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Information Technology for Management and Decision Support Systems

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Abstract: Management is not restricted to the business world organizations. Any organization whether it is large corporation, government agency, and educational institution or volunteers society requires information to control resources and achieve goals. If and when they are in position to manage others, information technology can help the organizations to plan, organize, direct, and control activities. While computers are not magical solution to every problem, information technology is a power full tool for effective decision making. Organizations vary with their present use of computers in Management Information System (MIS). Some exclusively use data base programs, while other still keeps data by hand. This paper will focus on using computers as a part of management information system, which includes people using management information, data for management information, organizing data into reports and decision support systems.

Key Words: Profitability, Foundation Production, Strategic Decisions, Tactical Decisions, Encapsulates

Introduction

Information is a strategic resource for any organization. It is management's role within an organization to use this information to plan events, solve problems, and supervise people. Much of the data from which useful information is derived comes from day-by-day activities for example, the number of patients served (hospital) sales made (restaurant), or emergency call (fire station). A Management Information System (MIS) is the collection of systems, both computerized and manual, that provides information about on going activities to an organization's decision-makers.

Every organization has a MIS whether they know it or not. The secretary with last year's employment Tables is part of the MIS. So are the contents of a manager's file drawer or a database. A businesses annual report, a school's graduation list, or the telephone trees for a volunteer agency are all-important parts of a MIS for their respective organizations.

File processing system were a partial solution to this organization problem, but using separate files made it difficult for managers to obtain related data and keep it updated. Eventually, the volumes of information were more than many file-processing systems could handle. Many organizations now use database programs to integrate their data files and plot data relationships, making information more accessible. Organizations vary with their present use of computers in MIS. Some exclusively use database programs, while others still keep data by hand this paper will focus on using computers as a part of management information system (Mahar. F., 1996).

Management Information used by People: Management in any area needs information to operate. Administration, counseling, engineering, accounting, manufacturing, marketing, education, personal, public health, and sales are all information –intensive activities. Although the types of information needed are different for each area, the decisions have several features in common (Mahar. F., 1996).

In general, the amount of detail included in computer-generated information varies with the scope of decision making to be supported. That is, some management decisions demand immediate attention, yet are short-term in nature, and require highly detailed information. Sweeping decisions that will have long-term effects on the organization usually are supported by less-detailed information covering a large area of interest. For example, a retail store supervisor responsible for the sports department may receive and use detailed computer output showing every sale of equipment stored by model and size.

A store manager working at next management level might want to know only the total sales figure for single department, as compared to sales for other department, and total sales for the entire store. At this level the information is used to determine how much space to allocate for individual department and to decide upon the size of its staff and the value of its stock.

A head quarter for a chain of stores, upper-level management may require only summaries of store – wide Tables. The job of top manager is to monitor overall profitability, so an executive may not know what is happening in the individual departments. In this sense, information content is for less detailed. But the scope of information is far greater; involving perhaps hundreds of stores.

This comparison highlights the value of information as a management tool. Problem solving tools, including computers must be design to match information with the responsibilities of the individual and the decisions that he or she makes.

Data for Management Information: Information is gathered during different part of the transaction cycle. The transaction cycle is the input, processing, output, and storage of a single transaction. Any system that oversees this process is known as transaction processing system. Whether processing involves completing a single customer order, manufacturing one car, or registering a single student, processing each transaction generates data for the MIS. This represents the day-to-day activities of an organization and is the foundation for any MIS (Norton's, 1995 and Krasnewch, 1994).

An Organization can Divide Data into Four General Areas:

Financial: Financial data includes Tables about how the organization's resources translate into money. This would encompass data on organization profit and loss, assets and liabilities, and other resources of value.

Personnel: Information about employees and their productivity would be included in personal data. Not only the list of employees, but Tables on absenteeism and retirement may be important to management.

Research: Analysis of past performance and plan for future projects is research data. For example, colleges plan how to recruit certain types of students.

Production /Sales: Involves the numbers about the actual product made, product sold, or services provided.

Organizing Data into Reports: The organization of the data and the design of associated reports are a critical is the successful use of a Management information system. Effective reports are designed to reflect the types of data needed at each management level. Reports are either scheduled routine use or produced on a demand basis. Since the problems at management level differ, so does the presentation of information. Report formats generally fall into one of three categories: Detailed, Summary, and exception reports.

Detailed reports are used by front line management to examine day-today operations. A teacher will use a detailed class report that lists students enrolled in a class. Each students name and number are displayed on a separate report line.

Detailed reports usually contain one printed line for each item in the database or file. The departmental store supervisor would use a detailed inventory report to examine the status of each item sold in the department. The report in Table. 1 contains the description of items, stock on hand, stock on order, and sales. By using this report, the supervisor can make operational decisions about what stock to order or which merchandise to stop selling.

Table 1: Detailed Report Provide Front Line Managers with Specific Data Needed for Day to Day Decision

No.	Product Description	Stock On Hand	Stock On Order	Stock Below Recorder Point
1101	lather basket ball	12	0	*
1102	lather foot ball	3	6	
1103	8.ft. Jump Rope	24	0	
1104	12ft. Jump Rope	19	0	
1105	Badminton Brides	2	15	*

Tip-Top Stores
Detailed Inventory Report, Department: Sports

When large amount of data need to be analyzed, it is not usually practical or necessary to see all of it at one time. In these situations a summary report is used. Summary reports condense day-to-day operational data into totals.

Comparing trends in summarized data can make some tactical and strategic decisions. Summery reports that shows total store sales over several years would help department store executives decide when to close or expand stores. A university department chairperson can prepare for top management a request for additional facilities by looking at summaries of classroom and laboratories (Table. 2).

Table 2: This Summary Report Encapsulates Data Results to the Utilization of Dozons of Rooms over Several hours

Hours	Classroom Utilization	Laboratory Utilization
7-8	5%	45%
8-9	60%	95%
9-10	100%	100%
10-11	100%	100%
11-12	100%	100%
12-1	96%	95%
1-2	98%	100%
2-3	80%	100%
3-4	60%	100%

Balochistan University of Engineering and Technology
Summery of Facility utilization report Date: June 5, 2001

Exceptional reports, like summary reports, results from processing data. Comparisons are used to produce exception reports, which identify departures from normal operations or contain only the data that meets specified conditions. Exception reports can highlight negative and positive trends. A university may produce a exception report listing the names of alumni who have contributed over RS. 10000.00 (Table. 3). The university president would be delighted to see that this expansion report contains more large contributions than reports from previous years.

Table 3: Exception Reports Focus Attention on Situation Needing Immediate Action

Name	Contribution	Alumni
Ms. Nadia	10050	71
Mr. Bakar	21000	67
Mrs. Bakar	20000	69
Mr. Stanley	15000	76
Mr. and Mrs. Edward	50000	63/58

NED University of Engineering and Technology
Gold star Contributors (Over Rupees 1000.00)

Decision Support Systems: Important decisions made in organizations may require more information than a MIS can provide. Managers are expected to make intelligent guesses on how today's conditions will affect tomorrow's productivity. They can get help with this problem in two ways; first, managers can use queries to access relevant data from a MIS database. Second, computer professionals help managers create a model or mathematical representation of the

problem. When these elements are brought together to aid in log range planning, they become the foundation of a decision support system. A decision support system is real time computer system that aids managers in solving problems through quarries and modeling. Decision support system designed specifically for strategic decisions by top-level managers are called executive information systems (Krasnewch, 1994).

Conclusion

Information technology is important for the successful operation of any organization. Decision-makers use information technology to over see what is happening in their organization.

For strategic planning it is also necessary to anticipate what is going to happen. As a result, future problems and need are examined with the help of decision support systems.

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