

Management Information and Control System

Previously.. Friends U might be saying.....



MICS = MICS Is Complex Subject

Please... Can U give me Opportunity.. as...

MICS = May I Can Simplify

– Prof. Vipul Dhulla, C.A., D.I.S.A



After reading this Book
You will surely agree & say that...



MICS = MICS Is Completely Scoring

And shall also have confidence now, as...

MICS = MICS Is Conceptually Simplified.

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Dear Friends,

Please share your some valuable time in giving your valuable suggestion, views, comments, keywords, etc., for the benefits of others.

You may also give your comment on presentation, methods & style you required in a particular topic / chapter to be there, so that its more user friendly. (I.e In readable media as well as in other media like ; Internet)

Do tell... more on which subject you would like to have a book – more user friendly & exam-oriented.. & its method & source, as we all together share this knowledge and will benefit students community at large.

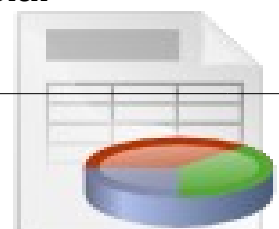
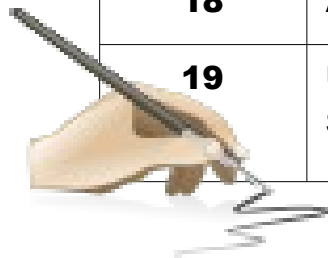
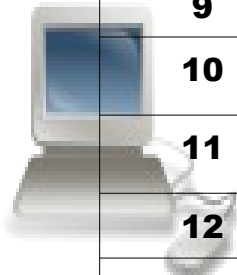
So fell, free to give YOUR VALUABLE VIEWS at email : vipul@dhullasir.com

- Prof. Vipul Dhulla

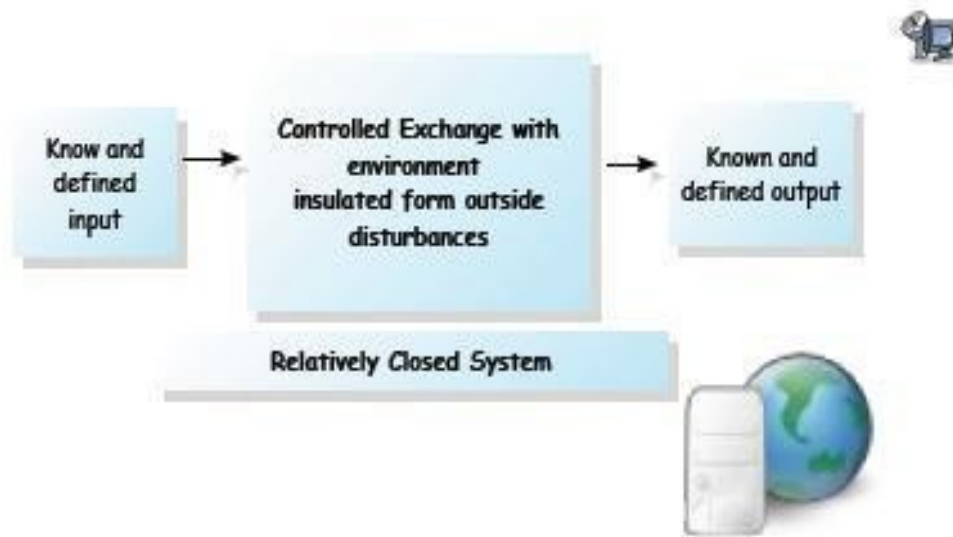
***“Knowledge is Power,
Sharing it Gains, But Selfishly Storing it Pains”***



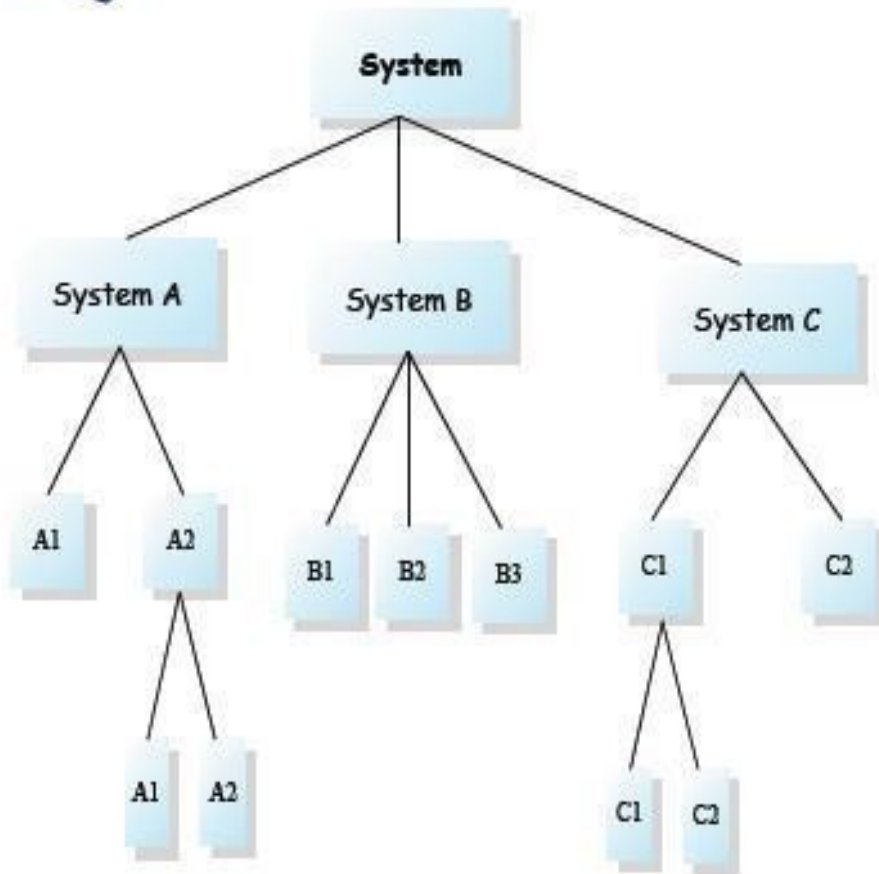
Chp. No.	Name
1	Basic Concepts of Systems
2	Transaction Processing System
3	Basic Concepts of MIS
4	Systems Approach and Decision Making
5	Decision Support and Executive Information Systems
6	Enabling Technologies
7	System Development Process
8	Systems Design
9	System's Acquisition, Software Development and Testing
10	Systems Implementation and Maintenance
11	Design of Computerised Commercial Applications
12	Enterprise Resource Planning : Redesigning Business
13	Controls in EDP Set-up : General Controls
14	Controls in EDP Set-up : Application Controls
15	Detection of Computer Frauds
16	Cyber Laws and Information Technology Act 2000
17	Information Security
18	Audit of Information Systems
19	Use of Simple CASE Tools, Analysis of Financial Statements using Digital Technology



- By Prof. Vipul Dhulla, C.A., D.I.S.A.

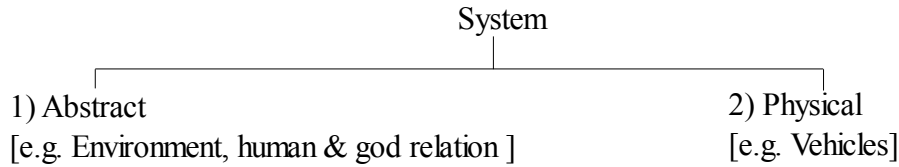


BASIC CONCEPT OF SYSTEMS



Definition of a system :-

- Is a set of interrelated elements // that operate collectively // to accomplish some common purpose or goals.
- Human body → living sys.
- Business in sys. → where economics resources (M4) are transformed by organization process into g/s.
- System can be



- Abstract sys. = orderly arrangement of interdependent ideas or constructs.
- Physical sys. = set of elements which operate together to accomplish an objective.
- e.g. : circulatory sys. (blood vessels), transportation sys. (vehicle), weapons, school, computer sys., A/c. Sys.

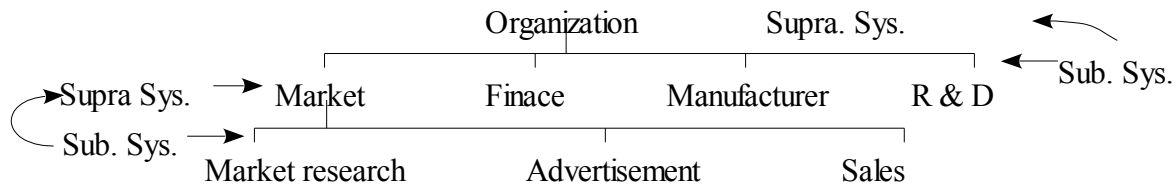
General Model of Sys.



Sys. is inside the boundary & environment is outside.

Sys. Environment :-

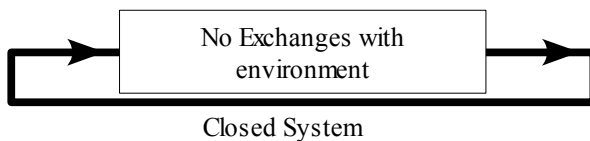
- All sys. function within some sort of environment
- Environment like the sys. is a collection of elements
- There are many types of sys. & environment
- The features that define & delineate a sys. from its boundary
- A sub.sys. is a part of large sys.
- Each sys. has sub.sys., which in turn is made of sub.sys. being delineated by its boundaries.
- A Supra sys. refers to the entity formed by a sys. & other equivalent sys. with which it interacts.



Types of Sys. :-

i) Deterministic	probabilistic
* given the nature of input we can reasonably predict output. e.g. A/c. Sys.	* given the nature of input, we cannot predict output. e.g. Inventory sys. are average demand & time for replenishment

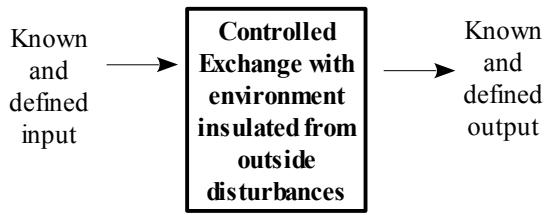
ii) Closed systems



- it is self contained & does not have interaction
- no feedback
- tends to deteriorate

iii) Relatively Closed systems

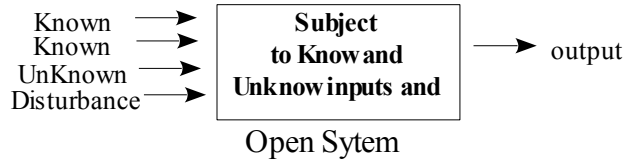
- Mfg. Process can operate without disturbance from



Relatively Closed system

- supplier. Etc.
- Effective.
- E.g. :Computer sys.
- It is required to preserve their identity & autonomy.
- They may ignore many opportunities so as to maintain their core-competence

iv) Open Sys.



Open System

- Interact with other sys., get random & undefined inputs
- It tends to have form & structure to allow them to adopt to change in their external environment for survival & growth

v) Sub. Sys.

- ➔ IPO
- ➔ Boundaries
- ➔ Entropy
- ➔ Stress
- ➔ + Interface

- It is a small workable Module of a sys.
- It has all char. of sys. in addition it has interface to interconnect two sub.sys. [* ref. Module given next]

Decomposition :-

- A complex sys. is difficult to comprehend when considered as a whole
- Therefore sys. is decomposed or factored into sub.sys.
- Boundaries & interface are defined, so that the sum of sub.sys. constitutes the entire sys.
- Process of decomposition is continued with sub.sys. divided into smaller sub.sys, until the smallest sub.sys. are of manageable size.
- If the task is to design & prog. a new sys., the sub.sys. is major application
- Decomposition into sub.sys is used to analyze an existing sys & to design & implement a new sys.

Simplification :-

- The process of decomposition could lead to a large no. of sub.sys interface to define
- No. of interconnection = $\frac{1}{2} [n (n - 1)]$, where n = no. of sub.sys.
- Some method of simplification :-
 - Clusters of sub.sys. are established which interact with each other, then a single interface path is defined from the cluster to other sub.sys. or clusters of sub.sys.
 - e.g. Database , which is accessed by many prog., but the interconnection is only through a database management interface.

Entropy :-

- Desire of sys. to get into disorder stage (rundown, decay, etc.) is in sys. terminology called ENTROPY
- Entropy can be reduced by maintenance, i.e., by negative entropy

Stress & Sys. Change :-

- Pressure on / within, i.e., Source -> internal / external
- A stress is a force transmitted by a sys's supra sys. - that causes a sys. to change, so that supra sys. can better achieve its goals.
- Types of Stress + [how to cope] :-
 - 1) A change in goal set of sys. [implement new sys.]
 - 2) Change in achievement level desired for existing goals [modify the existing sys.]

Process of adaptation → change can be → structural change (i.e. For more sharing terminal) / Process change (i.e. Change method of data sorting)

Modules :-

- Break large prog in small module:decomposition e.g. In A/c.sys. & its module:sales, purchase,etc.
- Because it increases the efficiency (we find – removal of elements which reduces efficiency & then we integrate)
- Result into simple sys. - which is more efficient.

Consequence of stress :-

When supra.sys. exerts stress on a sys. - then sys. will change to accommodate the stress, or it will become pathological; that is, it will decay & terminate.

CHARACTERISTICS OF INFORMATION

Information : processed data – has a surprise value for the user – it is necessary for mgt. - in Decision Making (DM) & survival of an entity → depends on Right decision at right time based on right information available. Its Characteristics are :-

1. Timeliness :

- There is a saying ' Justice delayed is Justice denied ' same can be converted to ' Information delayed is Information denied', as only timely information will generate effective decision.

2. Purpose :

- Information must have an objective to which it is addressed – as people have variety of purposes. The basic purpose is to inform, evaluate, persuade, & organize – It must help create new concepts, identifying problems, solving problems, DM, Planning , initialing & controlling (*think : POSCORD ...humm...*)

3. Mode & format :

- Business Information can be presented as visual, verbal or written information
- The selection of format shall be based on the purpose for which the information is being used. Use of tables, graphs, reports for information communication needs to be evaluated based on purpose of DM
- Relevance to problem must be only there &/ or highlighted like in Audit report : entire detail is required – but variance & deviation are highlighted.

4. Redundancy :

- It means excess of information carried per unit of data.
- E.g. 75% of letters used in a phrase are usually redundant. However, in business situation redundancy may sometimes be necessary to safeguard against error in the communication process.
For e.g. the correspondence, in contract may carry figure like '4' followed by (FOUR)

5. Rate of transfer :

- Means the transmission / receipt rate of information.
- It is generally denoted as character per second
- Speed depends upon the communication media, lines & acceptance speed of receiver.

6. Frequency :

- The Frequency with which information is transmitted or received affects its value.
- The periodicity for generation of information. For e.g., Internal audits are usually done monthly / bi-monthly or quarterly
- Frequency directly linked to level of mgt., i.e., the information is being sent to whom.

7. Completeness :

- Purpose of information is to help DM , no missing link. E.g. Not just give ROI & NPV but also give mean, standard deviation, shape of distribution of ROI & NPV (Hartz's model of investment) → this will help in DM.

8. Reliability :

- Confidence level of information must be indicated so as to help user (Internal / External) - □ always check & survey error rate

9. Cost benefit analysis :

- Benefit to be justified with cost
- For cost : use of cost sheet but Benefit (tangible + intangible) : however to analysis it – all managerial statements are categorized on degrees of importance
 1. Absolute st. : → cannot be discontinued whatever be cost of preparing it.
 2. Necessary st. : → may have high cost but may be discontinued in very stringent circumstance
 3. Normal st.: → it can be discontinued / replaced if its cost is high.
 4. Extra st.: → which is prepared only if benefit arising out of it is substantially high.

10. Validity :

- Term is linked to timeliness of information. It is valid only when it serves the purpose for which it is created.

11. Quality :

- Information not be spoiled by personal bias.
- No error : ✨ use Internal control, etc...
- Accuracy should not be made a fetish. For e.g., Sales forecast for a group of products can well be rounded off to thousands of rupees.

key word:



1. Real Time Purpose of Quality Male / Female is – complete work Frequency by Redundancy – at Valid Rate – for Cost benefit

2. R.T.P. M/F (mode & format) of Ca Final 2R Cost effective & Very Qualitative

Keyword 1	
Real	Reliability
time	Timeliness
purpose	Purpose
Of Quality	Quality
M/F	Mode & format
is	--
Complete	Completeness
work	--
Frequency	Frequency
by	--
Redundancy	Redundancy
at	--
Valid	Validity
Rate	Rate of transfer
for	--
Cost benefit	Cost benefit analysis

Keyword 2	
R	Reliability
T	Timeliness
P	Purpose
M/F	Mode & format
Of	--
Ca	Completeness
Final	Frequency
2:R	Redundancy
R:R	Rate of transfer
Cost effective	Cost benefit analysis
&	--
Very	Validity
Qualitative	Quality

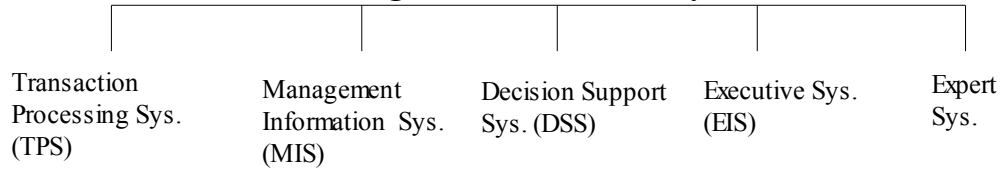
Value of Information :-

Given a set of possible decisions, a decision maker may select on basis of such information in hand. If new information causes a different decision to be made, the value of the new information is difference in value between outcome of old decision & that of the new decision, less the cost of obtaining information

Business Information system :-

- Business sys. depends on a more or less abstract entity called an information sys.
- Information sys. serves all the sys. of a business linking the different components in such a way that they effectively work towards the same purpose.

Categories of Information sys.



Internal Data = TPS ;
TPS + Process ... = MIS ;
MIS + External data = DSS ;
DSS + utilities = EIS
(in detail we shall learn in further Chapters)



