

MATRIX MANAGEMENT

In previous issues of Agribusiness Management, I have used the terms "business organization" innumerable times. What did I really mean by these terms? Is there a single type of business organization or are there many? Is a business organization static in nature or is it likely to change over time?

Obviously, these questions have many theoretical connotations. For the most part, agribusiness managers care little about "theoretical matters;" they are more concerned with the practicalities of everyday life. I don't find this management reaction very surprising. Agribusiness managers should concern themselves with practical matters and leave the theories in the hands of academicians. As a result of this division of labor, the talents and interests of managers and academicians are more effectively applied. On occasion (although rare it may be), however, the two worlds of theory and practicality combine to produce a "finding" which is both intuitively appealing to the theoretician and eminently useful to the practitioner. One such finding is "matrix management."

Matrix management refers to an innovative form of a business organization which was originally conceived in the minds of academic theoreticians. After some initial refinement and testing, matrix management was actually applied within a business firm. The theory proved to be useful to the practitioner and within a brief three years, matrix management became a major component in the broad trend toward more complex forms of business organizations.

The objectives of this paper are 1) to acquaint agribusiness managers with the modern organizational concept called matrix management, 2) to describe the particular characteristics of matrix management which have contributed to its usefulness and adaptability, and 3) to list the limitations associated with matrix management in an attempt to reduce the probability of its being misused. Before these objectives can be accomplished, I am forced to dwell on some theoretical matters. Moreover, before a manager can appreciate the principles of matrix management, he must first understand the various theoretical forms of business organizations, how they evolved, and for what types of firms they are best suited. In an attempt to keep most of the contents of this paper directed towards the practical side, I shall use examples and illustrations whenever possible.

The Classical Theory

The classical theory of organizations deals almost exclusively with the anatomy of an organization — be it a religious, social or an economic (business) body. Scholars such as Fayol, Barnard, Gulick and Urwick have all contributed much to the fundamental theory. Very simply stated, this theory states that all human endeavor, particularly that related to one's economic pursuits, will ultimately encourage the establishment of an organization. This encouragement results from one's desire to attain 1) a division of labor, 2) scalar and functional processes, 3) a span of control, and 4) a relationship of all activities performed.

Before proceeding with a more detailed discussion of these four organizational stimuli, let's define the word "organization." An organization is a system for the coordination of activities of a group of people working together toward a common goal within a specified pattern of authority and leadership. As defined above, four basic elements are necessary to form an organization. It requires "a system for the coordination of activities," which emphasizes the fact that organizational activities must be geared to a logical relationship or sequence. An organization also requires "a group of people," i.e., although an organization may be depicted as a chart on paper, it needs people to give it life. There must exist effort "toward a common goal" in order to lend purpose to the actions of people. Finally, an organization cannot exist without a "pattern of authority and leadership." While authority permeates all segments of an organization, leadership is a human quality which may or may not be found in the manager of a firm. Does your agribusiness firm contain all four elements? If so, it can properly be referred to as a true business organization.

Stimuli for Organizational Establishment

Returning now to the four reasons for the establishment of an organization, each shall be discussed in more detail.

Division of Labor: As business endeavors grow in size, work must be divided. Without the division of labor, one job may become so demanding that its performance might become impossible. Division of labor, or specialization, is not restricted to production line jobs, but extends to all functions throughout an organization.

Scalar and Functional Processes: The scalar process refers to the growth in the chain of command which results from levels of personnel being added to the organization. The scalar process is accomplished through the inter

level delegation of authority and responsibility, i.e., a vertical expansion resulting from the further division of labor will necessitate that one man delegate a job function to someone else instead of doing it himself. If the firm had grown horizontally instead (that is, added new functions rather than further dividing existing ones), the functional process of delegating authority would have occurred.

Relationship of Activities: "Structure" is a term which is applied to the relationship which exists among the various activities of an organization. It exists so as to make for a more orderly flow of such activities and, thereby, accomplish the firm's objectives more readily. Common to organization theory are two familiar structures: the line and the staff. The line organization refers to those personnel linked to the chain of command between the firm's chief executive officer and those employees directly concerned with the handling of the firm's product or service. The staff organization consists of personnel acting as an advisory unit to those in the line organization.

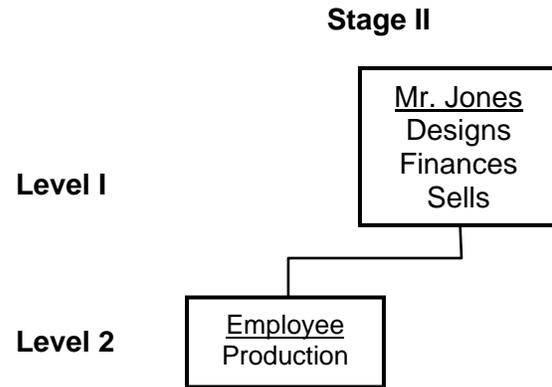
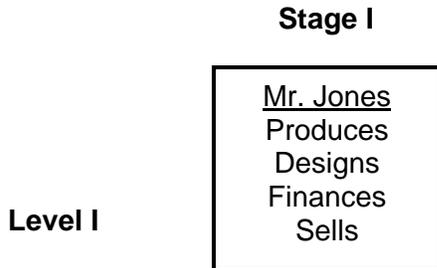
Span of Control: The span of control concept relates to the limitations on the physical number of subordinates over which a manager can maintain control. This limitation is related to the complexity of human and functional interrelationships in an organization. These relationships grow exponentially in number as additional personnel are added to an organization.

Organizational Evolution

For the purpose of better illustrating the four basic stimuli towards the establishment of a business organization, let's follow the evolution and growth of a typical business firm.

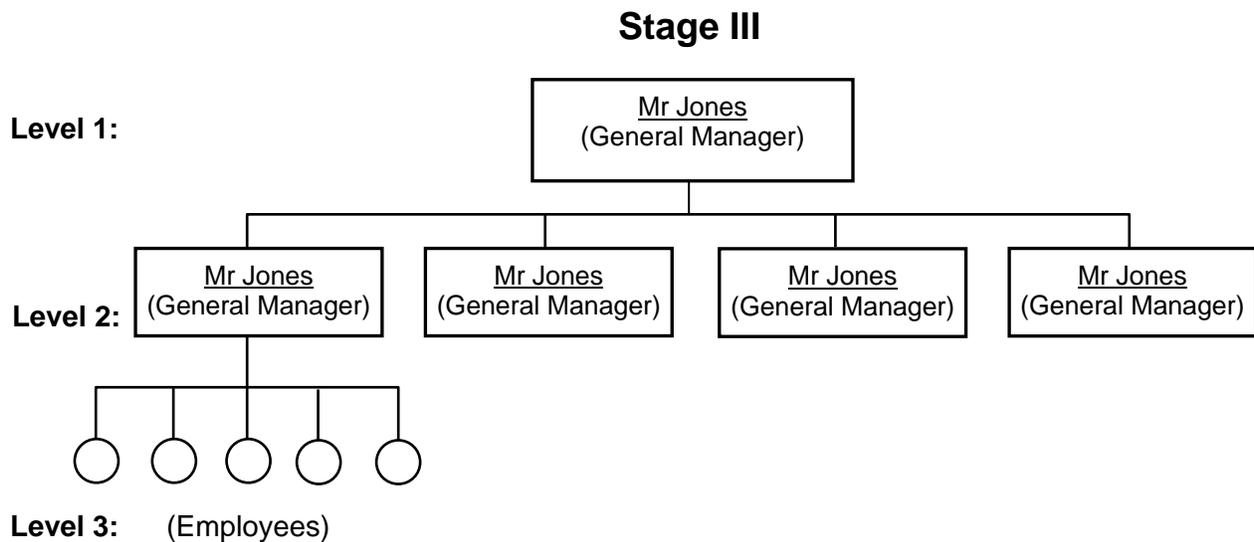
Suppose Mr. Jones decides to begin a business of his own. As the owner of this new one man business, Mr. Jones performs

all business functions, i.e., he designs the product, produces it, sells it, and finances the entire operation. Stage I (below) illustrates this business organization as it exists in this early stage.



Soon Mr. Jones' business begins to grow. He hires an employee to take charge of the production of the product. This action represents the first division of labor as Mr. Jones now concentrates his efforts on designing, financing, and selling. Stage II (below) illustrates this advanced form of business organization. Note that the organization now has two levels of personnel, i.e., a supervisor and a subordinate.

Mr. Jones' business continues to grow and prosper. Because of the increasing demands on his time, Mr. Jones decides to hire someone to handle the designing, the financing, and the selling. Furthermore, several production line employees are hired and the position of production manager is established and filled. Mr. Jones now begins to act more as a true general manager. Stage III illustrates this expanded business organization.

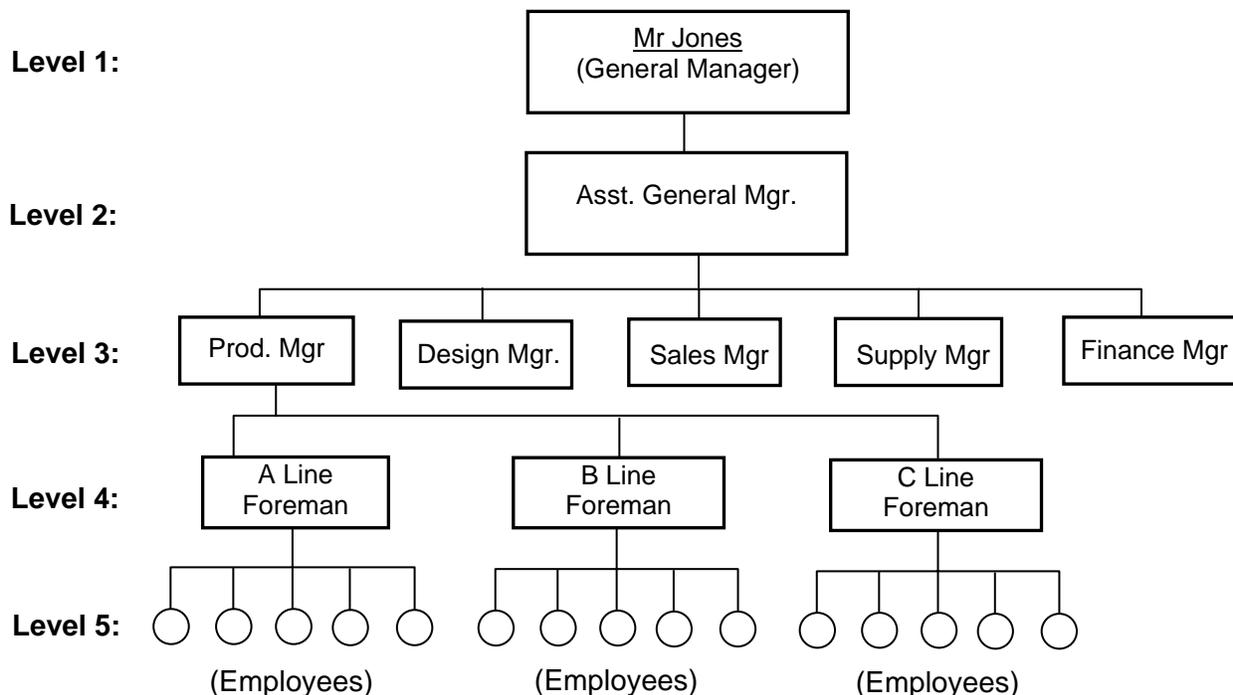


In the final stage of development of this business organization, Mr. Jones decides to diversify his business by producing three different products instead of just one. To accomplish this, three production lines are built, more production employees are hired, and a foreman for each production line is hired. Because of the rapid growth in the total firm volume, Mr. Jones also finds it necessary to add a supply manager to handle the growing responsibilities in this area. Also, as the firm has grown, Mr. Jones' administrative duties have expanded to the point where the hiring of an assistant general manager has become necessary. Stage IV illustrates the final phase in the growth of Mr. Jones' business organization.

As shown before in Stages I – IV, the division of labor is so fundamental to the establishment of a business organization that the other three stimuli derive from it. For example, movement from Stage I to II to III represents a distinct division of labor. However, as the functional managers are added and as production line employees are hired the functional and scalar

processes (respectively) are also evident, i.e., there is a growth in the chain of command resulting from both functional divisionalization and the addition of another level of personnel. The functional process is also evident in the addition of a supply manager in Stage IV. The addition of an assistant general manager in Stage IV is a scalar process. The addition of three production line foremen is the result of a combination of encouragements: functional (a horizontal expansion in the number of products being produced), scalar (the addition of one more level of personnel), and span of control (the production manager could no longer supervise the large number of employees so three intermediaries, or foremen, were added). The two familiar structures of line and staff are also evident in Stage IV. The attempt to establish a line organization is illustrated by the vertical linkage between Level 5 production employees and Level 1, the general manager. The staff organization is evident by the horizontal linkage of the various functional managers.

Stage IV



A Transition

For the most part, Stage IV is representative of the organizational outline of most business firms in this country. With only a few modifications, it would also typify most agribusiness firms with which you are familiar. Change is occurring, however, and for a very good reason. Returning to the illustration of Stage IV, two special relationships must be noted. First, because of the strict division of line and staff, any further expansion of product line requires the addition of a completely new work force extending to the foreman level. Second, the staff provides counsel and advice to all product lines in a dependent sequence, i.e., each product must have financial backing before it can be designed, each product passes through a design phase before production, each product must be produced before it can be sold, etc. This traditional organizational structure depicts the flow of product work among autonomous functional divisions: each division making its specialized contribution to a product before it is passed to the next division. The production manager is responsible for the status of all products as they are passed from one functional division to the next.

The Golden Rule

The golden rule of management adhered to by the traditional business organization is, "One man shalt have but one boss." Sure enough, as we look at Stage IV every person is held accountable but to a single individual. There are obvious disadvantages associated with this unity of command principle. For example, as more employees, functions, and/or levels of personnel are added to the traditional business organization, the golden rule becomes increasingly more difficult to follow.

As an agribusiness firm grows in size and complexity, the traditional business organization (Stage IV) may no longer meet its needs. In search of a more flexible organization, some businesses are turning

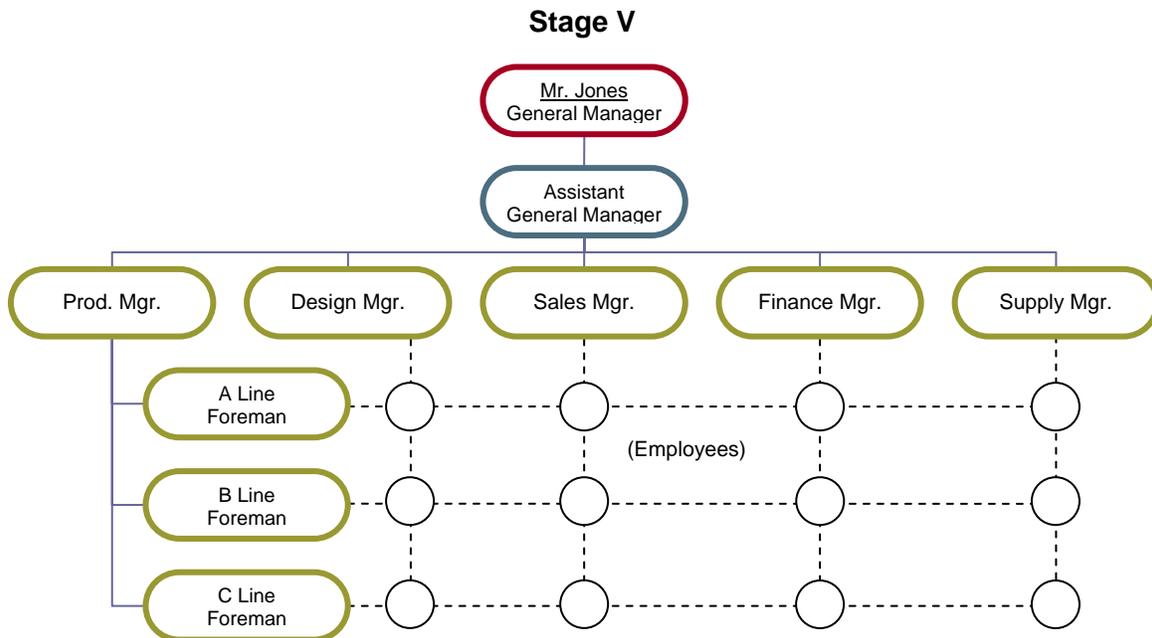
to a matrix pattern. The advent of this matrix pattern first becomes evident as the traditional line and staff demarcations no longer appear so distinct. For example, for the first time, line and staff managers may find themselves on more equal administrative footing. The transition is rarely a sudden one. Extensive communication throughout administrative channels is required before firm personnel will be able to adapt themselves to an environment where the golden rule of management is no longer evident.

The Matrix Organization

William G. Scott developed the matrix organization outline. His outline was designed for the purpose of improving management's project (or product) control within a multifunctional business. His perception of the matrix organization depicted various projects (or products), each with a non functional orientation, listed on the horizontal axis of an organizational chart, while the functional contributors to those projects (or products) were listed on the vertical axis. Cross representation was mandatory, i.e., each element of the matrix was filled with an employee accountable to both the production line foreman and a functional manager. Returning to our illustration of Mr. Jones' business, Stage V depicts the matrix form of organization.

Under the traditional organization (Stage IV), each employee was responsible to a single person (his foreman). If a functional manager wished to suggest a change in the production process (e.g., a change in a product design), he was forced to work through at least two levels of the line organization before reaching the actual production process. This created numerous communications problems and unnecessary delays.

Under the matrix organization, however, each production line employee has a dual responsibility; first to his foreman on matters



related to production and second to a staff level manager on matters related to functional contributions to the production process. A change in product design, for example, once it has been approved by the general manager, can be immediately communicated to the line employee responsible for both the design and production of the relevant product. In such a case, the design manager and the line foreman would cooperate to assure that the employee made the proper change. The necessary communications are minimized and unexpected delays are avoided.

The matrix organization is also very flexible. For example, new products or functions can be added to the organization by the simple addition of another row or column. Such additions (or contractions) have little impact on the operations of other products or functions as each team of employees acts independent of others. If a product is dropped from production, or a functional division is closed, those employees affected by these closures can be readily assigned to other elements of the matrix.

The different levels of personnel within the organization have been reduced. Each employee, if he wishes, can now communicate directly with a functional manager and visa versa. Again, unnecessary communication is avoided. The matrix organization also has several advantages for the general manager. For example, while the supervision of production and the functional divisions remain separate, the personnel involved are encouraged to cooperate with each other through a greatly enhanced system of product function interaction. This resultant cooperation reduces the general manager's supervisory work load and improves the efficiency of general firm operations. Also, when administrative problems do arise, the general manager has available to him dual communication channels which facilitate a more rapid transfer of directives.

Limitations

For those larger and rapidly growing agribusiness firms with multi-functional and multi-project (product) operations, matrix management may offer several distinct

advantages. It is not a trouble-free system, however. Before considering the adoption of the matrix form of business organization, agribusiness managers should be aware of the following limitations.

As was described earlier, matrix management violates the unity of command principle. It also destroys any meaningful line-staff distinction. As a result, when using matrix management, lines of authority must be set out very clearly. Stage V illustrates the obvious crisscrossing of the lines of command. Unless employees and management personnel have a clear understanding and appreciation of their dual responsibilities, the result may be a series of administrative ambiguities.

Management personnel must understand the new rules of the game so they will not feel their authority is threatened. Other employees may find it perplexing to function with more than a single boss. Those agribusiness firms employing a relatively large proportion of unskilled workers may experience severe difficulties in adopting their operations to the new system.

Extra bookkeeping efforts may be required in order to reconcile the expenditures on a cost center basis. The traditional product or division oriented system of reporting financial transactions is no longer relevant.

Because matrix management literally forces the expansion of product-function interaction amongst firm personnel, some personality conflicts may arise. If such conflicts continue to occur, they may eventually disrupt the operations of other product lines or other functions. Agribusiness firms, therefore, must be prepared to solve such problems quickly and effectively.

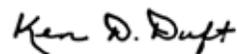
Finally, those firms adopting matrix management may experience some delays in the decision-making process. Those employees operating with dual authority for the first time may be reluctant to act as

promptly as expected. Continued experience with the new system will tend to reduce this hesitancy.

Summary

"Business organization" are two terms, most ambiguous in nature, yet used quite often by authors and managers. A business organization is an economic system for the coordination of activities of a group of people working together toward a common goal within a specified pattern of authority and leadership. A business organization may take many forms, but it usually begins as a one-man operation and, over time, expands into a multi-level structure of personnel classified into line and staff. Such expansion normally results from management's desire to attain: 1) a division of labor, 2) scalar and functional processes, 3) a span of control, and 4) a relationship of all activities performed.

During recent years, in response to the need for a more complex yet flexible form of business organization, a system referred to as matrix management has evolved. Matrix management requires an interwoven network of line and staff activities. Employees have dual responsibilities, reporting to both a production foreman and a functional manager. Matrix management reduces the number of personnel levels in a firm. It reduces communication delays, encourages product-function interaction amongst employees, and establishes a dual system of managerial controls. Its limitations include the dissolution of line-staff distinctions, the violation of the unity of command principle, the complication of bookkeeping procedures, and the tendency to create personnel conflicts during its early phases of operation.



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