

Information System Concept

- data which have been put into a meaningful and useful content.
- Davis & Olson - "Info is data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in current or progressive decision."

RM $\rightarrow$ FG

data $\rightarrow$ info.

Q. Attributes of Information

CRAFT DRP MVA VR

- C omputeness
 R eliable
 A vailability
 F requency
 T ransparency
 D eLAY
 R ate
 P urpose
 m ode & format
 V alidity
- A dequacy
 V alue
 Q uality
-

Q. Types of information

Internal

- generated from operations of orgⁿ at various functional areas.

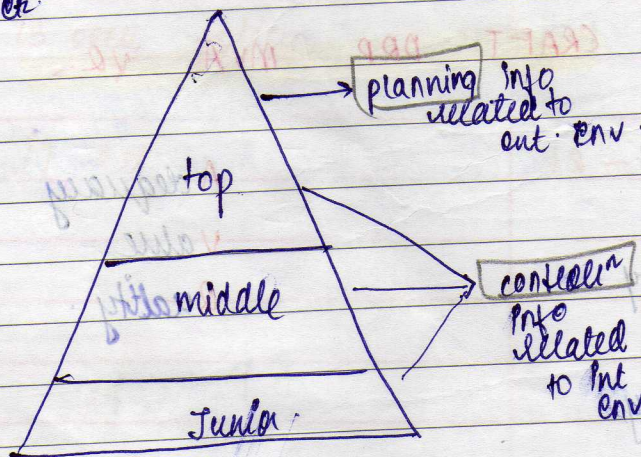
- processed from low $\rightarrow$ middle $\rightarrow$ top

eg:-
person figures
sales figures
material etc.

External

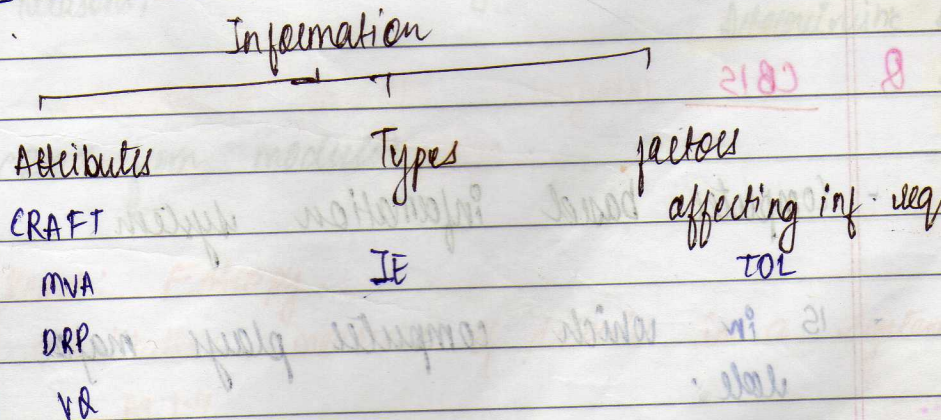
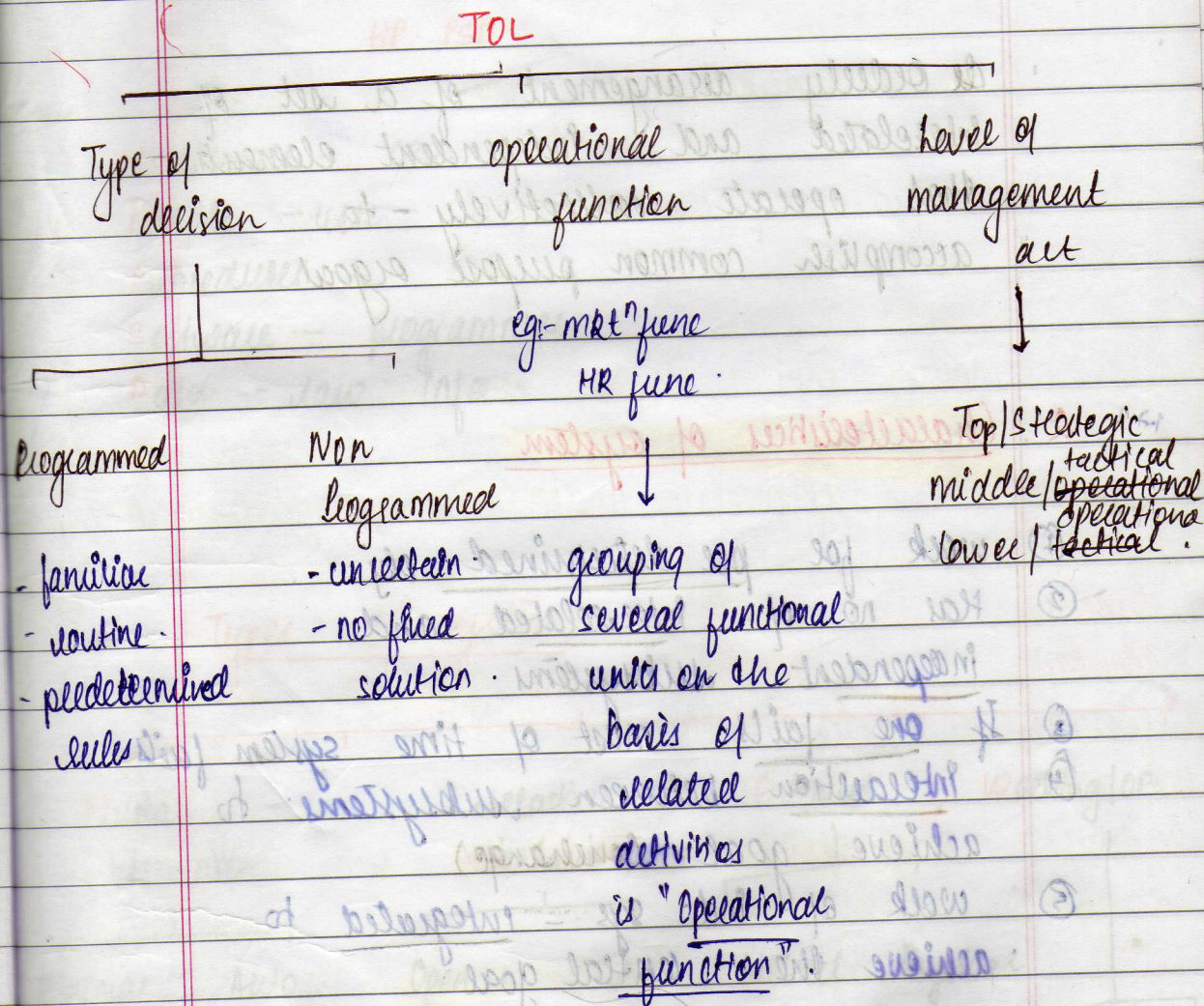
- collected from external environment
- affects performance from outside.

eg:- info about govt policies, competition etc.



1.2.1

Q Factors affecting information requirement



★

System

- A orderly arrangement of a set of interrelated and independent elements - that operate collectively - to accomplish common purpose or goal.

1-2-2

Q. Characteristics of system

- ① work for pre determined obj.
- ② Has no of interrelated and independent subsystems.
- ③ If one fails - most of time system fails.
- ④ Interaction between subsystems to achieve goal (change)
- ⑤ work of ind. sys - integrated to achieve the central goal.

Q

CBIS

computer based information system

- IS in which computer plays major role.

• Components of CBIS

HP. PSD

Hardware - CPU,

People - user

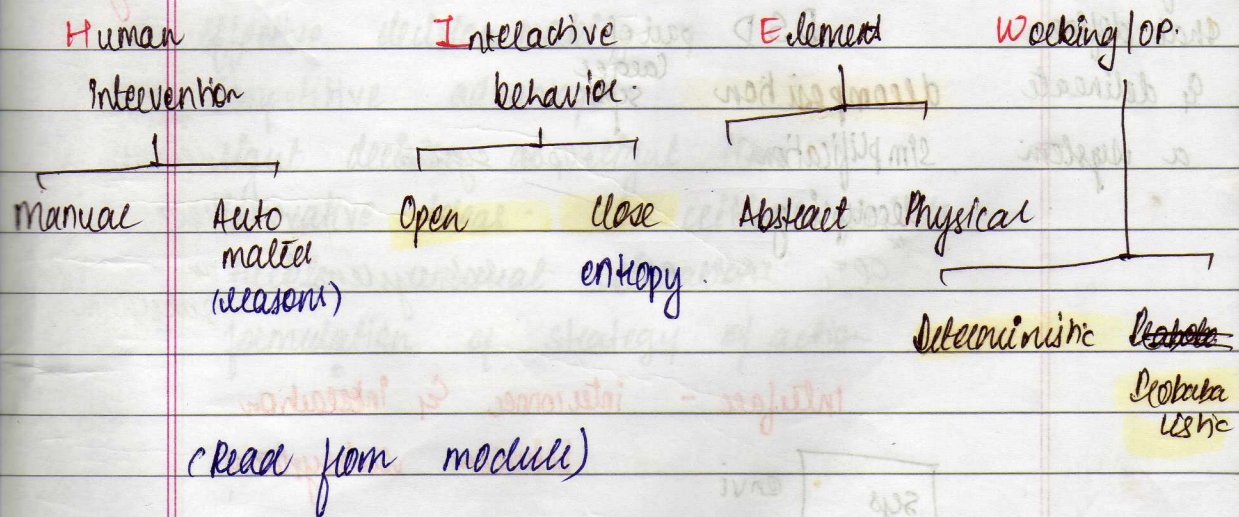
Procedures -

Software - programmes

Data - raw info

Q Types of system

HIE-W



(Read from module)

Read: Entropy.

- quantitative measure of disorder in a system.

pg 1.4

★ Systems environment

General model of system

Input — process — output — storage — feedback

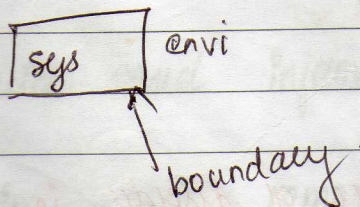
System envi - outside boundary

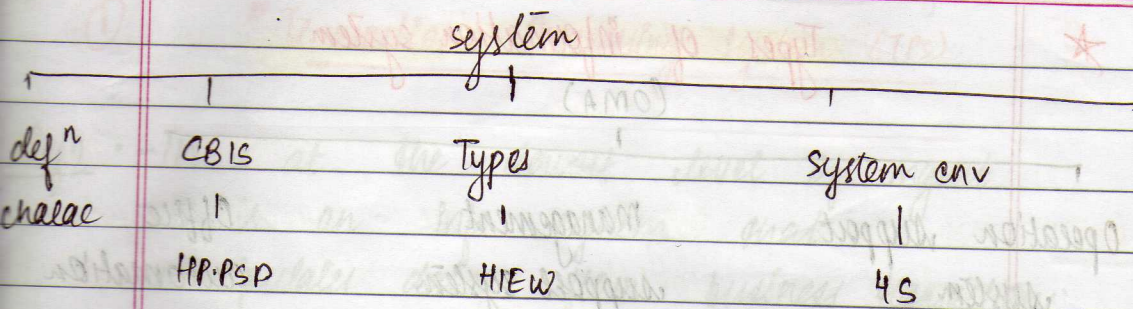
"4S"

set of elements under which system works

System boundary features that define & delineate a system	Sub system (characteristics)	Supra system	System stress & change
	DSD part of larger sys		
	decomposition		by Supra sys
	simplification	- supra system	causes
	decoupling		of stress on subsystem
	* CPT, IPCC, PCC - sub system		

Interface - interconnect & interaction between subsystems





* Information system

arrangement of a number of elements that provide effective information for decision making and control of functionalities of an orgⁿ

* Role of IS

- effective decision making.
- competitive advantage.
- right decision at right time.
- innovative ideas at critical points.
- tackle unusual situations.
- formulation of strategy of action.

★ Types of information system

(OMA)

Operation support
system
(OSS)

management
support system
(MSS)

Office
automation
system

Transaction processing sys
(TPS)

Management info sys
(MIS)

Enterprise resource plaⁿ sys
(ERP)

decision support sys
(DSS)

executive info
support sys
(EIS)

expert system

Text processing

electronic d
mngmt sys

Electronic m
commⁿ sys

(email, fax, ...)

teleconfer

& video
conf

1.9.1

(1)

Transaction Processing system (TPS)

- Defn - TPS is at the lowest level of mgmt
- & is an info system that manipulates data from business transactions.
 - and provides useable info

TPS

ActivitiesComponentsFeatures/Benefits

Capturing data

↓

Processing data

↓

generating reports

↓

processing queries

Input

Processing

Storage

Output

BALS

Benefits easily measurable

Automation of basic ops

Large volume of data

Source of input for other system

Types of TPS

Batch processing

→ periodic intervals

Real time or

online processing

1
simultaneous
entries.

(very costly)

eg:- ms excel, mobile phone.

(2)

Management Information System (MIS)

- Defn:-
- MIS is an integrated user-machine system
 - designed for providing info
 - to support - operational control
 - mgmt control
 - decision making func in an org

① Meaning & functions

Meaning

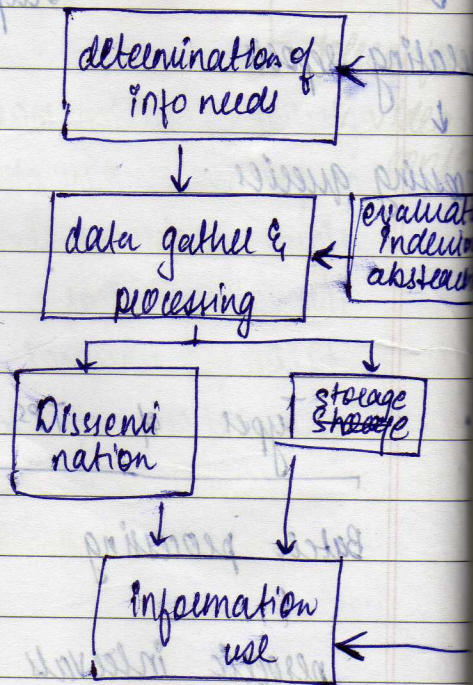
(a) Management

- functions
- of planning
 - organising
 - initiation
 - control
 - monitoring

(b) Information: processed data for decision

(c) system: defn.

Functions



② Characteristics.

MIS M-HCC
management oriented
integrated
common data flows
subsystem concept
management directed
early planning element
common database
computerized

③ Pre-requisites of MIS

(Base rule)
SEC DR
support of top mgmt
evaluation
control & maintenance
database
qualified system & mgmt staff

④ Constraints (problems)

Non availability of experts
difficulty in selection of
subsystems
multiple business obj
lack of co-operation from
staff.

⑤ Misconceptions about MIS
(myths)

- ① computer dependent
- ② more data means more information
- ③ Accuracy is of vital importance

⑥ Effects of computers for MIS

- ① speed increases (processing, data retrieval)
- ② scope of analysis is widened
- ③ complexity of design is ↑
- ④ integration of sub system
- ⑤ ↑ effectiveness of IS
- ⑥ more comprehensive info

SACIET

⑦ Limitations

- ① GIGO principle
- ② not a substitute 4 mgmt
- ③ lack of flexibility
- ④ cannot provide tailor made info
- ⑤ considers quantitative factors only.
- ⑥ less useful 4 non prog. decision
- ⑦ hoarding info, ↓ effectiveness
- ⑧ frequent Δ in top mgmt reduces effectiveness.

③ * Office automation system

Activities in office

Benefits

Categories

- document capture
- doc creation
- receipts & distribution
- filing, search & retrieval & follow up
- calculations
- recording utilisation of resources

- improves communication
- reduces cycle time
- reduces costs
- ensures accuracy.

Text processing system

E

de

nic
mt system

Electronic
message communication
system

Tele conferencing
& video
conferencing

Email

Fax

Voice mail

- Features

- i) electronic transmission
- ii) Online development & editing.
- iii) Broadcasting & Relouting.
- iv) integration with other info system.
- v) Portability.
- vi) Economical.

Decision Support System (DSS)

It can be defined as a system that provides tools to managers to assist them in solving semi structured or unstructured problems in their own personalised manner.

Characteristics

- unstructured / unstructured decisions
- flexible to acc to needs
- user friendly easy to use

Steps in solving problem

define & formulate problem
↓
form problem into DSS model
↓
use model to obtain results
↓
reformulate problem

1.10.11

Components

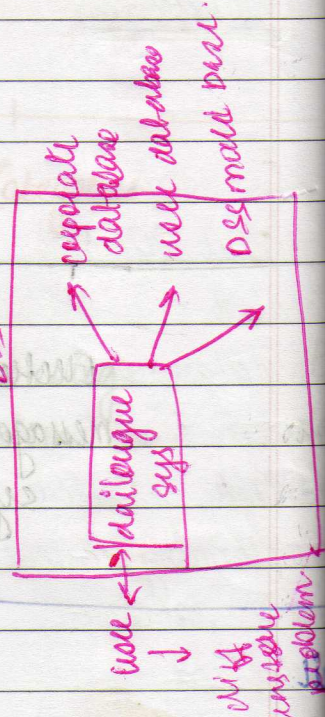
- ① User
 - manager
 - staff specialist
- ② Database
 - corporate database
 - user data base
- ③ Planning language
 - general purpose
 - special purpose
- ④ model base (brain)

examples

- ① cost accounting system
- ② capital budgeting system (Automated)
- ③ Budget variance analysis system
- ④ general DSS (expert choice)

* programmed decision system

(MIS + DSS)



5) Exec is a DSS that is designed to meet the special needs of top level managers.

Characteristics:

- 1) supports top level mgmt
- 2) user friendly
- 3) rapid access to info
- 4) access to internal & external data
- 5) facilitates analysis
- 6) can be linked to DSS easily.

Types of decision

- 1) Strategic planning
- 2) Tactical planning
- 3) Fire fighting
- 4) general control.

Info used by experts

(characteristics)

HILL

- 1) High degree of uncertainty
- 2) Future orientation
- 3) Informal source
- 4) low level of detail
- 5) lack of structure.

Contents or principles to design.

- 1) easy to understand and collect data
- 2) balanced view of objectives.
- 3) due & fair incentives evaluation
- 4) facilitate ownership of objectives.
- 5) available for everyone
- 6) meet the changing needs.

distinction

1) pictorial graphical info. 2) top or near top mgmt 3) online 4) x drill 5) user friendly	4) Had is summary/tubular form info. lower level mgmt offline. x drill computer operator generate data
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classmate

Date 15

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⑥ Expert System.

An expert system is a highly developed DSS that utilises knowledge generally possessed by an expert to solve a problem.

⑥ Needs

- 1) experts are scarce & expensive
- 2) experts can handle only a few factors at a time

Benefits

- 1) preserve knowledge
- 2) expert services available
- 3) helps managers
- 4) devoid of human failures
- 5) strategic tool.

Components

- 1) Knowledge base
- 2) Inference engine
 - forward chain
 - backward chain
- 3) Knowledge acquisition subsystem (KAS)
- 4) user interface.