

A HISTORICAL LOOK OF ORGANIZATIONAL THEORY AND BEHAVIOR

Although the field of organizational theory and behavior has been around for at least the past twenty-five years, as we move toward the new millennium, there are still significant human-oriented problems facing organizations. In the past decade, managers were preoccupied with restructuring their organizations to improve productivity and meet the competitive challenges in the international marketplace. Although the resulting “lean and mean” organizations offered some at least short- run benefits in terms of lowered costs and improved productivity, they would not be able to meet the challenges that lie ahead. The writer will look at the effect that the emergence of the enterprise and the evolution of the organization form has on organization theory and behavior.

What Is an Organization?

The question that is frequently asked is “what is an organization.” An organization is a consciously coordinated social entity, with a relatively identifiable boundary, that functions on a relatively continuous basis to achieve a common goal or set of goals. The words consciously coordinated imply management. Social entity means that the unit is composed of people or groups of people who interact with each other. The interaction patterns that people follow in an organization do not just emerge; rather, they are premeditated. Therefore, because organizations are social entities, the interaction patterns of their members must be balanced and harmonized to minimize redundancy yet ensure that critical tasks are being completed. The result is that our definition assumes explicitly the need for coordinating the interaction pattern of people.

An organization has a relatively identifiable boundary. This boundary can change over time, and it may not always be perfectly clear, but a definable boundary exist in order to distinguish members from nonmembers. It tends to be achieved by explicit or implicit contracts between members and their organization. In most employment relationships, there is an implicit contract where work is exchanged for pay. In social or voluntary organizations, members contribute in return for prestige, social interaction, or the satisfaction of helping others. But every organization has a boundary that differentiates who is and who is not part of that organization (Robbins, 1990).

People in an organization have some continuing bond. This bond does not mean lifelong membership. On the contrary, organizations face constant change in their memberships, although while they are members, the people in an organization participate with some degree of regularity. A salesperson at Sears Roebuck may be require to work

eight hours a day, five days a week while at the other extreme, someone functioning on a relatively continuous basis as a member of the United Progressive Brotherhood may attend a few meetings a year or merely pay the annual dues.

Finally, organizations exist to achieve something. These “something” are goals, and they usually are unattainable by individuals working alone or, if attainable individually, are achieved more efficiently through group effort. While it is not necessary for all members to endorse the organization’s goals fully, this definition implies general agreement with the mission of the organization (Robbins, 1990).

The definition of organization recognizes the need for formally coordinating the interaction patterns of organization members. Organization structure defines how tasks are to be allocated, who reports to whom, and the formal coordinating mechanisms and interaction patterns that will be followed.

According to Robbins (1990) an organization’s structure has three components: complexity, formalization, and centralization.

Complexity considers the extent of differentiation within the organization. This includes the degree of specialization or division of labor, the number of levels in the organization’s hierarchy, and the extent to which the organization’s units are dispersed geographically. Complexity, of course, is a relative term. Walden University, for instance, has a long way to go to approach the complexity of a General Electric or a McGraw-Hill Companies, where there are hundreds of occupational specialties; nearly a dozen levels between production workers and the chief executive officer, and organizational units dispersed in countries throughout the world.

The degree to which an organization relies on rules and procedures to direct the behavior of employees is formalization. Some organizations operate with a minimum of such standardized guidelines; others, some of which are even quite small in size, have all kinds of regulations instructing employees as to what they can and cannot do.

Centralization considers where the locus of decision-making authority lies. In some organizations, decision making is highly centralized. Problems flow upward, and the senior executives choose the appropriate action. In other cases, decision making is decentralized. Authority is dispersed downward in the hierarchy. It is important to recognize that, as with complexity and formalization, an organization is not either centralized or decentralized. Centralization and decentralization represent two extremes on a continuum. Organizations tend to be centralized or tend to be decentralized. The placement of the organization on this continuum, however, one of the major factors in determining what type of structure exists.

The third term-organization design--emphasizes the management side of organization theory. Organization design is concerned with constructing and changing an organization's structure to achieve the organization's goals. Constructing or changing an organization is not unlike building or remodeling a house. Both begin with an end goal. The designer then creates a means or plan for achieving that goal. In house construction, that plan is a blueprint. The organization building, the analogous document is an organization chart.

Organization Theory and Organization Behavior

Organization theory is the discipline that studies the structure and design of organizations. Organization theory refers to both the descriptive and prescriptive aspects

of the discipline. It describes how organizations are actually structured and offers suggestions on how they can be constructed to improve their effectiveness.

Organizational behavior draws from many theoretical frameworks of the behavioral sciences that are focused at understanding and explaining individual and group behavior in organizations. As with other sciences, Organizational behavior accumulates knowledge and tests theories by accepted scientific methods of research. Organizational behavior can be defined as the understanding, prediction, and control of human behavior in organizations.

Organizational behavior represents the behavioral approach to management, not the whole of management. Other recognized approaches to management include the process, quantitative, systems, and contingency approaches. In other words, organizational behavior does not intend to portray the whole of management. The charge that old wine (applied or industrial psychology) has merely been poured into a new bottle (organizational behavior) has also proved to be groundless. Although it is certainly true that the behavioral sciences make a significant contribution to both the theoretical and the research foundations of organizational behavior, it is equally true that applied or industrial psychology should not be equated with organizational behavior. For example, organization structure and management processes (decision making and communication) play an integral, direct role in organizational behavior.

Cognitive Framework

The cognitive approach to human behavior has many source of input. The cognitive approach emphasizes the positive and free-will aspects of human behavior and utilizes concepts such as expectancy, demand, and incentive. Cognition, which is the

basic unit of the cognitive framework, is the act of knowing an item of information.

Under this framework, cognitions precede behavior and constitute input into the person's thinking, perception, problem solving, and processing information (Rathus, 1984).

The classic work of Edward Tolman can be used to represent the cognitive approach. Although considered a behaviorist in the sense that he believed behavior to be the appropriate unit of analysis, Tolman felt that behavior is purposive, that it is directed toward a goal. In his laboratory experiments, he found that animals learned to expect that certain events would follow one another. For example, animals learned to behave as if they expected food when a certain cue appeared. Thus, Tolman believed that learning consists of the expectancy that a particular event will lead to a particular consequence. This cognitive concept of expectancy implies that the organism is thinking about, or is conscious or aware of, the goal. Thus, Tolman and others espousing the cognitive approach felt that behavior is best explained by these cognitions.

Contemporary psychologists carefully point out that a cognitive concept such as expectancy does not reflect a guess about what is going on in the mind; it is a term that describes behavior. In other words, the cognitive and behavioristic theories are not as opposite as they appear on the surface and sometimes are made out to be—for example, Tolman considered himself a behaviorist. Yet, despite some conceptual similarities, there has been a controversy throughout the years in the behavioral sciences on the relative contributions of the cognitive versus the behavioristic framework.

Behavioristic Framework

Its roots can be traced to the work of Ivan Pavlov and John B. Watson. These pioneering behaviorists stressed the importance of dealing with observable behaviors

instead of the elusive mind that had preoccupied the earlier psychologists. They used classical conditioning experiments to formulate the stimulus-response (S-R) explanation of human behavior. Both Pavlov and Watson felt that behavior could be best understood in terms of S-R. A stimulus elicits a response. They concentrated mainly on the impact of the stimulus and felt that learning occurred when the S-R connection was made.

Modern behaviorism marks its beginnings with the work of B. F. Skinner who is widely recognized for his contributions to psychology. He felt that the early behaviorists helped explain respondent behaviors (those behaviors elicited by stimuli) but not the more complex operant behaviors (those behaviors which are not elicited by stimuli but which simply occur; operant behaviors are emitted by the organism). In other words, the S-R approach helped explain physical reflexes; for example, when stuck by a pin (S), the person will flinch (R), or when tapped below the kneecap (S), the person will extend the lower leg (R). On the other hand, Skinner found through his operant conditioning experiments that the consequences of a response could better explain most behaviors than eliciting stimuli could. He emphasized the importance of the response-stimulus (R-S) relationship. The organism has to operate on the environment in order to receive the desirable consequence. The preceding stimulus does not cause the behavior in operant conditioning; it serves as a cue to emit the behavior. For Skinner, behavior is a function of its consequences.

It is important to understand that the behavioristic approach is environmentally based. It implies that cognitive processes such as thinking, expectancies, and perception do not play a role in behavior. However, as in the case of the cognitive approach, which includes behavioristic concepts, some psychologists feel that there is room for cognitive

variables in the behavioristic approach. In particular, a social learning approach has emerged in recent years that incorporates both cognitive and behavioristic concepts and principles.

Social Learning Framework

The cognitive approach has been accused of being mentalistic, and the behavioristic approach has been accused of being deterministic. Cognitive theorists argue that the S-R model, and to a lesser degree the R-S model, is much too mechanistic an explanation of human behavior. A strict S-R interpretation of behavior seems justifiably open to the criticism of being too mechanistic, but because of the scientific approach that has been meticulously employed by behaviorists, the operant model in particular has made a tremendous contribution to the study of human behavior. The same can be said of the cognitive approach. Much research has been done to verify its importance as an explanation of human behavior. Instead of polarization and unconstructive criticism between the two approaches, it now seems time to recognize that each can make an important contribution to the study of human behavior. The social learning approach tries to integrate the contributions of both approaches.

It must be emphasized that the social learning approach is a behavioral approach. It recognizes that behavior is the appropriate unit of analysis. However, unlike a strict or radical behavioristic approach, under the social learning approach it is felt that people are self-aware and engage in purposeful behavior. Under a social learning approach, people are thought to learn about their environment, alter and construct their environment to make reinforcers available, and note the importance of rules and symbolic processes in learning (Rathus, 1984).

Although a number of psychologists are associated with social learning, the work of Albert Bandura is probably the most representative of this approach. He takes the position that behavior can best be explained in terms of a continuous reciprocal interaction between cognitive, behavioral, and environmental determinants. The person and the environmental situation do not function as independent units but, in conjunction with the behavior itself, reciprocally interact to determine behavior. Bandura explains, “it is largely through their actions that people produce the environmental conditions that affect their behavior in a reciprocal fashion. The experiences generated by behavior also partly determine what a person becomes and can do, which, in turn, affects subsequent behavior.”

Contrasting Organization Theory and Organizational Behavior

Organizational behavior takes a micro view--emphasizing individuals and small groups. It focuses on behavior in organizations and a narrow set of employee performance and attitude variables- employee productivity, absenteeism, turnover, and job satisfaction are those most frequently looked at. Individual behavior topics typically studied in Organizational Behavior include perception, values, learning, motivation, and personality. Group topics include roles, status, leadership, power, communication, and conflict.

In contrast, organization theory takes a macro perspective. Its unit of analysis is the organization itself or its primary subunits. Organization theory focuses on the behavior of organizations and uses a broader definition of organizational effectiveness. Organization theory is concerned not only with employee performance and attitudes but with the overall organization's ability to adapt and achieve its goals.

This micro-macro distinction creates some overlap. For instance, structural factors have an impact on employee behavior. So students of organizational behavior should consider the structure-behavior relationship. Similarly, some micro topics are relevant to the study of organization theory. But where micro and macro issues overlap, their emphasis is often different. For instance, the topic of conflict in organizational behavior tends to focus on interpersonal and intragroup conflicts that derive from personality differences and poor communication. Conflict, when studied by organization theorists, emphasizes problems of interunit coordination. While the student of organizational behavior is likely to see all conflicts as “people” problems, the student of organization theory tends to see the same conflict as resulting from flaws in the organization’s design. The issue is not that one is right and the other is wrong. Rather, organizational behavior and organization theory merely emphasize different levels of organizational analysis.

The Emerging Concept of an Enterprise

The Mechanistic View of the World

When the Industrial Revolution began in the West, the prevailing worldview was Newtonian. Newton thought of the world as a hermetically sealed clock, a mechanism that operated with a regularity dictated by its internal structure and the causal laws of nature, laws he believed he had formulated. Therefore he viewed the world as a closed, self-contained, mechanical system, one that had no environment.

In general, what occurs in the world was thought to be understandable without reference to the environments in which they occur. This is reflected in the fact that most physical laws of that period described what things would do, or what events would occur, in the absence of an environment. For example, the Law of Freely Falling Bodies reveals

the distance a body would fall in a specified amount of time in a vacuum. A vacuum is the absence of an environment. Furthermore, most research was conducted in laboratories, places deliberately constructed to eliminate the effect of the environment on the study of the effect of one variable on another.

Newton also believed that the world was a machine that God had created to do his work, to serve his purposes. This belief was shared by most others in the Western world regardless of their religious differences. From pulpits of every sect people were told that they were here to do God's will.

Most people in the West also believed the claim made in Genesis that people had been created in the image of God. These two beliefs-that the world was a machine created by God to do his work, and that people had been created in his image- formed the premises of a syllogism that concluded with: Human, like God, should create machines to do their work. This belief was a source of the Industrial Revolution.

The Industrial Revolution

The Industrial Revolution began in England in the eighteenth century and then spread to other parts of the world. It did not reach the United States until about a century later because this country was largely occupied with pushing back its frontiers, settling the land, and developing the infrastructure-particularly transportation and communication- required to support industrialization. The revolution consisted of the replacement of people by machines as sources of energy. It was not until the eighteenth century that the amount and kind of technology required for large-scale industrialization became available.

Work was thought of as the application of energy to matter so as to change its properties. For example, such activities as moving an object, burning coal, and shaping steel were considered to be work. Machines were taken to be objects that could be used to apply energy to matter. All things were thought to be reducible to indivisible particles of matter, atoms. Similarly, machines were thought to be reducible to three elementary machines: the wheel and axle, the lever arm, and the inclined plane. By means of what came to be known as “work study,” work was similarly reduced by analysis to ultimately simple tasks. The simpler the tasks, the easier they were to mechanize. Machines were then developed to perform as many of these elementary tasks as were technologically and economically feasible. People were assigned to those that were not. Then people and machines were organized into sequences and networks of tasks, the apotheosis of which was mass production and the assembly line.

Mechanization affected the nature of the tasks left for people to perform. Workers no longer did all the things necessary to produce a product; rather, they repeatedly performed simple operations that were a very small part of the production process. Consequently, the more machines were used as substitutes for people, the more people at work were made to behave like machines. Mechanization led to the dehumanization of work done by people. This was the irony of the Industrial Revolution.

It is not surprising that a society that thought of the world as a machine also came to think of the enterprises created by the Industrial Revolution as machines and the people who worked in them as replaceable machine parts.

The Enterprise as a Machine

Business enterprises were initially thought of as machines created by their gods, their owners, to do their work. Enterprises, conceptualized as machines, like all machines, were attributed with no purpose of their own, but were believed to have the function of serving their owners' purposes. Their principal purpose was to obtain an adequate return on their investment of time, money, and effort. This required that enterprises make a profit. Making a profit came to be thought of as the only legitimate function of an enterprise. This belief is still held by many, as reflected in the writing of Milton Friedman (1970): "(T) here is one and only one social responsibility of business- to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game . . ." (p. 125). The same point of view was expressed more recently by Rappaport (1986). It is far from dead.

Owners of early enterprises were present and powerful; they ran their businesses with virtually no constraints. They were godlike in the small worlds they had created. Employees were known to be human, of course, but their personal interests and purposes were taken to be irrelevant to their employers. Workers were retained only as long as they were ready, willing, and able to do what the owners wanted. When they no longer were, like replaceable machine parts, they were discarded and replaced by others who were compliant and usable. This was even true of managers: E.E.Jennings (1971), writing of the life of managers during this period, observed: "Family life became just another cog in the corporate machine (p. 29;).

In the early days of industrialization the work done by most employees required little or no skill, and unskilled labor was plentiful. In general, the members of the workforce had little education and therefore relatively low levels of aspiration. Many

were immigrants who had only a very limited knowledge of English. They aspired more for their children than for themselves. For most workers, employment was necessary for survival. Unemployment often resulted in economic destitution. There was no Social Security, no unemployment insurance or welfare, and the average compensation of workers was not large enough to enable them to insure themselves against unemployment. Little wonder, then, that many were willing to work under almost any conditions, and they did.

The Decline of the Mechanistic View of an Enterprise

The conception of an enterprise as a machine started to become less tenable in the last few decades of the nineteenth century. By the end of World War 1, the mechanistic conception was largely replaced by one that was biological; enterprises were increasingly thought of as organisms rather than as machines.

There were a number of reasons for this transformation. Both the educational level of workers and their levels of aspiration had increased. Government began to regulate working conditions, thereby reducing the power of the owners and protecting at least the biological welfare (health and safety) of members of the workforce. Unions emerged and began to improve the conditions of work, work itself, compensation for it, and job security.

However, the most important reason for the transition from the mechanistic to the organic conception of enterprises was the fact that their owners could not exploit all the opportunities for growth of their enterprises even if all their profits were reinvested in their growth. In addition, the increased technology of production required increased amounts of investment in facilities and equipment. “In order to buy the capital equipment

necessary for new and expanded operations, corporations have traditionally gone to the investing public for funds” (Mouzelis, 1974, p. 184). Therefore, to unleash growth and productivity, many owners had to raise additional capital by selling stock. This required most of them to relinquish at last some control over the enterprises they had created. The survival and growth rates of those enterprises that raised investment capital by “going public” were much greater than of those whose owners elected to retain control and constraint growth.

When an enterprise went public, its god disappeared. Stockholders were numerous, dispersed, anonymous to, and unreachable by members of the workforce. Some of the larger corporations acquired more than a million shareholders; one, AT&T, acquired over three million. Therefore, ownership became an abstraction, owners a spirit. How was communication with this spirit to be obtained? There was a precedent: Nineteen hundred years earlier, a Western God had disappeared and become an abstract spirit with whom ordinary men could not communicate directly. An institution and a profession- the church and its clergy-were created to bridge the gap. Similarly, as the nineteenth century drew to a close, management (the church) and managers (the clergy) were created to control enterprises in the alleged interests of their owners, and to discern and communicate their will to the employees. Managers came to know the shareholders’ will in the same way the clergy claimed to know the will of God, by revelation.

The principal effect of the dispersion of “ownership” was to give effective control of enterprises to their managers. James Burnham (1941) referred to this as a “managerial revolution.” He argued that enterprises were now run by managers primarily for their own benefit, not the owners’. Profit came to be thought of as a means, not an end. Like

oxygen for a human being, profit was thought of as a means necessary for the survival and growth of the enterprise, not the reason for it. At the turn of the century, the American humorist Ambrose Bierce (1967) caught the spirit of this change of perspective in his definition of money: “A blessing that is of no advantage to us excepting when we part with it” (p. 226).

In the 1960s a very large and very successful corporation in the United States conducted a study to explain the decisions of its executives using profit maximization as the principal corporate objective. This study concluded that either the executives were incompetent or that profit maximization was not the corporation’s principal objective. Those who conducted the study then asked: What objective would retrospectively have maximized the rationality of the decisions the executives had made? One objective was found that made almost all executive decisions “rational”: maximization of the standard of living and quality of work life of those executives who made the decisions, not shareholder value. Providing shareholders with adequate returns had been treated as a requirement for survival, not an objective. Survival is a biological concept, not mechanical (Ackoff, 1994).

THE EVOLUTION OF ORGANIZATION THEORY

The real “action” in organization theory has taken place since the turn of the century. There were a few major pre-twentieth-century milestones. However, the real problem lies in developing a framework that can adequately demonstrate the evolutionary nature of contemporary organization theory. That is, how do you organize organization theory?

It has been suggested that there are two underlying dimensions in the evolution of organization theory and that each dimension, in turn, has opposed perspectives. The first dimension reflects that organizations are systems.

Systems are classified typically as either closed or open. Prior to about 1960, organization theory tended to be dominated by a closed-system perspective. Closed-system thinking stems primarily from the physical sciences. It views the system as self-contained. Its dominant characteristic is that it essentially ignores the effect of the environment on the system. A perfect closed system would be one that receives no energy from an outside source and from which no energy is released to its surroundings. The closed-system perspective has little applicability to the study of organizations.

Beginning around 1960, however, organization theory began to take on a distinctly open-system perspective. Analyses that previously had placed primary focus on the internal characteristics of organization gave way to approaches that emphasized the importance for the organization of events and processes external to it.

Characteristics of an Open System.

All systems have inputs, transformation processes, and outputs. They take things such as raw materials, energy, information, and human resources and convert them into goods and services, profits, and waste materials. Open systems have some additional characteristics that have relevance to the studying organizations.

Environment awareness. One of the most obvious characteristics of an open system is its recognition of the interdependency between the system and its environment. There is a boundary that separates it from its environment: Changes in the environment affect one

or more attributes of the system, and, conversely, changes in the system affect its environment.

Without a boundary there is no system, and the boundary or boundaries determine where systems and subsystems start and stop. Boundaries can be physical, like the clear lines that separate the United States from its neighbors to the north and south. They also can be maintained psychologically through symbols such as titles, uniforms, and indoctrination ritual. It is sufficient to acknowledge that the concept of boundaries is required for an understanding of systems and that their demarcation for the study of organizations is problematic.

Feedback. Open systems continually receive information from their environment. This helps the system to adjust and allows it to take corrective actions to rectify deviations from its prescribed course. This receipt of environmental information **feedback**; that is, a process that allows a portion of the output to be returned to the system as input (such as information or money) so as to modify succeeding outputs from the system.

Cyclical character. Open systems are cycles of events. The system's outputs furnish the means for new inputs that allow for the repetition of the cycle. For instance, the revenue received by the organization must be adequate to pay creditors and the wages of employees if the cycle is to be perpetuated and the survival of the organization is maintained.

Negative entropy. The term **entropy** refers to the propensity of a system to run down or disintegrate. A closed system, because it does not import energy or new inputs from its environment, will run down over time. In contrast, an open system is characterized by

negative entropy--it can repair itself, maintain its structure, avoid death, and even grow because it has the ability to import more energy than it puts out.

Steady state. The input of energy to arrest entropy maintains some constancy in energy exchange resulting in a relatively steady state. Although there is a constant flow of new inputs into the system and a steady outflow, on balance the character of the system remains the same. Organizations were seen as essentially autonomous and sealed off from their environment.

The Organization as a System

At the most general level we find it useful to view an organization as an open system in which the behaviors of members are themselves interrelated. The behaviors of members of an organization are also interdependent with the formal organization, the tasks to be accomplished, the personalities of other individuals, and the unwritten rules about appropriate behavior for a member. Under this concept of system, the behavior of any one manager can be seen as determined not only by his own personality needs and motives, but also by the way his personality interacts with those of his colleagues. Further, this relationship among organization members is also influenced by the nature of the task being performed, by the formal relationships, rewards, and controls, and by the existing ideas within the organization about how a well-accepted member should behave. It is important to emphasize that all these determinants of behavior are themselves interrelated.

For example, a typical manufacturing executive behaves in a certain manner not only because of his own personality, but also because his job as a plant manager requires him to have contact with a certain group of subordinates and with a number of executives

at his own level as well as with a particular superior. While the individual personalities of these other executives may influence his behavior, our man will probably also behave as he does because of some expectations he shares with all these other managers about how a plant manager in this company should behave. The behavior of this executive will also be influenced by the fact that there is an established control system that measures certain costs and certain quality characteristics. The exact nature of the control system may be closely related to the nature of the technology. In a job-order shop a plant manager might be concerned about somewhat different matters from those that would confront the manager of a chemical processing plant. Both the formal organization and the technology may also be related to the shared expectations of how managers should behave, and because of all these characteristics the organization may attract managers with certain personality needs.

This description of an organization as a system has, for illustration, focused on the influences affecting the behavior a typical manager. The interest is to understand the behavior of large numbers of managers in sizable organizations. This necessitates a central concern with two other important aspects of the functioning of systems. First, as system becomes large, they differentiate into parts, and the functioning of these separate parts has to be integrated if the entire system is to be viable. As an analogy, the human body is differentiated into a number of vital organs, which are integrated through the nervous system and the brain. Second, an important function of any system is adaptation to what goes on in the world outside. We, as human systems, are very much concerned about dealing with the people and things that make up our external environment.

The second dimension deals with the ends of organization structure. There are two opposed positions. The rational perspective argues that the structure of an organization is conceived as a vehicle to effectively achieve specified objectives. In contrast, the social perspective emphasizes that structure is primarily the result of the conflicting forces by the organization's constituents who seek power and control (Robbins, 1990).

The open system recognizes the dynamic interaction of the system with its environment. No student of organizations could build much of a defense for viewing organizations as closed systems. Organizations obtain their raw materials and human resources from the environment. They depend on clients and customers in the environment to absorb their output. Banks take in deposits, convert these deposits into loans and other investments, and use the resulting profits to maintain themselves, to grow, and to pay dividends and taxes. The bank system interacts actively with its environment, which is made up of people with savings to invest, other people in need of loans, potential employees looking for work, regulatory agencies, and the like.

THE EVOLUTION OF ORGANIZATION FORMS

Functional Organization

The functional organization first burst onto the scene in the latter part of the nineteenth century and was the dominant organizational form until the late 1940s. The functional form permitted many organizations to achieve the size and efficiencies needed to provide products and services to a growing domestic market. Championed by Andrew Carnegie, who applied this form of organizing to his steel mills and railroads, it groups employees according to their type of expertise. By controlling both raw materials and railroads, Carnegie was able to keep his mills running efficiently on a tightly planned

schedule. Management only had to create a department for each major task performed (such as purchasing, manufacturing, and accounting) and then secure resources for employees to perform their tasks. The advantages of this organization form were that employees could learn and hone their skills by working with others doing similar jobs in a department and, as their skills improved, they could pursue career paths in that same department.

Wal-Mart still uses a functional organization form. All across the United States and Mexico, Wal-Mart focuses on a well-defined and socio-economically homogeneous buying market. From these highly similar customer markets, Wal-Mart's electronic point-of-purchase cash registers feed sales data to its headquarters computers by what industry experts recognize as one of the most efficient inventory and distribution systems in the country. Wal-Mart performs a limited set of functions extremely well using the talents of its planning specialists, logistical experts, and management information systems employees. Through the use of these functional experts, it has created the world's largest retailing empire. Through its functional form, it achieves a high degree of integration. Because of its huge buying power, it has been able to centrally coordinate its army of suppliers to respond to its forecasts and schedules. Sam Walton learned the lessons of Carnegie very well.

The functional organization can be thought of as a special-purpose dedicated machine commonly used by *knowing* organizations to produce a limited line of goods and/or services in large volume and low cost. This form permits organizations to utilize the special skills of their employees and equipment to predictably deliver a standard product to the marketplace.

Knowing organizations, such as McDonald's, frequently integrate backward to assure themselves the steady flow of materials and component parts essential to their efficient operation. For example, McDonald's owns its own potato farms and processing plants that convert the potatoes into French fries. It even owns its own bakeries and chicken processing plants in some areas. The functional approach extends even to individuals in McDonald's outlets. There, each person is trained to do a specific task. These firms also forward integrate by creating new wholesaling and retailing channels (such as Sam's wholesale Club by Wal-Mart and Dollar Rent-A-Car by Chrysler Corporation) to assure that their output can be efficiently sold and distributed.

These benefits are not without costs. Vertical integration assures functionally organized firms predictably, but requires extensive coordination and a large number of specialized assets demanding full utilization. Harley-Davidson, in the early 1980s, discovered that its inflexible production schedule and its high costs were caused by manufacturing all of its component parts itself. Its competitors, such as Honda, Yamaha, BMW, and Kawasaki, relied on close suppliers to manufacture their components at a lower cost than if they manufactured the parts themselves. A move toward a just-in-time inventory system allowed Harley-Davidson to outsource many of its parts, thus reducing its total cycle time. Harley worked closely with its suppliers to ensure quality and speedy delivery. This system permitted it to bring new products to the market quicker, while reducing its overall costs. The system required a more permeable structure and a closer relationship with suppliers than Harley-Davidson's functional form had allowed.

Functional organizations may encounter additional problems if their assets cannot be easily adapted to a new product or service. If the number of products the organization

offers becomes too large or if demand variations interfere with efficient scheduling, the functional form begins to prove inflexible and too costly to operate. At McDonnell Douglas, for example, the functional structure spreads an engineering department's work over several different types of planes. Cost overruns and production slowdowns aggravated solving these problems within a functional structure. Eventually, McDonnell Douglas scrapped this form and replaced it with a product or divisional form. Similar snafus occurred at Chrysler when it attempted to accommodate increasing product variability and complexity in its mostly functional structure. Not until it restructured itself and adopted a divisional form were these problems addressed and solved. Functional structures do not adjust easily to fast-changing markets.

A functional structure closes organizations to experience by shutting off departments from one another and separating business processes rather than unifying them. Functional organizations do not "flex" to meet changing resource or market demands. Finally, functional organizations seem designed to create distance rather than intimacy between people and processes, responsibility and power. Bureaucracy is often a hallmark of functional structures because of the need to coordinate and control many separate activities. These elements of the functional structure put organizations that utilize this form at a serious disadvantage in creating a climate for learning.

Divisionalized Structure

The divisionalized structure had its genesis with Alfred Sloan at General Motors where specific automobile brands were aimed at different priced customer markets. Product divisions such as Chevrolet, Oldsmobile, and Buick operated as autonomous divisions, producing and marketing cars for their market niche while headquarters served

as an investment banker for capital and strategic planning. Among major corporations using a divisional structure today are Matsushita Electrical Industries, Quaker Oats, Rubbermaid, Harris Corporation, and American Express.

The divisionalized form of organization can be thought of as a collection of similar special-purpose machines that independently operate in a market. Each division's performance can be monitored by headquarters on the basis of its profits/losses, and market share for possible expansion, divestiture, or redirection. The company pools resources from all divisions to promote growth in existing product lines or to acquire new operations. Thus, the divisional form achieves both flexibility and economies of scope by its ability to rapidly deploy assets to new markets. The divisional form may also develop procedures for transferring new technology and managerial know-how across divisions through its strong culture. Many divisionalized organizations have the learning styles found in *understanding organizations*.

Although divisionalized firms may become adept at moving resources into new avenues of opportunity for the firm, they are vulnerable to overextension. Most divisionalized firms have had the unfortunate experience of moving into markets that initially appear attractive, only to discover that these markets are outside of their core competencies. Divisional structures tend to be evaluated by standard performance measures that are often out of sync with each individual division's customer needs. This has been a problem at Kentucky Fried Chicken, a fast-food line within PepsiCo. PepsiCo managers have put tremendous pressures on Kentucky Fried Chicken to attain a profitability level that is standard in the beverage industry, but simply cannot be reached in the fast-food industry.

The creation of cross-division committees to share technology or to help coordinate improvements across divisions is often more of a dream than a reality. In fact, they introduce many of the problems found in earlier functional structures. When General Motors' blueprint was originally conceived and implemented by Sloan, it faced little competition. The firm enjoyed the benefits of cross-divisional coordination without major losses of decreased responsiveness and flexibility. Under growing domestic and foreign competition since the 1980s, interdivisional planning and coordination practices have delayed the introduction of new products. These coordination practices also bloated GM's cost structure compared to its competitors and made many of GM's cars appear to be clones of each other. Who can ever forget the Cadillac that looked like a Chevy? When faced with the decision to bring a new car (the Saturn) to the market, GM had to bypass its own structure and create an entirely new division.

The learning disabilities of divisional structures are evident in the autonomy and isolation of divisions that render them impermeable and distant. Like functional structures, divisional organizations often become captives of their own experience, cut off from learning and even oblivious to the need to learn from other divisional personnel. This happened at GM, where interesting new technologies were never shared among divisions. These traditional organization structures-- functional and divisional--do not stand up well to the criteria of learning structures--permeability, flexibility, and intimacy. More contemporary forms such as matrix, network organizations, and modular organizations seem to offer greater opportunities for learning.

Matrix Structure

The matrix structure can be thought of as a way of generating goods and services for both stable and changing markets. The logic of the stable portion of the matrix is similar to that of the functional form--that is, to centralize coordination of specialized tasks. The other portion responds to changes in the marketplace by emphasizing divisional priorities. To these two demands, the matrix structure adds the requirement for a balance among each structure to produce a mutually beneficial allocation of resources.

Many firms that initially trumpeted the matrix form were in the aerospace industry, but the matrix format has found widespread acceptance in the construction, hospital, chemical, and banking industries as well. At the Boeing Company, there is a need to fill long-term contracts with the airlines for various configurations of planes. These contracts are carried out in the stable portion of Boeing structure by functionally organized departments (such as structures, aerodynamics, and engineering). Boeing is simultaneously working on prototypes for customers and needs personnel to staff groups to complete these customized projects. In this situation, the key to Boeing's success is to supply personnel to each of the various project teams. This is accomplished through temporary assignment of personnel from its functional (stable) departments. When the prototype is completed, personnel return to their home base to work on standardized products and await reassignment to other projects. The matrix structure increases the organization's abilities to use its personnel and financial resources wisely and to adapt to changing business conditions, thus learning from its own experience.

This structure is not a panacea, as many organizations have found out. Each new project places additional constraints on scarce resources that now have to be allocated over a wider range of projects. Some costly resources may not be efficiently utilized and,

thus, the firm loses some of the benefits it should derive from the matrix structure. To achieve the level of co-ordination required to make the matrix structure successful may exceed the benefits derived from it. Bureaucracy and long-standing committees cripple the matrix's flexibility. Overhead costs and duplication in reporting lines make decision making cumbersome. Equally troublesome is that personnel in the matrix structure now must report to two managers: the functional and project managers. The employee's divided loyalty oftentimes creates stress and provides a fertile ground for office politics. This is especially true when matrix structures are less balanced in practice than they were designed to be. Most matrix structures are actually "tilted" to one side or the other. Finally, the fear of being outpaced when the project is completed has led to project delays and needless tensions by employees, both of which increase the cost of doing business. These are problems internal to the matrix organization. By and large, the matrix form passes the learning test of permeability and intimacy, but in practice, the promised flexibility has been hard to come by (McGill, Slocum 1994).

Stable Network

The stable form of structure has its roots in the functional organization. It is designed to link independently owned organizations along a path in the organization's value line. Top management's role is to orchestrate a broad strategic vision, develop the administrative infrastructure, and create the cultural glue that can foster synergies and ensure unity of mission. According to James Morgan, chief executive of Applied Materials Inc, maker of semiconductor manufacturing equipment, the stable network is based on a collaborative web of suppliers and customers. Each partner in the web specializes in doing part, but not all, of the process very well. Reliance on subcontracting

has been prevalent in a number of industries for some time. Jim Tarter, a general manager in the consulting firm of King Chapman Broussard and Gallagher, recommends to his clients that they keep plant and equipment expenses limited and focus their attention on investing and leveraging their core competencies. Unless the facilities and manufacturing technologies are themselves part of a firm's core competencies, he recommends that they should be outsourced.

Novellus Systems Inc., among the most profitable and fast growing companies in the semiconductor production equipment field, provides an interesting example of a stable network. It employs only 12 production people, but earns sales of more than \$350,000 per employee, almost double the industry average. Novellus designs and engineers advanced chemical deposition equipment, such as metal oxide substrates and vacuum deposition. These are critical to designing thin-film substrates used in microchips. It focuses its attention on maintaining a long-term relationship with a few trusted suppliers.

Many manufacturing companies, such as Liz Claiborne, Nike, and Honda, also have limited their amount of capital in plant and manufacturing operations by producing as few components as they could reasonably produce and then sourcing most others externally. Virtually all large retail organizations, such as Target and K Mart, aggregate their day's sales each night from their electronic point-of-sale systems. The systems break down sales into product lines by item, cut, size, material, color, style, and number sold. The data is then fed from corporate headquarters to orders for products from suppliers around the world. Within a few days, the merchandise is on the shelves. Thus, stock levels are set to meet current demands, markdowns are limited, and store

inventories are kept to a minimum level. What is stocked is dictated by the customer. Manufacturers are linked as directly to these major retailers as possible. Once again, the structural keys are openness and closeness, each enhancing the other. This is the core competence of such companies as Benthem, The Limited, and Liz Claiborne in the fast-changing retail environment

Modular Organization

To overcome some of the pitfalls of the stable network, other organizations, as diverse as movie making and construction, have employed a different form of structure. Labeled modular, virtual, or dynamic networked organization, this form focuses on independent operations along the organization's value chain, such as operations, distribution, marketing, and service. Organizations combine core competencies of other organizations to develop and sell new products faster by gaining economies of scale without adding permanent staff. According to John Sculley, former chairman of Apple Computer, "Ten or 20 years from now, you'll see an explosion of virtual corporations." Telepad Corp. of Reston, Virginia, is using this structure with more than two dozen firms to bring its new pen-based computer to the market

The benefit of this type of structure is that it lessens the costs of vertical integration and seizes the ability of world-class partners to bring a product to the market faster. Partners change as the needs of the organization change. A central part MCI's strategy is to match its core competencies in network integration and software with the strengths of other manufacturers of telecommunications equipment such as Rolm and British Telecommunications. The result is that MCI doesn't have to spend much of its own capital to fund hardware development, leaving more resources to build on its core

competencies in customer service and information networks. Such a strategy permits MCI to offer its customers a package of hardware and services that combines the talents of more than 100 other companies.

InterSolve Group, Inc., a Dallas-based management consulting firm that consists of four partners, also sees the benefits of this type of structure. For any particular engagement, this firm assembles managerial talent “just-in-time” to solve a client’s problem. InterSolve used this strategy to complete an engagement with First Interstate, a large bank. The firm assembled four teams of 26 experts to squeeze nearly \$14 million out of Interstate’s backroom operations. As soon as the engagement was completed, the teams were disbanded. According to Hayden Watson, a senior vice president for First Interstate, “As long as you keep their activities coordinated, you’re going to get a lot more result for your money.” Edward Mc-Pherson, a partner in InterSolve, states, “We can bring the right talent to fit the assignment as opposed to using talent already in inventory. We don’t have to warehouse staff or specialists.”

The availability of numerous potential partners eager to apply their skills and assets to problems facing an organization somewhere along its value chain is not only the key to success of the modular or virtual organization, but its Achilles’ heel, as well. The virtual/modular organization runs two risks: a partner who drops the ball and the risk of being “hollowed” out. The loss of control by Intel to NMB Semiconductor and Sharp to make products called flash memory chips reveals one potential hazard of this form of structure. Worried that it couldn’t make financial investments to retain its lead in this market, Intel enlisted these two companies to manufacture flash chips for it. But one of its suppliers, NMB Semi-conductor Co., had trouble getting its manufacturing process

up and running just as the demand for these chips was exploding. As a result, Intel could not get all the chips it wanted and lost market share. According to Intel's chairman, Andrew Grove, the virtual organization is just a "meaningless buzz phrase."

IBM's experience points out the second potential problem with this form of structure. To get into the market quickly, IBM relied on outsiders to develop key technologies: Intel for microprocessors and Microsoft Corporation for its operating software. While IBM won industry praise for its unprecedented decision to form a network with others, it also meant that IBM technology wasn't proprietary. IBM soon realized that it created a window in the market that it couldn't control. Hundreds of clone makers emerged with lower prices and better products than IBM. Firms that manufacture radios, televisions, video recorders, among others, have also been "hollowed" out or "deskilled" by allowing partners to acquire technical competence and proprietary information to sell products on their own.

A final pitfall is the constant temptation for a firm to stretch its core competencies beyond their limitations. That is, firms may seek to add protection to their core competencies by excessive concern for secrecy and heavy emphasis on legal documents. John Brown, who heads Xerox's Palo Alto Research Center, comments that the virtual organization is built on a web of trust and understandings-literally, on network intimacy. Unless all partners in the network can find partners with compatible goals and values, this structure is doomed to fail unless the environment changes faster than the competencies. For organizations to create new positions as "vice presidents for external relations" to monitor the outflow of technology and proprietary information would defeat the very purpose for adopting such structures and reduce permeability. Such measures constrain

the primary strength of the virtual/modular organization: its ability to efficiently allocate resources among member firms, uncoupling and recoupling them as needed with a minimum cost and loss of operating time. Fundamentally, these measures frustrate learning.

Horizontal Organization

Today's "hot" organization structure (or latest consultant rhetoric) is the horizontal organization. The horizontal organization is structured around management processes, not functions. Organizing around processes, as opposed to functions, permits greater self-management and allows organizations to dismantle cumbersome and costly hierarchical structures. The horizontal organization means that sets of customers define business units. The organization then groups its resources into units with people and processes needed to serve them.

Frank Ostroff and Doug Smith, consultants in McKinsey and Company Inc., indicate that managing a horizontal organization differs from managing a functional organization in several key ways. First, the structure is based on processes, not tasks. Performance objectives are based on customer needs, such as low cost or fast service. A company must identify the processes that meet those needs. These processes become the major vehicles for carrying out the organization's core competencies and designing a structure. Second, the hierarchy has little subdivision of processes. It's better to arrange teams that work together than to have teams work in series. Team members take on hiring, scheduling, and evaluating other team members. When a person applies for a job at Loral Vought Systems' Camden, Arkansas, plant, for example, its manufacturing, safety, and quality employees all sit together to make a hiring decision. Under this

arrangement, decisions are not made in series, but by the team. Third, information moves to those teams who have the authority to make a decision and does not get lost somewhere in the maze. Raw numbers go straight to those who need them in their jobs. Managers do not need to “interpret” these for others. Problems are solved and decisions are made by employees at the lowest level rather than by employees bucking them “upstairs.” Andrew Grove, president and CEO of Intel Corporation, coined the saying, “Our assets have legs: they walk home every day.” Indeed, a core competency of the horizontal organization is the knowledge that resides in employees. Recognizing this, the horizontal structure intentionally incorporates employees as key learning features in it.

First, in the horizontal organization, employees’ careers will be different. There will be fewer layers of management and employees will have to entertain more lateral than vertical moves. This view renders the traditional way of thinking about roles and positions as somewhat obsolete. A person’s title might not change for years, but the tasks assigned to the person will vary in terms of rigor and strategic importance to the firm. At Royal Dutch/Shell Group, managers are regularly rotated through assignments to give them a bird’s eye view of Shell’s global operations. The purpose is to give them a flexible perspective and the ability to adjust quickly to the demands of the new assignment without going through extensive training. These changes can also be threatening and demotivating for individuals who need stability. Conner Peripherals, Inc., a manufacturer of disk drives, recruits people whose expectations are similar to the new career paths they will experience in the firm, thereby ensuring an effective fit between personal and organizational goals. An individual’s effectiveness in getting things done is based on results through networking rather than on formal job descriptions and position

in the hierarchy. In this context, titles, seniority, spans of management, and formal position in the organization are not necessarily significant determinants of an individual's success and organizational power.

Second, in the traditional functional organization, job descriptions and information flows are all geared to control employees' behavior. If workers couldn't solve the problem, they "bucked" it upstairs to someone who could. In the horizontal organization, work is based on customers' needs. It is the workers, not middle or senior managers, who are empowered to make decisions that are critical to satisfying customer's needs. The few people who are left in the hierarchy between workers and senior managers will spend their time trying to change the organization, not control it. That is, they are exploring new technologies or reaching out for new customers. Managers will have to unlearn practices that have been ingrained and rewarded for years. The role of top management is to orchestrate the broad strategic vision, develop the proper administrative structure, and then create the cultural glue that can ensure unity of mission and purpose. Top management will become conductors of an orchestra-the music goes on, but is synchronized among different instruments. Top and middle managers will need to unlearn their controlling behaviors to afford others the opportunities to make decisions that will impact their organization's effectiveness and survival.

Last, the boundaries between organizations may become so fluid that organizations will become temporary arrangements among entrepreneurial cadres. Just like Wal-Mart's cash registers that, in effect, call a Procter & Gamble warehouse and tell it to ship a new box of tide to replace the one a person just bought, so too, might traditional boundaries among firms in different industries collapse. We have witnessed

this collapse in the high-technology sector. Many high-tech firms have access to their partner's internal information systems through electronic mail networks. Apple, for example, gives its partners access to its E-mail because it speeds up communications between different groups and gives them timely information on new product releases and the like. Additionally, Apple temporarily assigns its engineers to a partner when needed. This forges a crucial relationship with the partner and gives Apple access to vital information about the partner's culture and modus operandi

Learning Potential

Given that permeability, flexibility, and network intimacy (closeness to suppliers, customers, and competitors) are ways that organizations can learn and relearn critical skills, how do the various forms of organization rate for their learning potential?

The functional form does not provide employees close contact with customers. Employees are rewarded for honing their special talents within narrowly defined limits of their expertise. Cross-fertilization of ideas is constrained because employee mobility is usually limited to one's department. Experiences of employees, therefore, are limited to their functional area. Customer intimacy isn't fostered, learning is limited.

The divisional form of organization has many of the ills that the functional organization displays. That is, employees are rewarded for learning about their product, but are seldom given experiences to learn about other products and services. Operational excellence is fostered within each division. Rotation of employees among divisions is rare. This limits an employee's potential to learn about new products and to offer customers leading-edge products and services from other divisions.

The matrix organization affords employees new experiences and opportunities to learn from peers in different functional and/or geographic areas. The temporary assignment of employees to a project poses allocation of scarce resource problems. It may also stretch the organization's information processing capabilities beyond what they can handle.

The stable network form establishes key linkages up and down the value chain. By permitting suppliers to do what the organization cannot do as efficiently as its competitors, the organization runs a risk of being "hollowed" out or "deskilled" by the competition. The organization learns to manage its core functions where it can really add value, but loses its ability to learn new sources of competitive advantage from others in the network.

Modular organizations work best when they can achieve their twin objectives of collaborating with suppliers and directing scarce capital to their "core" competencies that give them a competitive edge. This structure keeps the organization's employees in constant contact with its customers and enables them to rapidly respond to customer requests. Employees are rewarded for developing networks with suppliers who are world-class in their business and willing to supply their organization with needed parts. Employees need to find reliable vendors that they can trust with their trade secrets. Depending on outside suppliers is rife with problems and exposes the organization to possible "hollowing" out by its suppliers.

The horizontal organization is also making impressive gains as a new way to organize. Instead of organizing employees around functions, the horizontal organization groups employees' processes. Each core process becomes a storehouse of knowledge.

Teams of individuals perform a series of tasks that are all related to a process, such as distribution or manufacturing. Individual team members are trained in new skills by their team members and rewarded for mastering these. Depending on the desires of the customers, employees will develop skills to satisfy that customer.

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