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Articles in the field of agricultural economics, suitable for publication in the journal, will be welcomed.

Articles should have a maximum length of 10 folio pages (including tables, graphs, etc.) typed in double spacing. Contributions, in the language preferred by the writer, should be submitted in triplicate to the Editor, c/o Department of Agricultural Economics and Marketing, Pretoria, and should reach him at least one month prior to date of publication.

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2001

PRINCIPLES OF RESOURCE CONTROL AND ALLOCATION WITHIN THE ENTERPRISE

by

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1. Object of this paper

The object of this paper is to discuss briefly some of the areas where the science of management can make a contribution to improved utilisation of resources in agriculture.

I shall indicate, firstly, that the economic theory of the enterprise is too limited to provide solutions as regards the internal management of the enterprise. I shall then discuss the management theory of the enterprise and how it can help to provide a clearer picture of the internal structure of the enterprise. The discussion will be confined to principles; no attempt will be made to discuss the methods of allocation and control of resources.

2. Economic theory of the enterprise

The classical economists were interested chiefly in the marketing system and the way it allocated resources. They were not interested in the combination or the organisation of those resources after allocation, because they believed that competitive pressure would force the enterprise to function at maximum efficiency. It was for this reason that the classical economists left the internal organisation of the enterprise out of account in their theorising, and never seriously considered administrative authority as a possible alternative to the market mechanism. The enterprise responded passively to developments in the market.

Later contributors of this school expanded the economic theory of the enterprise from decision-making on purely price-quantity adjustments, by adding promotion and product differentiation adjustments to the theory. Although this does represent an expansion of the theory, it still means that decision-making is restricted by the market. That is to say the emphasis still falls on the way the market is organised rather than on the internal organisation of the enterprise. Because external conditions restrict the entrepreneur's field of action, decision-making may be reduced to the choice of the type of industry to enter.

There is no theory of organisation, since the market destroys any enterprises that are not efficiently organised.

There is no theory of information, since in a purely competitive situation it may be assumed that the most important information is common knowledge.

The information to which the entrepreneur responds relates to the profit margin within various industries and is widely known.

Further information, such as production factor prices and product prices, is supplied by the markets and it is assumed that the entrepreneur will organise his resources in the most effective way in order to maximise his profits.

The traditional theory allowed the entrepreneur one additional area where he had freedom of choice. Within the bounds of the restrictions mentioned, he could take an independent decision to innovate. The rewards of a successful innovation were considerable, since this type of decision, taken from inside the enterprise, had a definite effect on the limitations of the environment and therefore gave the innovator more market freedom. In practice the enterprise enjoyed a temporary monopolistic advantage as a result of a successful innovation. This monopolistic advantage gave the entrepreneur more freedom in decision-making. Successful innovation was, however, rare for a specific enterprise, with the result that the main field of study of the economist remained the market mechanism.

3. Management theory of the enterprise

3.1 Introduction

The theory depends on three factors, namely: the external environment, the internal organisational structure and the communication system. The management theory of the enterprise requires both constant awareness of the composition of the market and

knowledge of how the enterprise is organised. The manager replaces the market as the key element.

This means that the management theory deviates from the traditional theory of the enterprise.

There are a number of implicit assumptions upon which the traditional theory rests and which have to be modified to serve as a basis for a management theory of the enterprise. These traditional assumptions are:

1. *The static assumption* – whereby it is assumed that needs, resources and knowledge are given and cannot be changed.
2. *The assumption of independence* – whereby it is assumed that needs, resources and knowledge are independent of each other, and of the activities of the enterprise.
3. *The motivational assumption* – profit maximisation is accepted as the aim of the enterprise.
4. *The information assumption* – whereby it is assumed that there is a well-organised system for the acquisition and communication of the necessary information.
5. *The organisational assumption* – whereby it is assumed that there is a procedure for decision-making and action within the enterprise whereby the decision-making and action of several individuals are related through the maximisation goal of the enterprise.

These assumptions are modified as follows in the management theory of the enterprise:

1. *The motivational assumption* – the aim of the enterprise is assumed to be one of satisfaction or profit maximisation.
2. *The information assumption* – it is assumed that information is normally unstructured, twisted and full of noise and that the acquisition and communication of relevant information within the enterprise is a problem that should be solved internally.
3. *The organisational assumption* – whereby it is assumed that the decision-making process is determined by the organisational structure, which in turn determines the information system.
4. *The growth assumption* – needs, resources, and the state of technology and knowledge are assumed to be both changeable and susceptible to change.
5. *The influence assumption* – whereby it is assumed that needs, resources, and the state of technology

and knowledge are independent of each other and can be influenced by action by the entrepreneur, within the enterprise.

In the management theory, therefore, the motivational, information and organisational assumptions are retained as categories, but the nature and contents of these assumptions are adapted. However, the growth assumption replaces the static assumption and the influence assumption replaces the assumption of independence.

Although there are areas of agreement between the traditional theory and the management theory, such as the fact that in both theories control measures are required to keep the enterprise in equilibrium, there are certain shifts of emphasis. The example of a change in the price of a production factor can be taken as an illustration of such a shift in emphasis. According to the traditional theory this information would automatically lead to a substitution of production factors which in turn would minimise costs and so restore the equilibrium, otherwise the enterprise would go under. In the management theory control measures would also be employed, but they would be internal measures. These measures would be part of the organisational structure and information system of the enterprise and would lead to an internal decision being taken which would restore the balance.

3.2 Levels of management

Three general levels of management can be identified in any big organisation, namely an operational level, a management level (or middle management) and a strategic level (or top management). Figure 1 is a schematic representation of this statement. The lower down the hierarchy one moves the more persons there are performing functions at any specific level and naturally the higher the degree of specialisation. The opposite is also true, namely that the higher one moves up the hierarchy, the less specialised knowledge is required and the greater the need for a more general knowledge of management.

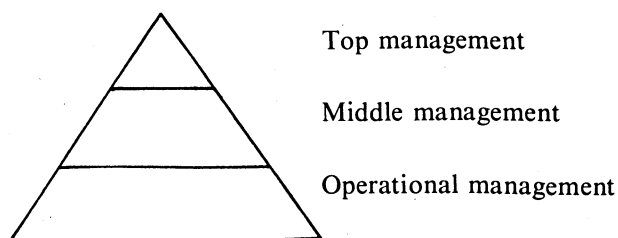


Figure 1: Levels of management

3.3 Nature of and need for information

In the nature of things, the more specialised the function the smaller the field of information that is required and the more detailed that information needs to be. The opposite is equally true, namely that the more general the task (and top management has the most general task) the wider the field of information that is required, but the smaller the amount of detail. This is represented schematically in Figure 2:

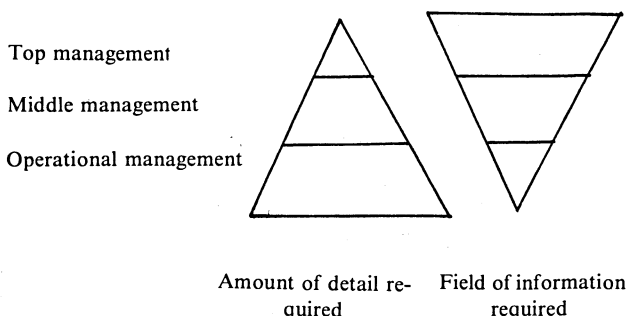


Figure 2: Amount of detail and field of information

How much information is required from outside the organisation also depends on how high up the hierarchy the manager is. In most cases this information cannot be programmed.

The number of persons required at the various levels, and the nature and scope of the information required, can now be schematically represented in one composite diagram, Figure 3.

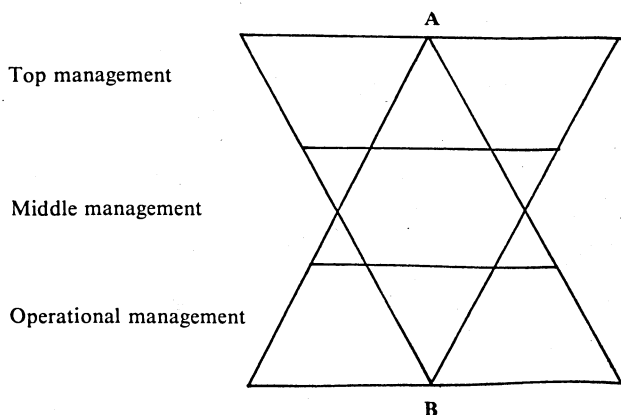


Figure 3: Combined information diagram

The inverted pyramid in Figure 3, i.e. pyramid A, represents the *field* of information and the extent to which information is required from *outside* the organisation, whereas pyramid B represents the number of persons at the various levels and the amount of detail required at the various levels.

3.4 Functions of management

Traditionally the functions of management are considered to be organisation, leadership, planning and control. Spencer and Siegelman¹ reject this definition and say, "Instead of trying to define management in terms of routine functions such as organizing, planning, controlling, etc., we can think of it as an integrated activity in which these functions are not separated."

These writers go on to say that the functions of managers may be classified for purposes of analysis into two distinct levels of activity: "...one is co-ordination; the other is supervision. The co-ordinative function is that of decision making — the process of selecting an action from alternative courses of action. The need for this function is universal, since it arises in environments of risk and uncertainty, that is, in situations where decisions must be made and plans formulated on the basis of expectations." They also maintain that the other activity, namely supervision, involves the carrying out of established plans and therefore requires little, if any, co-ordination of a decision-making nature. According to these writers it is the co-ordinative function of management that is recognised as the central concept of the management theory.

3.5 Decision-making

The decision-making process may be examined in two complementary ways. The first, and by far the more ambitious, is to establish how people in general, and managers in particular, make decisions. The other way is to make a study of alternatives and their consequences and so to attempt to understand the nature and structure of decisions. The rest of this paper will be based on this approach.

Decision-making may be described as a choice between alternatives. The need for decision-making arises because resources such as capital, land, labour and other inputs at the disposal of the organisation are scarce and have alternative uses. Decision-making is a continuous process, chiefly because the future is subject to change, risk and uncertainty.

1. Spencer, M.H. and Siegelman, L. (1964). Managerial economics. Decision Making and Forward Planning. Illinois, R.D. Irwin

For the purposes of this paper it is sufficient to define decision-making as the *choice between alternatives in order to adapt to the risk and uncertainty of the future*.

We shall now discuss the nature of decisions with specific reference to resource utilisation.

3.6 Nature of decision-making

Although there are various methods of classifying decision-making, we shall confine ourselves to Anthony's² framework. This framework consists of three elements, viz strategy planning, management planning and control, and operational control. Anthony's definitions of each of these elements are as follows:

Strategic planning: Strategic planning chiefly concerns deciding on objectives of the organisation, and policies that are to govern the acquisition, use and disposition of resources.

Management planning and control: The process by which managers ensure that the necessary resources are obtained and used efficiently in the accomplishment of the organisation's objectives.

Operational control: Operational control is the process of ensuring that specific tasks are carried out efficiently.

The following schematic representation gives one an idea of the extent to which strategic, management and operational decisions are taken at the various levels of management.

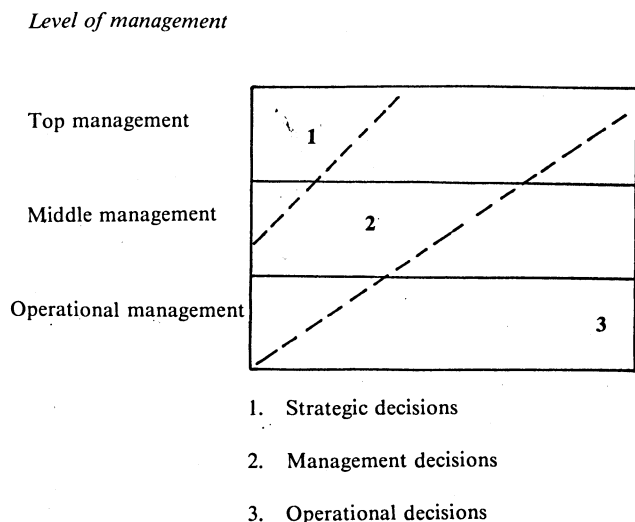


Figure 4: The extent to which various decisions are taken at different levels

It is therefore clear from Figure 4 that a single level of management is not concerned with one type of decision only. However, the diagram also indicates, or ought to indicate, that most strategic decisions tend to fall within the jurisdiction of top management and that the operational decisions are taken chiefly at the lower levels of management.

In practice, Schutte³ found that the time devoted to each of the three elements differs considerably from the structure illustrated in Figure 4. The results of his research are reflected in Figure 5.

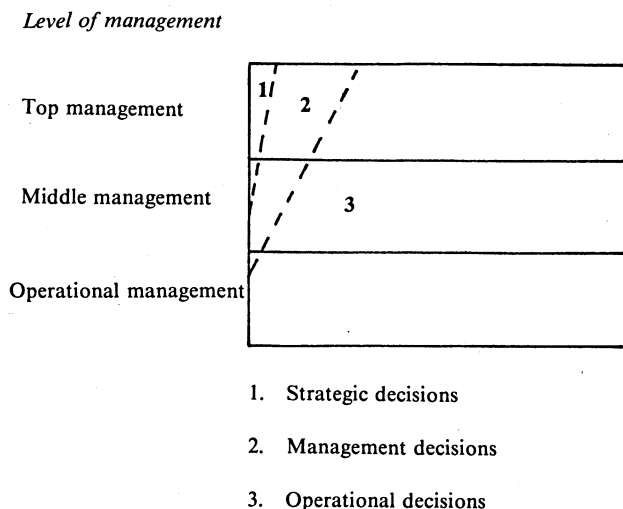


Figure 5: Schutte's empirical structure

What it amounts to is that managers' time is taken up largely by operational decisions on procedures or by management by crisis. Clearly the result is that the time managers spend on objectives and on the acquisition and effective utilisation of resources is limited.

4. Summary

Although factors external to the organisation have to be given thorough consideration in resource planning, the effective utilisation of resources rests with management. It is therefore the responsibility of management to ensure that the objectives of the organisation are so formulated that they are clear to everyone. If objectives are vague the strategy created to achieve them will necessarily also be vague and the allocation and utilisation of resources will not take place in the most efficient way.

2. Anthony, R.N. (1965). *Planning and Control Systems: A Framework for Analysis*. Boston, Harvard University

3. Schutte, F.G. *Information Systems: A Framework for Development*. MBL Lecture Material, UNISA

The resources at the disposal of agriculture in South Africa are limited. If the resources of land, labour and capital are to be utilised to the utmost, the entrepreneur (in this case the farmer) should become aware of what is required of him in his capacity as manager.

Last, the agricultural sector should become fully aware of the fact that efficient utilisation of resources

can take place only if the decision-maker has the information required to enable him to make the correct decisions. Information, whether of an economic or technical nature, should be offered in such a way that the entrepreneur can make use of it. It has been found that unless this is done research does not achieve its aim of contributing to better utilisation of resources.