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ESTABLISHING A MANAGEMENT INFORMATION SYSTEM- AN OVERVIEW

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Abstract – Management Information system (MIS) focuses on the management of information technology to provide efficiency and effectiveness or strategy decision making. The concept may include systems termed transaction processing system, decision support system, expert system, or executive information system. The term is often used in the academic study of businesses and has connections with other areas, such as information systems, information technology, informatics, e-commerce and computer science; as a result, the term is used interchangeably with some of these areas.

There are different areas of concentration with different duties and responsibilities in information system managers starting from the Chief information officer (CIOs), Chief technology officer (CTOs), IT directors and IT security managers. Chief information officers (CIOs) are responsible for the overall technology strategy of their organizations. Basically, they are more of the decision makers and action takers when it comes down to determining the technology or information goals of an organization and making sure the necessary planning to implement those goals is being met.

The term information system usually refers to a computer-based system, one that is designed to support the operations, management, and decision functions of an organization. Information systems in organizations thus provide information support for decision makers. Information systems encompass transaction processing systems, management information systems, decision support systems, and strategic information systems. MIS professionals help organizations to maximize the benefit from investments in personnel, equipment, and business processes

Key Words: IT, CIOs, CTOs, T & V extension system

INTRODUCTION

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Information consists of data that have been processed and are meaningful to a user. A system is a set of components that operate together to achieve a common purpose. Thus a management information system collects, transmits, processes, and stores data on an organization's resources, programmes, and accomplishments. The system makes possible the conversion of these data into management information for use by decision makers within the organization

DATA VERSUS INFORMATION

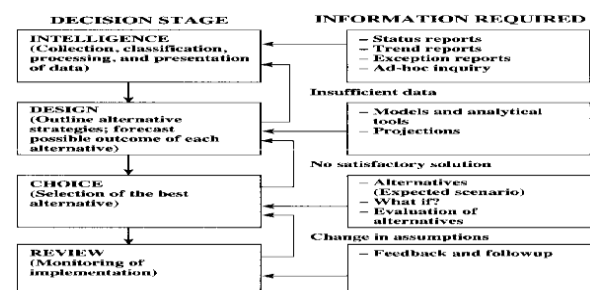
Data refers to raw, unevaluated facts, figures, symbols, objects, events, etc. Data may be a collection of facts lying in storage, like a telephone directory or census records.

Information is data that have been put into a meaningful and useful context and communicated to a recipient who uses it to make decisions. Information involves the communication and reception of intelligence or knowledge. It appraises and notifies surprises and stimulates, reduces uncertainty, reveals additional alternatives or helps eliminate irrelevant or poor ones, and influences

individuals and stimulates them to action. An element of data may constitute information in a specific context; for example, when you want to contact your friend, his or her telephone number is a piece of information; otherwise, it is just one element of data in the telephone directory.

Computers have made the processing function much easier. Large quantities of data can be processed quickly through computers aiding in the conversion of data to information. Raw data enter the system and are transformed into the system's output, that is, information to support managers in their decision making.

ROLE OF INFORMATION IN THE DECISION PROCESS.



Each of these databases can be summarized and converted to single tabular presentations of information of interest to management. When information from two or more time periods is compared, trends can be observed.

This system goes one step further in the process of decision making and incorporates the value system of the organization or its criteria for

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choosing among alternatives. An extension organization's values are many and varied. They include concerns for resolving farmer problems, increasing and providing for stability of farmer incomes, and improving the quality of farm life. But they also including and providing for stability of farmer incomes, and improving the quality of farm life. But they also include an intent to provide well for staff members (training, adequate salaries, etc.) and to aid in the process of bringing about rural economic development.

INFORMATION GROUPS IN INDIA'S AGRICULTURE EXTENSION SYSTEM.

		and evaluation of activities completed
State	Director of agriculture, additional director, joint directors, etc. of the state department of agriculture	(1) District wide information on extension programmes, activities, expenditures, etc (2) Research-extension linkages and coordination with other allied departments such as animal husbandry and horticulture
District	District agricultural officers (DAOs)	(1) Information on extension resources and constraints at subdivision and block levels (2) Training requirements of staff at

Levels	Groups	Types of Information Needed
Central	Extension commissioner, joint commissioners, directors, joint directors, etc. of the directorate of extension, ministry of agriculture	(1) Information on human resources, plans, and budgets for various extension services (2) Statewide monitoring

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		subdivision and block levels
Subdivision	Subdivisional agricultural officers	(1) Field demonstration programmes, activities planned and implemented by subject-matter specialists (SMSs) (zone) at the block level (2) Technical programme and constraints identified at the block level
Block (county)	Agricultural extension officers	(1) Performance of VEWs in terms of achievements in extension activities (2) Field-level problem of assessment of beneficiaries' response to

		various extension programmes
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Information regarding these various attributes helps managers to make more enlightened decisions.

ROLE OF MIS IN THE MANAGEMENT OF AGRICULTURE EXTENSION PROGRAMME

National agricultural extension systems, especially in developing countries, tend to be very large. For example, in India, the national agricultural extension system employs about 125,000 people. Extension managers at various levels need relevant information in order to make effective decisions. In the absence of such information, they act only on the basis of their intuition and past experience. Data that have been processed, stored, and presented properly will aid them in analysing situations and to make effective decisions.

The main purpose of management information systems is to provide management information to decision makers at various levels in the organization. Specifically, in an agricultural extension organization, MIS is needed:



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1. To plan the most effective allocation of resources, for example, the allocation of extension personnel under a T & V extension system, the need for communications and training equipment and facilities, mobility, the amounts of required operational resources
2. To choose between alternative courses of action, whether to conduct a study on the impact of the T & V system with the resources on hand or hire an expert to investigate
3. To control day-to-day operations, for example, comparing the actual results achieved and those planned under the T & V system.

DESIGN OF A MIS IN AN AGRICULTURE EXTENSION ORGANIZATION

The following are suggested steps to follow when designing a MIS for a national agricultural extension system.

STEP ONE: ASSESSING INFORMATION NEEDS FOR PLANNING, MONITORING, AND EVALUATION

An investigation needs to be conducted into the types of decisions that extension managers have to make. For example, village extension workers (VEWs) seek solutions to their problems from their supervisors. In turn, supervisors need to be in a position to resolve these problems and to document how problems were solved for future reference.

State-level managers also need information to resolve problems. They are concerned with implementing extension programmes district by district. They need information on staffing, transport, research-extension linkages, staff training activities, and successes (or lack of them) in solving technical problems. Feedback is needed from field staff and farmers on farmer problems and on which recommended practices are helpful. State-level managers need to know something about the amounts, kinds, and combinations of media support (i.e., print, radio, television) that have been used for various efforts.



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STEP TWO: DECIDING THE LEVELS
GROUPS, INFORMATION GROUPS,
INFORMATION FREQUENCY AND CONTENT

STEP THREE: ENSURING SYSTEM
FLEXIBILITY AND ADAPTABILITY

Data processing consists of identifying each item of data and systematically placing it within a scheme that categorizes data items on the basis of some common characteristic or feature. Data not organized into a meaningful pattern can serve almost no useful purpose to those who must use them to make decisions. A computer can help in processing the data effectively. Storage media are materials such as ordinary office paper, magnetic tapes, magnetic disks, microfilms, film strips, and a few other devices. Once the information is recorded on these storage media, the system can generate, on demand, information required for making decisions, solving problems, or performing analyses and computations. Information retrieval refers to the ability to take different types of data in the storage media and to array information in some desired and meaningful format.

Flexibility means the ability to retrieve information from a system in whatever form it may be needed by decision makers. Therefore, data need to be collected in some detail so that they can be rearranged or summarized according to the needs of managers. But system design should not be too complex because it must first serve the needs of the lowest levels of management (i.e., sub district) that are likely to be instrumental in collecting important components of the original data. In addition, the system also must serve the needs of the district, regional, state or provincial, and national levels. Therefore, considerable care must be taken in assessing what types of information are required by management at the different levels. At the same time, effort must be made to ensure that the information collected meets acceptable standards of accuracy, timeliness, and coverage for each level.

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NEED FOR AUTOMATION

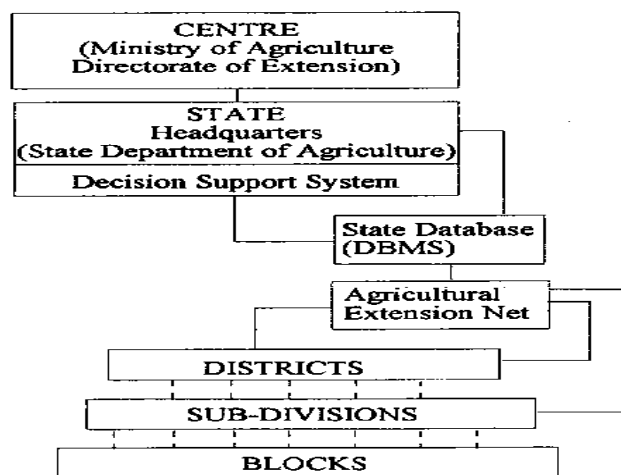
An automated MIS system contains data just as a manual system does. It receives input, processes input, and delivers the processed input as output. Some input devices allow direct human-machine communication, while others require data to be recorded on an input medium such as a magnetizable material (specially coated plastic flexible or floppy disks and magnetic tapes). The keyboard of a workstation connected directly to a computer is an example of a direct input device. Use of automation makes it possible to store immense quantities of information, to avoid many of the errors that find their way into manual records, and to make calculations and comparisons that would be practically impossible in a manual system.

END -USER COMPUTING

The widespread use of personal computers and computer-based workstations has brought with it the age of end-user computing. End-user computing is a generic term for any information-processing activity performed by direct end users who actually use terminals or microcomputers to

access data and programmes. The manager as end user may be provided with powerful software (like DBMS) for accessing data, developing models, and performing information processing directly. They may write programmes, or may often use ready-made programmes stored in the computer, using the computing power of a local PC or the mainframe to which it is connected.

A TYPICAL MIS FOR A NATIONAL EXTENSION SYSTEM.



SUMMARY

We have defined and described the basic concepts of a management information system. The characteristics of good information, namely, relevance, timeliness, accuracy, cost-effectiveness,



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reliability, usability, exhaustiveness, and aggregation level, have been described. The role of informationsystems in the process of decision making and the value of information have been explained. Four types of MIS, namely, databank information system, predictive information system, decision-making information system, and decision taking information system, have been presented. The role of MIS in management of agricultural extension programmes and the conceptual design of a MIS in an agricultural extension organization have been described.

Basic computer concepts have been explained. The advantages and disadvantages of centralized versus decentralized systems have been examined. The need for organizing databases and their integration and the need for programmes for decision analysis to evolve a decision support system have been explained. An assessment of hardware, software, and networking requirements for a typical computer-based MIS for a national agricultural extension system have been illustrated.

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