually the data storage for Data Processing Systems.
- MIS summaries and report on the organization's basic operations. The basic data from the DPS is condensed and is usually presented in long reports that are produced on a regular basis.

Categories/Types of information system

Management information systems:

- MIS produce reports for managers interested in historic trends on a weekly, monthly and yearly basis (not on the day-to-day activities of the DPS).

Categories/Types of information system

Decision support systems:

- A DSS provides information and models in a form to help tactical and strategic decision-making. DSS support management decision making by integrating:

✓ company performance data
✓ business rules in a decision table
✓ analytical tools and models for forecasting and planning
✓ a simple user interface to query the system.

- The source of data for a DSS tends to be a combination of summary information gathered from lower level DPS and MIS; it also includes significant information from external data sources.

Categories/Types of information system

Executive information system:

- An EIS provides senior managers with a system to assist in taking strategic and tactical decisions.
- Its purpose is to analyze, compare and identify trends to help the strategic direction of the organization.
- EIS address unstructured decisions and create a generalized computing and communications environment, rather than providing any fixed application or specific capability.
- Such systems are not designed to solve specific problems, but to tackle a changing array of problems.

Categories/Types of information system

Expert systems:

- An expert system is a computer program that tries to emulate human reasoning. It does this by combining the knowledge of human experts and then, following a set of rules, it draws inferences.
- An expert system is made up of three parts: a knowledge base; an inference engine; a user interface.
- The knowledge base stores all of the facts, rules and information needed to represent the knowledge of the expert.
- The inference engine is the part of the expert system that interprets the rules and facts using backward and forward chaining to find solutions to user queries.
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Generation of Information

Data Capture:

- The action or process of gathering data, especially from an automatic device, control system, or sensor. Data Capture & storage have a cost.

Data Transformation:

- Data transformation is the process of converting data from one format or structure into another format or structure.

✓ Rearranging
✓ Classifying
✓ Calculating
✓ Summarizing

Quality of Information

Attributes that add value to the quality of information

Promptness in availability:

- Sudden information needs arise when business threat is perceived

Updating information regular activity (automatic update- real time system)

Accuracy:

- Degree of absence of error in process of generation of information

Precision:

- Too much information leads to dump of important information

Excessive details of information result in Information fatigue syndrome

Quality of Information

Completeness:

- Incomplete information is misleading
- User of information must be involved in defining information available to him/her

Unambiguity:

- Communication of information so that it conveys same meaning to different users
- Use of standardized terminology in generating reports

Management Information

Management of Information can be done by

- ✓ Storage of data securely at some mass storage medium
- ✓ Updated and Consistent data
- ✓ Communication of valid and necessary data to customers

Management Reports

Management reports enable identification of areas of improvement in any business

- ✓ For internal use only
- ✓ Focus on segments of business to provide insight on specific areas
- ✓ Provide detailed analysis for identification drivers of information

System Theory

- It is a detailed study of abstract organization phenomenon.

- System Development must answer:

✓ What is the system process?
✓ How does it process?
✓ Why develop application software?
✓ Where will data be processed?
✓ When must given data processing function to be performed?

Deterministic System

- A deterministic system is one in which the occurrence of all events is known with certainty.
- If the description of the system state at a particular point of time of its operation is given, the next state can be perfectly predicted.
- A system is deterministic if its outputs are certain. This means that the relationships between its components are fully known and certain. Hence, when an input is given the output is fully predictable.
- An example of a deterministic system is the common entrance examination for entry into IIM. All the entities in the system and their interrelationships are well known and given an input the output can be determined with certainty.

Probabilistic System

- A probabilistic system is one in which the occurrence of events cannot be perfectly predicted.
- Though the behavior of such a system can be described in terms of probability, a certain degree of error is always attached to the prediction of the behavior of the system.
- A probabilistic system is one where the output from the system behaves probabilistically, i.e., the output is predictable according to probability values. The portfolio investment systems of an asset management company that invests in the stock market will have a probabilistic output for a given input as the system and its entities behave probabilistically.

Deterministic System Vs. Probabilistic System

DETERMINISTIC SYSTEM	PROBABILISTIC SYSTEM
Predictable operations	Probable behavior
Certainty in interaction	No certainty in interaction
No error in determining activity	Certain degree of error possible
E.g computer programs, clocks	E.g human beings, inventory systems

Open & Closed System

There are two types of system:

1. Open
2. Closed

Open System: A system is said to be open when it interacts with the environment in which it exists. It exchanges inputs and outputs with the environment.

- The design should be flexible to cope up to the changes required from time to time.
- methods of decision making can be used directly in the MIS provided the method to be applied has been decided.

Open & Closed System

Closed System: A system is said to be closed if it does not interact with the environment in which it exists.

- Deterministic and rule based
- Design needs to have limited flexibility

Difference between Open & Closed System

OPEN SYSTEM	CLOSED SYSTEM
Able to sustain themselves	Self contained & isolated
Exchange resources & get feedback	No feedback or resources exchange
Actively interact with other systems	Deteriorate (decline) communication over time.
Get response from environment & is alive	

Closed & Open Loop System

Closed Loop System: It is a system where part of the output is feed back to the system to initiate control to change either the activities of the system or input of the system.

•It has the ability to control the output due to existence of Control Mechanism an Feedback System.

Example : Budgetary control system in a company by which

•The results are communicated through feedback system

•Results are compared with the objectives/budget through controls mechanism

Closed & Open Loop System

Open Loop System: The determinant factor is in an open loop system is that the information from the system not used for control purpose.

•The output is not coupled to the input for measurement. Hence the components of open loop system do not include control and feedback mechanism due to non-existence of internally defined objectives. That is, Input, Process and Output

Example:

An information system that automatically generates report on regular basis and are not used to monitor input or activities

Data systems and users

- Data system is a term used to refer to an ordered set of symbols and processes that can be used on those symbols to function.
- A data structure may be assumed to be any ordered set of symbols and symbol-manipulating operations.

- **Users**: A user of a system is a person who communicates with a system to extract any practical gain, usually through an interface.
- **Information User**: A person who makes educated decisions about policies, services and/or best practices using information generated by research.
- **User Requirement**: A manual commonly used in software engineering that defines what the user wants the software to be able to do is the user requirement(s) document (URD) or user requirement(s) specification.

User Requirements

A typical system might be as follows:

Mandatory requirement: This feature must be built into the final system.

Desirable requirement: This feature should be built into the final system unless the cost is too high.

Optional requirement: This feature can be built into any system we have.

Possible future enhancement: This feature may be used in the final system, however we just want the feature in and of itself. We can modify functions of the system

Steering committees

- A steering committee is an advisory body that is part of the administration of IT and others.
- It is consider as a group of people/ department head or such trustworthy person who will lead decision making process in organization.
- As per the different company organization & decision making infrastructure it may differ
- It can be considered as a part of Group decision making system
- as more no of brains are involved in this so it provide better result & less risk allowed

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