

## CHAPTER 2

# MIS DYNAMICS

<u>SR. NO.</u>	<u>CONTENTS</u>	<u>PAGE NO.</u>
2.1	BASIC CONCEPTS	31
2.2	MAJOR PARAMETERS	31
2.3	ORGANISATION – CULTURE & MAGNITUDE	35
2.4	HARDWARE & SOFTWARE BUDGET & COST CONSIDERATIONS	37
2.5	HARDWARE & SOFTWARE OPERATION & MAINTENANCE	41
2.6	MANPOWER & TRAINING	45

## MIS DYNAMICS

### **PREAMBLE :**

Unlike many other applications, MIS is very dynamic and therefore it changes from one organisation to another organisation. In this chapter all those factors are discussed which contribute in arriving at MIS design and its successful implementation in the organisation. The following major parameters are covered :

1. Behavioural Parameters in MIS.
2. Organisation, Culture and Magnitude.
3. Hardware and Software budget and cost considerations.
4. Hardware and Software - Operations and Maintenance.
5. Man-power and Training.

Basically, these parameters are the aspects which makes MIS dynamic. And usually they are overlooked because these are not the factors directly connected with Hardware or Software developments. But at the same time these parameters are playing very crucial role in MIS implementation. In this chapter related study has been presented to resolve some of the key issues. Wherever required a checklist has been worked out as a ready reckoner which helps in identifying the areas to be taken care of while implementing MIS.

## MIS DYNAMICS

### 2.1.0 BASIC CONCEPTS :

Accepting the basic arguments and the fundamental facts that all the MIS has to exist in the dynamic environment because the design of MIS and the need of MIS always changes with the organisation. The difference in MIS from one organisation to the other organisation is - attributable to the several aspects. Let us try to understand these parameters and analyse why they are dynamically change MIS requirements and how it creates an impact on MIS Design and Implementation.

### 2.2.0 MAJOR PARAMETERS :

Following parameters or aspects need to be taken care of for the successful MIS implementation. Some of these parameters may not look directly relevant but they certainly form a part in total MIS implementation.

1. Behavioural parameters in MIS.
2. Organisation, culture and magnitude.
3. Hardware & Software budget and cost considerations
4. Hardware and Software - Operations and Maintenance
5. Manpower and Training.

Let us examine the role of each parameter, the required considerations and details :

### BEHAVIOURAL PARAMETERS IN MIS :

Behavioural parameter in MIS is most vital aspect in the process of MIS implementation. If the human aspect in the systems implementation is ignored it would certainly lead to a total failure. This aspect has been highlighted by several authors in last twenty years. While going through the study two approaches are observed taking care of the human aspect and its role in MIS implementation. They are :

- A. Users' behaviour and inter-personal conflict resolution.
- B. Human behavioural information related to counter productive attitude.

The aspect related to users' behaviour was discussed, probably the first time, by Dr. Barry Render and Dr. Maurice Villere in 'Games Systems People Play' published in Journal of Systems Management in May, 1977. Thereafter a paper was published by the author in CSI -81 - elaborating the approach using the theory of Transactional Analysis. In the said papers the author discussed the cross-section of the users and their classification and gave the guidelines to deal with the different type of the user. The main concept that was emerging out of these study was conveying that system needs to be sold to user. Unless the user accepts the system, the implementation may lead to severe problems resulting into the failure. To make

the system acceptable to the user, it is essential to know the type of the user as well as systems professionals own orientation. When the user is 'tough' and system professional is 'No Action' person, then the system project shall never get through since with the tough user the system person has to be highly assertive and aware about functional responsibility. Especially when it comes to MIS, as Frederick Starke says, "Management often does not consider which information is most useful for its purpose. As a result, a great deal of information may be available that is never used, or information that is necessary may not be generated at all".

#### **NEED FOR MIS EXTENSION :**

Large number of studies have been done and continuously going on which points out towards the felt need of 'Human Behaviour' aspect of the organisation, when MIS needs to be introduced or have plan to implement, to get the positive impact in terms of improved efficiency and productivity. Almost two decade ago Frederick Starke and Thomas Ferratt came forward with a new dimension. They suggested that like MIS for all technical and techno-commercial application, there must be an MIS developed regarding the human element giving ideas to the management regarding employees perceptions, attitudes and preferences. The purpose is much the same way that

preventive maintenance and monitoring the condition of mechanical operation can minimize expected breakdowns and their associated cost, monitoring the state of human element can minimize unexpected cost of employee dissatisfaction. These specific costs are : frequent turnover, absenteeism and counter productive behaviour. Thus, it emerges that in order to obtain full benefit from MIS, the existing technical information must be blended with behavioural information. Then management will have data on both the human and non-human elements in the organisation and will be able to make decisions that will improve the organisational effectiveness.

#### **PHYSICAL SIDE OF MIS :**

Way back in 1984 LESLIE MATTHIES gave a new dimension that physical improvements in working environment can improve the productivity of a system. The author said that when MIS is working as a support to the management why not extend the scope of the system project to work out physical parameters needed for the improved working condition so that the task of implementation is completed in totality.

It is suggested that the proper office layout, air and temperature contributes directly to the productivity of the system. Similarly, colour of the wall, noise and the proximity of the activity span contributes to the improved efficiency.

### 2.3.0 ORGANISATION CULTURE & MAGNITUDE :

As discussed in earlier chapter, MIS design changes depending on the type of the organisation, size of the organisation and the culture of the organisation. Requirement of MIS would be obviously different for each organisation because of the different variables which decide the need and the details of MIS. Precisely, this is the reason why a model MIS is not available which may be a general purpose MIS catering to all the organisation.

Though 3D-Interface approach is discussed earlier, it would be worth mentioning here that organisation, culture and magnitude are the most relevant but dynamic parameters which has direct impact on both MIS design and implementation. Presently, a most common thumb rule is applied that for a given type of the organisation MIS design is same. For example, for any automobile industry, more or less, the system design remains the same. Similarly, for continuous process chemical industry MIS requirement shall be similar. But in this approximation approach, other two equally relevant dimensions are not considered. Even in the cases where magnitude or the size of the organisation have matching Hardware/Software capabilities and manpower but if the management culture is not considered at either MIS design stage or at the time

of implementation, then it may lead to the failure. If we refer the views of various international experts who have contributed in MIS development, their suggested processes are also varying which reflects that there are different situations which change the MIS design and implementation process (Refer Annexure A).

Considering the different dynamics, Dr. Jugoslav S. Multinovich has suggested two tier strategy for MIS implementation :

**People Related Strategies :**

- Get Management Involved.
- Ascertain that there is a felt need of the system.
- Get User Involvement.
- Consider User Requirements.
- Consider User Attitudes.
- Establish effective communication.
- Keep interface simple.
- Let Management determine information usefulness.

**Systems Related Strategies :**

- Identify the problem.
- Plan the implementation.
- Control the implementation process.
- Post implementation evaluations.

The above strategies are clearly indicating the focus





where the concentrated efforts are required. The corresponding issues are bundled into two groups which helps in dealing with each group separately with an appropriate approach. However, the people related strategy is mainly talking about User's attitude, involvement and requirements and suggests for Management Involvement and their Information needs. This confirms that organisational culture, management perception and type of the user matters a lot as an important parameter of MIS Dynamics. These strategies reconfirm the 3D-Interface concept discussed in the earlier chapter.

#### 2.4.0 HARDWARE / SOFTWARE BUDGET & COST CONSIDERATIONS :

There is no need of stressing importance of budget for any organisation. Since, like the budget for any revenue expenses, the capital expenditure budget is prepared for Hardware/Software. Although buying Hardware or Software is not regular transaction, with the advancement of computer role in every facet of activities, and with the continuously progressing technology, the Hardware/Software updation has become almost a regular phenomenon in most organisations. Therefore, when we talk of MIS Dynamics the Hardware/Software budget and cost aspects are directly applicable and relevant in understanding MIS scenario and implementation plan.

### BUDGET CONSIDERATIONS :

While deciding the Hardware/Software Budget, the following aspects are considered :

- Time during which the system is to be developed and implemented.
- If the plan is for more than a year then the Budget shall be appropriately worked out.
- Expected price escalation during the year.
- Past year outstanding payments which need to be included in current year budget.
- Provision for foreign exchange fluctuations where imports are involved.
- Provisions for incidental cost like Installation, Training, Documentation and Support.

### COST CONSIDERATIONS :

Before the budget is prepared for the projected expenses it is very essential to have clarity of the cost involved of the Hardware/Software under consideration. There are several aspects involved for the cost considerations :

- Hardware and Software platform is predecided or options are open.
- Software development in-house, through consultants or ready package.
- Budget is fixed or open.
- Imports, duty and foreign exchange fluctuations.

- Infrastructural cost like AC, Power, UPS, Data Storage etc.
- Differential cost of LAN, ON-LINE Terminals, WAN and Global Network.
- Tender preparation and evaluation.

Preparation of tender is a skill and demands absolute clarity about market, product and vendors.

The tender must demand the technical and commercial details with as much break up as possible which help later on tender evaluation and arriving at the best price on equitable footings. Else, it is quite likely that lower cost of the tender might cost much higher than the highest at the end.

#### COST AND RELATED DYNAMICS

While considering Hardware/Software cost there are parameters which needs to be considered since they are the dynamics affecting the cost directly. the major dynamics are reflected below :

- Hardware** :     - With Brand name.  
                           - Leader's product.  
                           - Assembler's product.

With each one of above, although the product may be same, the cost would vary substantially.

- Software** :     Package vs. Tailored.  
                           With different options, cost would

change.

**Manpower** : Manpower cost is an important aspect for the project Budget. The cost of man-power would change with the organisational environment like :

- Organisation with motivation climate.
- Organisation with passive attitude.
- Settled organisation vs.

New organisation.

**Time** : If the software project is not implemented in time, the cost would escalate and may therefore affect the budget directly.

#### **Checklist of Cost Considerations Aspect**

A Checklist can be arrived at for Cost Consideration and related aspects which gives the clarity on cost components involved in the process.

1. Hardware and Software Platform :
2. Software Development In-house or buying :
3. Infrastructural cost :
  - Furnishing
  - Air conditioning
  - Power
  - UPS
  - Data storage, etc.
4. Manpower Cost :
  - Software Development

- Implementation

- Training

5. Tender preparation & Evaluation cost :

6. Taxation / Import duty etc. as applicable :

2.5.0 **HARDWARE AND SOFTWARE-OPERATIONS & MAINTENANCE** :

Operations and Maintenance is the back-bone of any system. It is far easy to port the system on to the hardware once. But it is very difficult to take care of regular operations and maintenance of hardware and software. With specific applications like MIS, the sensitivity of the operations is increasingly complex. The operation and maintenance aspects will change with the magnitude of the operations like :

- a. PC's based systems.
- b. Network based systems (LAN/WAN).
- c. Super Mini with nos. of terminals.
- d. Mainframe/Large system with broad based terminals.

Each one of the above environment have different approach and considerations for operations and maintenance.

a. **PC based Systems**

- Requires low manpower for development and operations.
- Easy to train users.
- Maintenance can be in-house / on call basis since the downtime is low. Applications are normally not integrated

and hence no complexity in software maintenance / development. MIS in this environment could mean integrating various informations and generating reports compiling these informations.

b. **Network based Systems**

- Data sharing and hence requires password securities.
- Relatively trained manpower is required for development of the system.
- Minimum training required to the users.
- Require hardware maintenance by an outside agency to take care of hardware and its connectivity.

Application is developed in resource sharing and data sharing environment and hence systems design and development takes more time than on PC's and requires maintenance efforts little more than a PC's environment. Back-up aspect is important here as a part of regular operations and maintenance.

c. **Super Mini based Systems**

- Data sharing, series of terminals and spreadover set-up requires systems security aspects to be taken care of. this is net with either by Features of Operating Systems or by some kind of

Database package.

- Requires professional to develop the systems and maintain the same.
- Planned training required for the users which form a part of the systems implementation.
- Hardware is usually maintained by the vendor / supplier, alternatively, by high level professional agency.

MIS and other applications development requires much more time and efforts. And even subsequent operation and maintenance of the systems demands efforts of the trained personnel on continued basis. Beside the hardware / software maintenance, the operations includes housekeeping and back-up as a major activities of the day.

d. Mainframe / Large Systems

All the aspects are similar to Super-Mini Systems except the scale of operation is much higher and therefore, requires more number of professionals at various levels of systems management. Over and above, the regular operations demands systems administration as a more defined and formal function. Hardware maintenance is invariably by the manufacturer or their authorised agency. Hardware being

more environment sensitive, infrastructure maintenance is also part of the maintenance.

#### 2.6.0 MANPOWER AND TRAINING

Manpower requirement could depend on various factors listed in Chapter-1, of 3D-Interface. Here, it would be worth remembering that manpower is one of the dynamics since the software project period would also depend on available manpower and on its professional training background.

It is also treated as dynamics since as a part of MIS implementation, user training and their background would decide about what level of sophisticated systems would be possible to implement.

Thus, manpower and their training is a dynamics in the process of systems design, development and implementation.

#### 2.7.0 CONCLUSION :

The following contribution is derived from this chapter.

MIS Dynamics is an exhaustive list of all variables that give the impact on MIS design or its implementation. Here major aspects associated to MIS design and implementation are discussed with the approach of achieving total clarity on the related aspects. The contribution in this presentation is



Macro and Micro view of all the connected issues which would provide good reference guide for any analyst working on MIS.