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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice to ensure transparency and accountability.

2. The second part outlines the procedures for handling discrepancies between the recorded amounts and the actual cash flow. It suggests a systematic approach to identify the source of the error and correct it promptly to avoid any financial misstatements.

3. The third part provides a detailed breakdown of the monthly budgeting process. It includes a table showing the allocation of funds across various departments and projects, ensuring that resources are distributed efficiently and effectively.

4. The final part of the document concludes with a summary of the key findings and recommendations. It stresses the need for continuous monitoring and reporting to maintain the highest standards of financial management and operational excellence.



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Consultation Panel on the Use of Management
Information Systems (MIS) for Raising
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THE FLEXIBILITY AND CAPABILITY TO DEVELOP AND IMPROVE
MANAGEMENT INFORMATION SYSTEMS^{1/}

by

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AIM

This talk will introduce the concepts outlined below in brief manner, highlighting the key points. Various charts and models of simple to sophisticated applications will be shown, thereby stimulating the participants to engage in a thought-provoking discussion.

GENERAL OUTLINE

1. Definition of various levels of MIS
2. The need to define a basic philosophy of the work to be done and how to organize same.
3. The requirement for a general systems concept which can maintain homeostatic equilibrium in the organization.
4. The generation of understanding with management to foster MIS concepts.

Examples will be shown how MIS ideas can be realized in practise starting from very basic organizational levels and progressing to highly interactive models.

**The Flexibility and Capability
to Develop and Improve
Management Information Systems**

Synopsis of talk

1. Relative levels of "MIS" - Management Information Systems

When people talk about "MIS" - Management Information Systems - there is seldom a clear understanding as to what is meant, because the subject is so vast and multi-faceted.

Do we mean an information system designed only for managers? If so, which managers? At which levels? And what about the word INFORMATION itself? What kind of information are we talking about? Production, Sales, Purchasing, Personnel - - - or all of them??

Does the same information always serve everyone, or must we make it discrete? If discrete, who determines the criteria?

Are we talking about a computer supported MIS, or can it also be manual?

Dozens of such questions can be raised which forces one to try to define the main levels of MIS. I would say that there are 3 main levels of sophistication:

Level 1 Plain "Management Information System" - MIS

AIM: Development of a communication trail from all those activity areas which management has defined as being vital, and holding sufficient information content to enable management to reasonably guide the course of the enterprise.

MAIN FEATURES:

- data is well defined, controlled files, but without any effort to systematically reduce data element redundancy.

- a reasonably well planned report system
- good forms control
- well planned structure and organization concept for the enterprise.
- good quality of personnel in all the top and most of the middle and lower management levels.
- positive top management which actively supports MIS

Level 2 Integrated Management Information System "IMIS"

AIM : Integration of the various communication trails with predetermined consideration of which types of information serve whom best so that the total information load is balanced and coordinated.

MAIN FEATURES: all the features of Level 1 plus

- a far reaching optimization of the data bank
- exact control of EDP operations
- highly defined and well planned report system
- high degree of discipline in the operating levels of the enterprise
- high quality of systems and organization personnel
- teamwork concept between upper and top management
- strong goal-oriented leadership philosophy

Level 3 Integrated Management Decision System "IMDS"

AIM: Attainment of a level of support and guidance which includes the use of scientific capabilities such as Operations Research, Simulation, Statistical Modelling, Computer Aided Design and the like.

MAIN FEATURES: all the features of Level 2 "IMIS" plus

- a revamping of the old organizational structure to mesh with the requirements of IMDS
- definition of decision criteria for the various levels of managers

- systems analysis using decision tables to support organizational predetermined behaviour patterns
- highest class personnel in systems design with practical and theoretical knowledge.
- talented EDP specialists with outstanding hardware and software capabilities.
- a very well (re)designed and perfectly controlled forms system, information concept, data bank and reports method
- a fully transparent structure which can be modified to meet new organizational needs as they arise
- a first class team spirit among the middle, upper and top management levels with well defined career planning which also involves the lower level management and the union representatives.
- a harmonious, easy going leadership style which demonstrates self-confidence.

2. Basic Philosophy of Organizing Work

This often appears - at first glance - to be such a primitive subject that we can all skip it. The very simplicity of the idea is what causes the problem - not always at the first level, but certainly as the work progresses through various functional stages and as control is applied at different hierarchical levels. A small mistake in organization at Point A can have a devastating effect on costs and performance by the time it reaches Point Q, so it pays to consider how we wish to organize our work. Regardless if we are part of a Ministry, factory, hospital or university one must start with a definition of what work is to be done at all, and justify same.

Then consider the amount of effort - man-machine combinations - which will be needed to accomplish the defined tasks.

Then - how should the work flow be organized? Where are the security measures and back-up systems? Where and how can productivity be monitored?

Answers to all these points are required before we embark on any kind of MIS project, otherwise there can be a disaster. A logical, clear foundation for all the main communications in the organism is paramount, so our first task is to build the necessary stability of the communication network.

Note that this basis is mandatory simply to carry on the activity at hand correctly. How to mutate this activity to enhance our position, or simply to improve our potential for survival is a matter for more elaborate thinking.

3. The Requirement for a General Systems Concept

We do not only face the problem of keeping a certain activity of an organism going along a defined way, but we also have to be in a position to provide controlled mutation of our activity.

Here we need to know the role of homeostasis which is very well explained by Stafford Beer in his book "Decision and Control" (Chapter 12 - Coping with Complexity). Homeostasis, he says, is that feature of an organism which holds some critical variable steady within physiological limits.

Social organisms have to rely just as much on built-in homeostats as do biological systems. But whereas we as humans are born with a regulatory system to take care of blood temperature, tempo of heartbeat, respiratory cycle etc., in social organisms these mechanisms must be built in artificially to keep the enterprise alive and functioning. How well they function is directly related to the imagination, capability and/or insight of the various managers to consciously apply cybernetics concepts to their problems of growth and organization.

To design a communication concept correctly we must learn to envisage how managers can evaluate future trends with alternative options of action. We must ask of ourselves: "Are there criteria known and defined in the MIS concept which will serve to give managers the information they not only need now, but which allows them to simulate new situations?"

Examples:

"If our energy costs increase by (10%) (12%) (15%) in 1977, what effect will this have on the cost of our various products?"

or

"We now use material X in our products. If we would replace this by material Y what would be our new unit cost of production?"

Both questions require the ability of a computer to access the product file with programs to compute the proportional energy content of each product multiplied by the price increase projection and so recalculate the cost per product.

The same applies to the material substitution. The bill of materials file specifies each product where material X is present. The material cost of X can be computed vs. the substitute material Y.

Such are the requirements for simulation which must be foreseen and planned years before the manager can hope to get his answer by "pushing the button".

Designers of management information systems must be able to peer into the future to the extent that they know how to cope with change ! They cannot, of course, know the answers. But they do have the knowledge to improve the predictive capability of managers - provided the statistical parameters are correct, the programs exact, and the data base with which they work is of good quality.

4. Generating Understanding with Management

This should be the easiest job around - but it isn't.

Many managers, even though they may be well educated and experienced, are loath to go along with MIS concepts. Most of the time they are simply unwilling to "rock the boat".

Or they are so buried in administrative trivia that they cannot rise above their desk level to catch a glimpse of the big picture.

Or, if they permit themselves to be shown the possibilities of MIS, IMIS or IMDS, they think it is all Utopian and only confirm to themselves that the systems people must be mad!

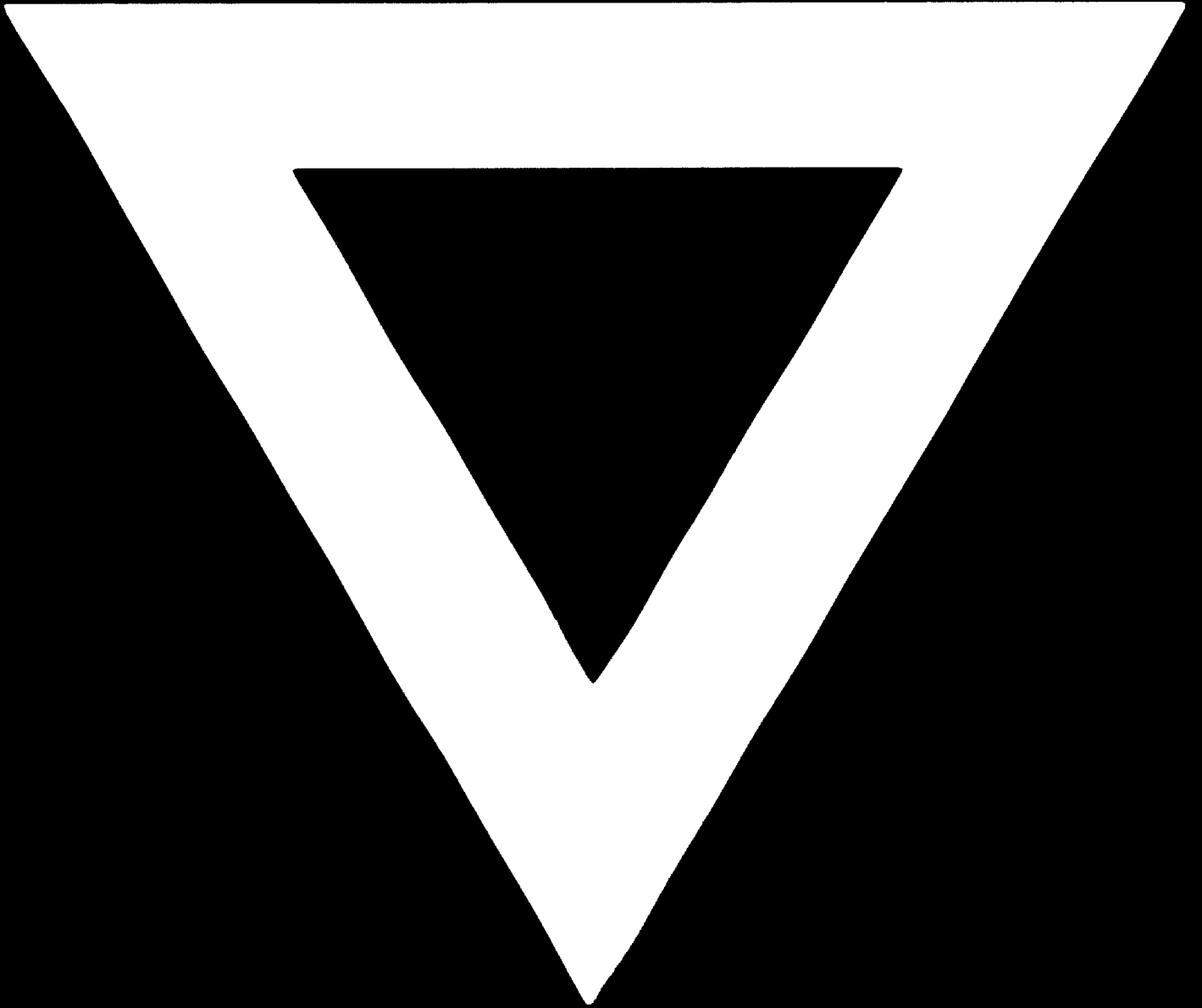
Information systems CAN succeed, but only in a favorable climate. This means 100% backing by top management and as high a percent of the others as you can get.

All too seldom will this climate be initiated by management; usually it will be the task of the dedicated systems designers, scientists, operations research specialists, data processing chiefs - or consultants - to try to appeal to management for the necessary understanding to develop reasonable information systems.

If this understanding can be attained, then it remains for the ingenuity of management and systems people working as a team to design and install a viable and efficient management information system to support and enhance their organization.



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