

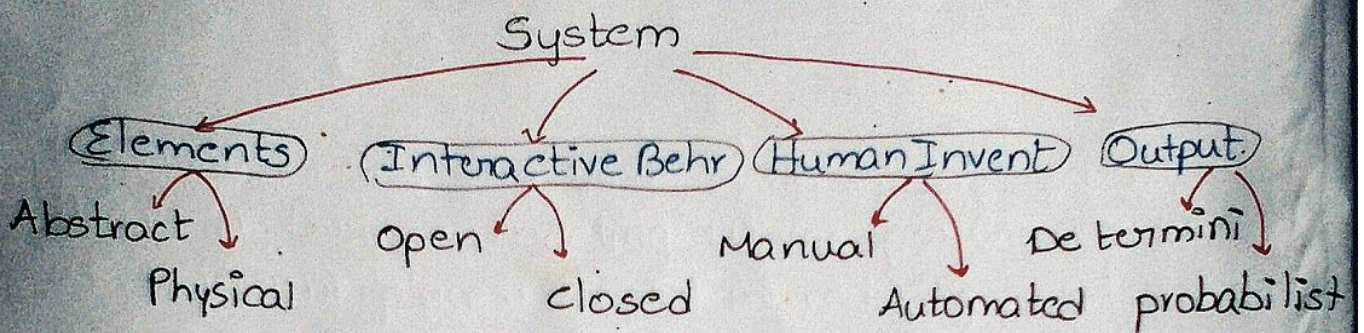
Chapter-2

Information systems

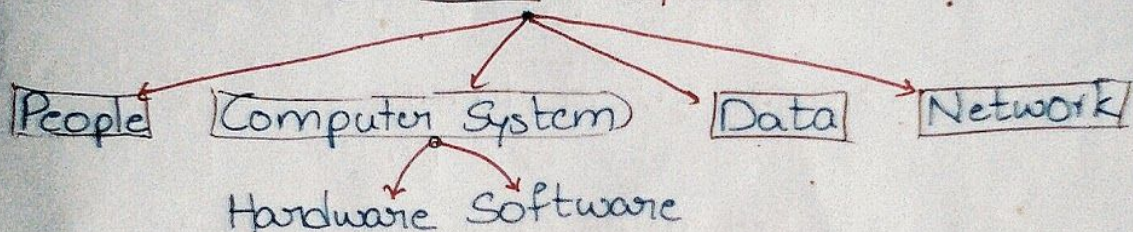
by Hari Krishna Gatti

INFORMATION SYSTEMS

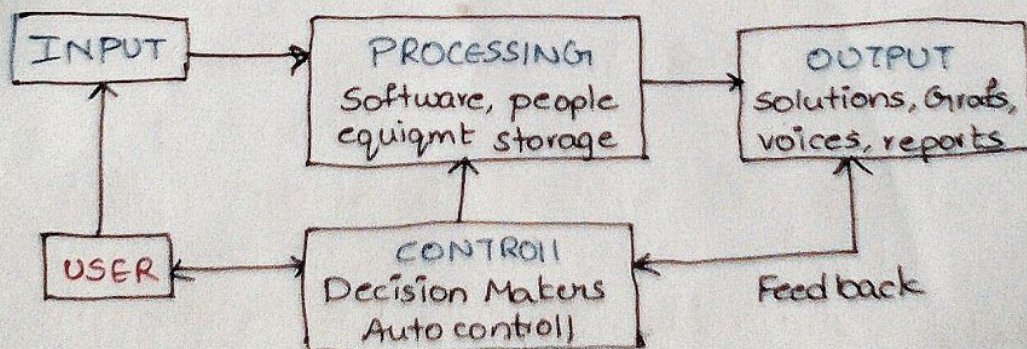
Classification of System



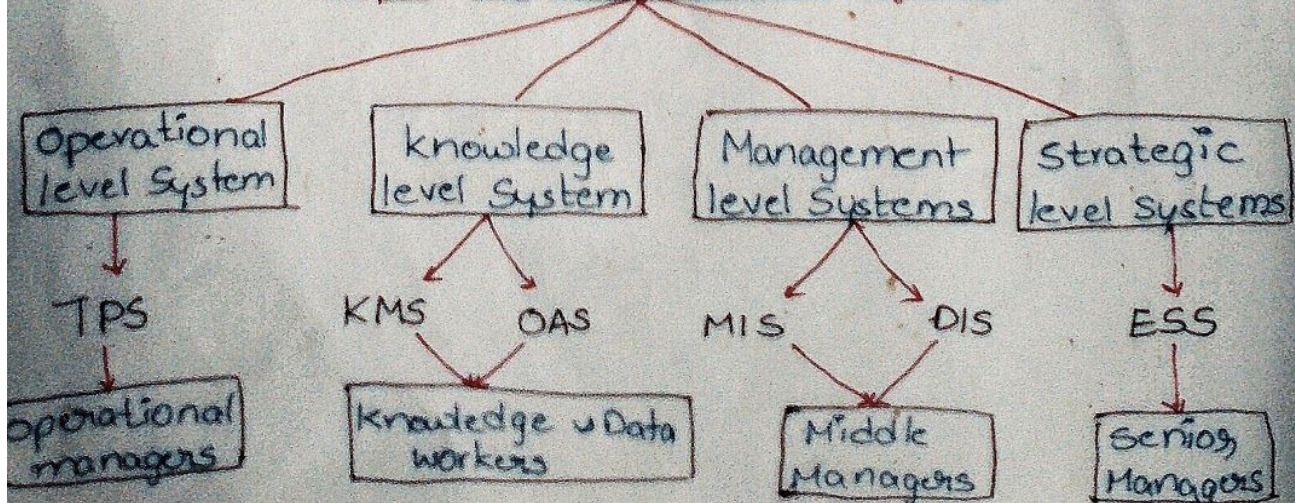
Components of Information System



Functions of Information System



Types of Information System



Operational level System:- These Support managers at operational level in Tracking elementary activities.

A Transaction processing System:-

TPS involves following Activities.

1. Capturing Data to organize into files
2. Processing of files
3. Generating information
4. Processing queries.

Components of TPS

1. Input
2. Processing
3. Storage
4. Output

Features of TPS - "LABS"

1. Large volume of Data
2. Automation of Basic operations
3. Benefits are easily measurable
4. Source of Input for other systems

Knowledge level System:- This supports Discovery Storage, processing of knowledge and Data workers.

→ The application of Computers to handle office activities is termed as Office Automation.

A Benefits of Office Automation System (OAS).

1. Improve Communication (google talk, hangouts)
2. Reduce Cycle time (emails instead of letters)
3. Reduce Cost (PDFs instead of Hard Copies)
4. Ensure accuracy of Info and smooth flow of comm.

Computer based Office Automation Systems

a. Text processing System.

- Commonly used Component of OAS
- Automate the process of Development of Docs such as memos, letters, reports etc. - Desktop publishing system
- Using of Text processor supported by printers etc.

b. Electronic Document Management System

- Involves capturing Data from a Document & stored for future reference. Ex. Scanning
- Useful in remote Access of Documents
- Very useful in Internal Communication - loan scrutiny by H.O. Manager
- Location of Executive is irrelevant for access

Electronic Message Communication Systems

It helps a lot in reducing time and increased reliability and less cost of Communication.

Components of Message Communication System.

- (a) E-mail.
- (b) Fax
- (c) Voice mail.

Teleconferencing and Videoconferencing Systems

Used in Business meeting where persons are located at Different places. Helpful in reducing travel cost and used for pre-recorded presentations.

Knowledge Management System:-

- Knowledge Management is the process of Capturing, Developing, sharing and efficiently using organisational knowledge. KMS refers to IT system that stores, retrieves Knowledge.
 - It is a multi-disciplined approach to achieve organisational objective with best use of knowledge.
- There are two types of knowledge.

1. Explicit knowledge

- Easily available across the Organisation.
- This knowledge is codified, easy to Transfer, reproduce. Ex. Tutorials, Manuals, SOPs etc.

2. Tacit knowledge:-

- Resides only in few hands
- Cannot be articulated, reproduced, communicate etc.
- Acquired by personal skills, experience.
- Example:- knowhow, employee Experience etc.

3. Management level System:-

- Supports middle Managers in monitoring, Decision making and Administrative Activities.
 - Provides periodic returns instead of instant.
- MIS and DSS are two Management level

Management Information System (MIS)

It is an integrated user-machine system designed for providing information to support operational control, Management control, Decision control, in an organisation. MIS supports managers at different levels to take strategic Tactical management Decisions to fulfil organisation goals.

Characteristics of MIS

1. Management oriented - both top & middle level managers
2. Management Directed → Manager involvement is needed
3. Integrated → Integration of various subsystems
4. Common Database → to reduce duplicacy of data collection
5. Heavy planning → Generally takes long time
6. Computerised → It improves speed & Accuracy.
7. Subsystem Concept → It ~~was~~ can be broken into small S.S.

Pre-Requisites of Effective MIS

- * Database :- Collection of files, User Oriented. available for Authorised persons, Common Data Source.
- * Qualified System & Mgmt Staff :- Needs both System Experts and Mgmt Experts for effective implemt.
- * Support from Top Management :- is required due to high investment and supervision is need.
- * Control & Maintainance of MIS :- Maintain standardised procedures by users.

Constraints in operating MIS

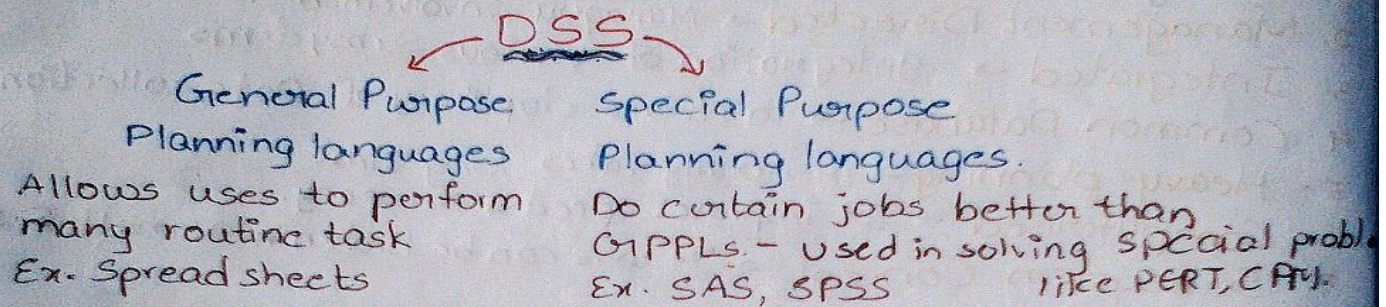
1. Non Availability of Experts who diagnosis the needs & provide direction.
2. Expert's problem in selection of Subsystems
3. Non-Standardise design and implementation
4. Non-Availability of Staff Cooperation.

Limitation of MIS

1. quality of Output depends on qty of input
2. MIS is not substitute for effective management
3. Not flexible to change with change in needs
4. Quatitative factors are only considered.
5. less useful for Non-programmed decisions
6. Effectiveness decrease with change in top Mgmt & organisation structure.

Decision Support System (DSS)

- It is a Computerised environmental system that supports business decision making activities
- It is a system that provides tools to managers to assist them in solving semi-structured and unstructured problems.
- It is not a replacement for managers decision but only a supporting tool to human decision making process



Characteristics of DSS

1. Support Decision Making
2. Helps for Groups, making Decision.
3. Flexible & Adaptable
4. Focus on Decision, rather than Data
5. Used for Structured Data
6. Easy to Use, User friendly, extensible.

Components of DSS

The USER

Manager:- who has basic knowledge of computer, with a unstructured or Semi-Structured problem to solve

Staff Specialist (Analyst):- who is more details oriented

DataBase:- Includes one or more Databases, contains Both routine and Nonroutine Data from Both External and Internal Sources.

Implementation of Data Base:-

- Physical level: Implementing on Hard disk
- Logical level: Designed by professional program
- External level: logical level divides into Subschema

Model Base:- Planning language allows the user to maintain a dialogue box with the model Base, which is the brain of the DSS. because it performs data manipulations and computations.

Examples of DSS: Many of the DSS are in house Developed

1. Cost Accounting System
2. Capital budgeting System
3. Budget Variance Analysis System.
4. General Decision Support System.

Differences Between DSS and MIS.

Dimension

DSS

MIS.

Philosophy	Providing Integrated tools Data, models & languages to End users	Provides Structured information to the End users
Orientation	External Orientation	Internal Orientation
Flexibility	Highly flexible	Relatively flexible
Analytical Capability	More Capable	little Capable
System Analysis	Emphasis on tools to be used in decision tools	Emphasis on information requirement Analysis
System Design	Interactive process	System Devpmt based on static Requ

Strategic level System

It supports Senior level managers to tackle and address strategic issues and long term trends. Here the principal area is tracking changes in Ext Conditions and matching them with internal Conditions.

Executive Support System:-

It Serves the strategic level, management.

characteristics. [ESS = DSS + External information]

1. Serves info needs of Top executives
2. Enable user to Extract Summary Data without formulas.
3. Rapid access to manager reports.
4. Provide Extensive Online Analysis.
5. Capable of Accessing both internal & External Data.

Contents of EIS

1. EIS measures must be Easy to Understand & collect.
2. Data in System reflect the objectives of Organisation.
3. Performance indicators.
4. Encourage staff to involve

Specialised Systems

Expert System

Cross functional
Info systems

Core Banking
System

Expert System:-

It is a highly developed DSS that utilises the knowledge Generally Possessed by an Expert to share a problem. ES are software Systems that imitates the Reasoning Process of Human experts and provide decision makers, with the type of Advise they normally receive from such Expert Systems.

Some of business applications are

1. Accounting & Finance: Provides Tax Advise, assist Credit-Authorisation Decisions, Selecting forecasting models, Investment Advise etc.
2. Marketing: Responding to Customer quivies, marketg etc.
3. Manufacturing: Determining whether processes are correct interm of both qty qity.
4. Personnel: Assessing Applicant qualifications.
5. General business: Assisting in project proposals, Aquisition decisions, evaluating performances.

Need for Expert System:-

1. Expert labour is Expensive
2. Even Experts are not good in every factor/area.

Benefits of Expert System

1. Presevere knowledge
2. Put info in Active form
3. Assist Novices in thinking the Experts do.
4. Not Subject human defects
5. Effectively used as strategic tool.

Properties Require for ES.

1. Availability
2. Complexity
4. Expertise
5. Structure

Cross functional Information System:- They are known as integrated information system that Combines most of IT Systems designed to produce information and Support decision making for different levels of management and business-functions
Example:- ERP.

Enterprise Resource planning (ERP):

- It is a process management software that allows an organisation to use a system of integrated applications to manage the business and automate many back office functions related to technology, and human services.
- ERP Software is consider as Enterprise Application as it is used by large businesses and often require dedicated teams to customise and analyse the data and to handle upgrades and deployment.

Components of ERP.

ERP consists 4 methodological components. They are
Software Components: Consist Several modules, like Finance, HR, SCM, SRM, Business Intelligence etc.

Process flow: Model that Illustrates, the way how info flow among different modules within an ERP.

Customer mindset: By Implementing ERP System, the old ways adopted by users have to be changed.

Change management: In ERP implementation, change need to be managed at different levels.

Benefits of ERP.

1. Streamline processes
2. Reduce Redundant data entry
3. Establish uniform process among diff units
4. Improved work flow
5. Improved customer satisfaction based on on-time delivery.
6. Reduced inventory cost due to better planning, & forecasting
7. Track actual cost and perform ABC Costing

Core Banking System:- CBS :

- CBS is a banking Services provided by a group of inter networked bank branches where customers can access to their accounts and perform basic transactions from any of the member branch offices.
- Banks makes these Services available across multiple channels like ATMS Netbanking, and branches.
- CBS may be defined as bank end System that process Daily banking Transactions, post update to accounts and other Financial Records.

Elements of CBS.

1. Making & Servicing loans.
2. Opening new accounts
3. Processing cash dep & drawals
4. Processing pymts & cheques
5. Calculating interest
6. CRM activities*
7. Mrging Cust &c
8. Maintaing records of all transactions.

APPLICATION OF IS in Enterprise Processes.

IS Performs 3 Vital roles in business firm

1. Support business processes & operations.
Ex. TPS, Process Controll Systems
2. Support Decision making
Ex. DSS, MIS, EIS.
3. Support Strategic Competitive Advantage.
Ex. Expert System, KMS, SIS, Functional Business System.

To operate IS effectively A Business mger should have following knowledge.

1. Foundation Concepts
2. Information Technologies
3. Business Applications
4. Development processes
5. Management challenges.

Various Types of Business Application.

1. E-business.
2. Fincial Service Sector

Overview of underlying IT Technologies.

IT Tools crucial for bussiness growth.

1. Business website:- By this org reach large amt of Custmr. used for advtising. Websites are designed using HTML, XML, ASP.NET etc
2. Internet & Intranet:- best source for communication, Time & space is no barrier for conducting meeting of teams at various locations.
3. Software & Packages:- DBMS, Datawarehousing, data mining can be used for getting info that play imp role in decision making that boosts the business in competitive world.
4. Business Intelligence
5. Computer Systems, Scanners, laptops, Webcams, priento ct.