SYSTEMS MANAGEMENT - WHAT IS IT?

*an approach to the
management process
of complex
organizational relationships*

LLOYD L. BYARS
*Department of Management
Georgia State University
Atlanta, Georgia*

The growing size and complexity of businesses are becoming ever increasing problems in the decision-making process. Larger and faster computers are providing volumes of information. But many businessmen lack the knowledge to use this information most effectively.

Another problem of large scale businesses and of many small businesses is the hesitation of managers to share information with other departments. This departmental gap means that much useful information is not available to those managers who could best use it, and some information is repeated at unnecessary expense to the company. Systems management seems to offer the means of solving these problems.

Systems management is defined as the coordination of informational flows among the functional areas of business as an aid in the decision-making process. Under this concept, managers may cross traditional departmental lines and focus on patterns of information flow through the organization. Quantitative techniques and computers are vital tools used in systems management for simulating alternative decisions. To understand fully the meaning of systems management, it is first necessary to understand the terms system and management. A system is a network of items which interact with each other and together make up a unified whole. In a corporation it is necessary for each item of the network to be properly identified as to function and purpose in conjunction with all other items. Management is defined as a type of work that involves the guidance or direction of a group of people toward some predefined objective within a company. The management process involves the use of the following four functions: planning, organizing, motivating and controlling.

SYSTEMS MANAGEMENT AND THE MANAGEMENT PROCESS

The term systems management is easier to analyze when the analysis is divided into the functional areas of the management process.

Planning — Management must decide, through planning, the goals or objectives the company as a whole will pursue. The following quotation from a book by Richard Johnson provides an explanation of the way in which systems management relates to the planning function of management:

> The systems concept in business planning should start with the awareness of the need to think of several levels and the integration of these into a hierarchy. One useful way is to consider the three major systems which are paramount for any business organization:
>
> 1. The environmental system — sets forth the broad social, cultural, political, and economic parameters in which the business must operate.
>
> 2. The competitive system — describes the industrial structure, competitive relationships, and produces — customer relationships for the particular industry in which the company competes.
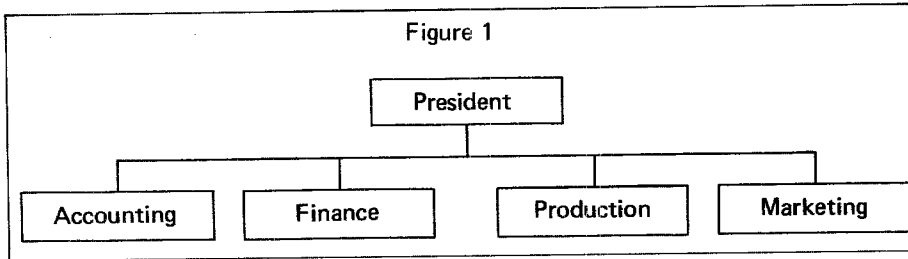>
> 3. The internal organizational system — indicates the organizational structure, objectives and policies, and functional relationships which make the business a unique system.
>
> Effective business planning should receive informational inputs from each of these three systems and translate them into plans of action.[1]

Organizing — Traditionally, business organizations have organized by determining the jobs to be performed, the relative job positions for these tasks, and the authority and responsibility delegated to each position. The formal block diagram organizational chart reflects this type of organization. There are many inherent problems to this type of organizing. The following traditional principles of organization provide a good foundation but they fail to explain how these goals are to be achieved:

1. Make adequate provision for all activities.
2. Departmentalize activities using some logical basis.
3. Limit the number of subordinates reporting to each manager.
4. Define the functions of each division.
5. Delegate authority whenever possible.
6. Equalize authority and responsibility.
7. Provide controls over those to whom authority has been delegated.

Figure 1

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                    President
        ┌──────────┬───┴────┬──────────┐
   Accounting    Finance  Production  Marketing
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Figure 1

8. Avoid dual subordination.

9. Line authority, functional authority, and staff relationships must be clearly distinguished.

10. Develop lines of coordination.[2]

For instance, assume that a small organization is organized as shown in the diagram in Figure I.

As the organization grows, additional departments are added, and additional functions are added to existing departments. Sometimes these additions or changes are made to meet new business needs. Sometimes they are made to take advantage of a manager's particular combination of talents. And sometimes the changes are made merely to adjust to the personalities of individual managers.

The systems approach to management tries to avoid this problem by focusing on the dynamic interaction among the components of the system. Systems theory puts the separate departments of an organization second to the decision-making information and communication networks.[3] This is the basic difference between the two theories of management.

Motivating — Many managers feel that the concept of systems management fails to deal with the important personal relationship between manager and subordinate. Computers, quantitative techniques and information flows seem to ignore the personal relationship between people. However, systems management cannot be implemented without the support of all the people involved.

In an article, "Practical Slants on Operations Research," the example is cited of an OR system imposed on an operating management which did not help with its design. Most businessmen are aware of how even the best of plans can be cleverly sabotaged by a group of unwilling personnel who are afraid that the new plan threatens their jobs and are insulted that they were not asked to be a party to the plan. The personal conflict is not the only issue however. When operating management is not actively engaged in the study, there is substantial reason to believe that the proposed methods of the system will not be comprehensive or flexible enough to handle the inevitable exigencies.[4]

In another article, "Quantitative Decision Tools and Management Development Programs," another example of non-motivation is presented. A large manufacturer recruited several mathematicians to staff its OR group. One of the first projects of this group was to impose production scheduling on various machines processing a variety of grades of finished product. The OR group was extremely enthusiastic and worked hard at the job, but their efforts were thwarted by the refusal of several key production managers to cooperate in providing essential data. The unwillingness of the production people to help with the project led to the resignation of several of the OR people and the demise of the project itself. Six years later the project was renewed. The new director of the group succeeded in selling the value of the study to key management. Two years later a production scheduling system was implemented which saved the company an estimated $70,000 per month the first six months in operation.[5]

Many more examples such as this could be cited. Probably the reader is aware of similar problems in his own company. It is wise not to ignore the people of the organization. The managers and opera-ting personnel must be motivated if systems management is to succeed. By seeking the cooperation and active participation of managers and operating personnel, the instigator of the systems management approach can avoid the fear of and possible fight against his projects.

Intuitively it would seem that systems management can motivate the manager and aid in motivating subordinate managers by allowing the manager to see his job in relation to the whole organization. Established information flows give him more and better information to use in making his decisions.

Controlling — The following elements of control within a business are outlined in a book by Newman and Sumner:

1. Standards that represent desired performance — Standards may be specific or vague, written or unwritten, but until all personnel concerned are aware of the standards, control will create confusion.

2. Comparison of results against standards — After the comparison is made the results of the evaluation must be given to the people who can do something about it.

3. Corrective action — If the evaluation points out that results are not up to standard, corrective action must be taken in order that the standards be preserved.[6]

Systems management provides all levels of management, through the network of information flows, with the ability to provide and implement control. Information is provided to determine if standards are being met, and alternatives are presented to aid the manager in determining the corrective action to take if the standards are not met.

COMPUTERS, QUANTITATIVE TECHNIQUES

Systems management has grown and almost paralleled the growth of computers and quantitative techniques in management. In fact, many people believe that computers and systems management are essentially the same. Systems management, however, relates to the total decision-making process and not to the hardware or even the meth-

odology used. Computers and quantitative techniques do, however, play important roles in the decision-making process. As mentioned earlier, computers increase a manager's capacity to make more effective decisions by improving the quality and quantity of his information. Quantitative techniques are helpful in evaluating the information provided by the computer. Statistics, for example, is used to examine the volumes of data provided by computers. Mathematical models, developed with the aid of quantitative techniques and computers, are being employed more and more as an aid in management decision making.

In summary, Arjay Miller, former president of Ford Motor Company, describes the direction of management decision making in the following excerpt from an article by Max Ways:

> Hunches and cut-and-dry methods are giving way to the systems-analysis approach, a whole new way of perceiving problems and testing in advance the consequence of alternative actions to solve those problems. Computers and other technical devices, including mathematical models, have extended greatly our ability to understand and cope with the complex problems we face in today's world.[7]

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NEW LEADERSHIP ASSUMES ASTD REINS

A new Board of Directors and Division officers assume the leadership of ASTD this month as the Society launches its administrative year with many innovations planned for 1972.

In 1972, John S. Jenness will guide the Society as president. Mr. Jenness outlines some of the major changes for ASTD this year in his "President's Page" article on page 2 of the *Journal*. He is director of manpower planning and development for Consolidated Edison Company, New York, N.Y.

In his 17 years of membership, Mr. Jenness has belonged to four chapters — Maryland, Connecticut, New York Metropolitan, Long Island — and was the first president of Long Island Chapter. He has served national ASTD as a regional vice president, national vice president, secretary and president-elect.

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