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HISTORY OF MANAGEMENT

After studying this chapter, you should be able to:

- A Understand the contributions that preindustrial organizations have made to the study of management.
- A Discuss the significance of the Industrial Revolution on management thought and practices.
- A Summarize the importance of classical management theory and behavioral management theory, and evaluate their limitations in application to management practices.
- A Identify the contributions that quantitative management theory and systems theory have made to the practice of management.
- A Discuss why contingency theory is useful for solving managerial problems.
- A Describe emerging theories of management and their application to managerial practices.

Many different perspectives on the practice of management have been advanced suggesting how managers should approach, diagnose, and solve organizational problems. Some perspectives attempted to solve problems that were of current interest to managers of that day. Other perspectives attempted to develop rules and guidelines for managers that could be useful in many different organizational contexts. Regardless of the managerial issue or problem that was of central concern to these perspectives, it is fair to say that each differed in its assumptions and methods that it recommended to managers for reaching a solution. A careful understanding of the events and issues that confronted managers in the past enables us to understand why different approaches have been recommended for solving managerial problems.

HISTORICAL FOUNDATIONS OF MANAGEMENT

The development of management theory and practice is best understood by exploring the historical foundations that presented specific problems which had to be overcome.¹ First, we will explore social and

1. For a discussion of why many problems confronted by early management theorists are of importance to managers today, see T. Stearns, A. Hoffman, and A. Roberts, "Managerial Reform in American Industry: An Analysis of the Taylor System and Its Modern Implications." (Paper presented at the Academy of Management National Meeting, August 1983)

cultural developments that preceded the emergence of specific writings on management. Then we will examine the effects that the Industrial Revolution had on management thought. Throughout the chapter we will discuss events that surrounded the introduction of new ideas in management. This will give you a clear picture of the problems and issues that writers and managers have attempted to address.

Preindustrial Societies

While managers have existed for a long time, the practice of management is relatively new. Prior to the beginning of the Industrial Revolution in seventeenth-century England, several organizational forms had emerged which required the use of "managers" in order to successfully achieve stated organizational objectives. Most noted of these organizations were the household, the tribe, the state, the church, and the military. It is in these organizations that we can identify early notions about how management is to be practiced.

With the emergence of villages and cities in ancient civilizations, as represented by Greek, Roman, and Chinese societies, came the need to administer the building of roads; establish judicial principles to oversee commerce and settle disputes; provide means to distribute food supplies; control the collection of taxes; and supervise military activities both within the State and among conquered territories. We find in the writings of early Egyptians, Hebrews, Greeks, and Romans expressions of the need for effective managers with explications of the duties and responsibilities assigned to their position, a need for training, and a network of authority that would establish control over activities in the hands of a centralized authority such as the emperor.²

Religious institutions, most notably the Catholic church, also contributed to the body of knowledge concerning organizational and managerial principles. While the objectives of the Church differed from those of the State, the Church incorporated many of the same principles of organization and management as established by the State. In addition, the Church developed methods and techniques directed toward commitment to values and attitudes, provided social support to the populace, and established conditions for membership.

Perhaps the most advanced form of organization in terms of creating and establishing principles related to the efficiency and meeting of objectives was the military. Indeed, many of the more sophisticated principles created and developed by the military, from Roman to Prussian armies, are still applied by managers of modern businesses. Most notable of these principles are:

2. For a more comprehensive discussion of early writings on management, see C. S. George, Jr., *The History of Management Thought*, 2d ed. (Englewood Cliffs, NJ: Prentice-Hall, 1972)

Performance—
the key to
success for the
military and
business!



- A Chain of command.** The chain of command established clear, unbroken lines of authority and responsibility from the senior position to the lowest level position in the organization.
- A Delegation of authority.** Due to the length of the chain of command, it became incumbent that decision-making authority be granted to middle- and low-level positions. Otherwise, the individual occupying the senior position would be overwhelmed with approving each activity necessary to the efficient functioning of the military units.
- A Staff.** The staff relationship refers to recruitment and training of individuals in specific practices and techniques to serve as advisors to individuals making critical decisions. As warfare became more sophisticated, the need for staff increased because generals were unable to be fully aware of every tactic available in a certain situation. While staff accrued power due to their expertise, the final decision was the responsibility of the officer in charge.
- A Unity of command.** The principle that no individual has more than one supervisor is known as the unity of command. Receiving orders or directives from two or more superiors can lead to confusion, contradictory requests, and instability in military operations.

The importance of establishing and following these principles by military organizations cannot be overly emphasized. Unlike the State or Church, the military had greater demands on its performance in terms of

efficiency and reducing the amount of error in its activities. Military organizations prone to error and inefficiency would ultimately lose in battles and thus disappear as vital organizations. As we will see later, organizations operating in threatening environments must reduce errors in their activities to a greater extent than those organizations operating in benign environments.

Many other early examples of management principles and concepts could be cited. However, it was not until the emergence of the Industrial Revolution that a literature on management and organization began to be seriously developed.

The Industrial Revolution

The significance of the Industrial Revolution is that it led to radical changes in the way people work, socialize, engage in politics, and carry out their daily lives. Prior to the Industrial Revolution in Europe and the United States, most human labor was performed in relation to the soil. Serfs and peasants alike extracted their livelihood from planting and harvesting crops on their land or land owned by the aristocracy. However, not all labor was agrarian. Artisans comprised a small segment of labor which was mostly confined to the cities and concentrated in the production of goods such as cloth, shoes, tools, and weapons. However, it was the advancement of technology in several key spheres that culminated in the rapid emergence and growth of industrial manufacturing.

Foremost among the technological advancements was the discovery of how to derive energy from steam. The steam engine, as perfected by James Watt, provided a mechanism for obtaining cheap and efficient energy. Moreover, steam power allowed for the concentration and development of machinery that could lower production costs, produce larger volumes of goods, and ultimately provide for a swifter transportation of those goods to markets. However, this could not be achieved without a readily available labor force. As factories began to emerge based on the use of this new technology, the need for greater numbers of laborers generated political tension in many European societies. With most of the labor (much of which was under servitude or slavery) dispersed on farmlands, attempts to reform society began to occur. Indeed, much of the political unrest in Europe during the nineteenth century was due to political power struggles between the aristocratic classes and a new emerging class of factory owners struggling to redefine the role that labor would play in the Industrial Revolution.

Ultimately, labor in Europe and the United States was freed from servitude with many of the peasants moving to the city to obtain work in the developing factories. As a result, human labor and energy were transferred to machines and industrial development spread throughout Western civilization. However, an additional technological advancement was necessary in order for factories and industries to grow. While goods could

be produced in greater quantities, at cheaper costs, and in faster time, customers had to be available. Again, steam power and its application to transportation, such as railroads and ships, provided access to previously unavailable markets. Where a single city may have constituted a market for the goods produced in a factory, railroads and ships could now efficiently transport the goods to be sold to new customers. Hence, it was both the invention of new forms of energy for the production and transportation of goods and radical political changes in societies that promoted the Industrial Revolution.

The rapid growth of factories posed different management problems than those encountered in previous organizational forms. Governments could operate without competition or having to show a profit; the Church could organize and manage its activities because of the devotion of the faithful; and militaries could control large numbers of troops through a rigid hierarchy of discipline and authority. Managers of factories, however, could not resort to any of these techniques and thus had to rely on a different set of principles and rules in order to be effective.[^]

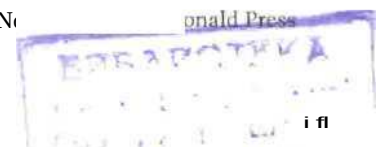
As the factories grew in employee size, it became more difficult for one person to oversee the coordination and control of work. The solution to this problem was the hiring and training of managers to oversee segments of the production process. That is, managers were needed to plan the work to be performed, to assign tasks and responsibilities, to direct workers, and to respond to problems encountered in the work process. Yet this was not possible in most cases. Trained managers were in short supply. Most managers employed had to learn their position based on ad hoc problem solving which oftentimes had as much failure as it did success. To complicate the task of managing in a factory, many laborers did not have access to education; thus, literacy was low as was the ability to perform basic mathematical calculations. Great amounts of managerial time were therefore spent in providing oral instructions and demonstrations of tasks to be performed. The focus of managers, therefore, was more on directing subordinates than on coordinating and controlling the work force. The effect of this situation was a loss of production efficiency.

During this time, several individuals began to address issues of management both in practice and in writings. Two of the most recognized are Robert Owen and Charles Babbage.

Robert Owen. Robert Owen (1771-1858) was an owner of a mill in New Lanark, Scotland. He came to recognize that human resources were as valuable to the production of goods as were financial and material resources. Owen believed that factory workers would be more productive if they were motivated through rewards rather than punishments. He



3. D. A. Wren, *The Evolution of Management Thought* [New York: McGraw-Hill Book Company, 1972]



experimented with several motivating techniques and became a strong advocate for improving working conditions through increasing the minimum working age of children to 10 years, providing regular meal breaks for workers, and reducing the work day to 10 hours with no night work for children. While these ideas are widely accepted now, they were considered "too radical" by other manufacturers and politicians of that time. Owen's frustration culminated when he left England for the United States and founded a communal township at New Harmony, Indiana, in 1824 which incorporated much of his philosophy. Many of Owen's ideas about the management of human resources were assimilated into a school of thought, referred to as behavioral theory, that emerged in the 1900s.



Charles Babbage. Charles Babbage [1792-1871] is considered a genius for his contribution to the development of the modern school of English mathematics, his application of mathematic principles to management, and his development of an "analytic engine" whose ideas are represented in the modern computer in the form of program control, microprogramming, multiprocessing, and array processing. Babbage's major contribution to management is his book *On the Economy of Machinery and Manufactures* in which he described in great detail how mathematics could be applied to problems of inefficient use of materials and facilities.⁴ Many of his ideas would be expressed both in classical management theory and in quantitative management theory that were espoused in the 1900s. Babbage also had a strong understanding of the importance of human resources as related to efficiency. He advocated profit-sharing plans and bonus systems as ways to achieve better relations between management and labor. Despite the significance of his contributions, Charles Babbage was considered by his contemporaries to be eccentric, if not on the verge of lunacy. Upset over the number of English street organ-grinders outside of his home, he would counter with the blowing of bugles in front of his house much to the dismay of his neighbors. One friend noted that "He spoke as if he hated mankind in general, Englishmen in particular, and the English government and organ-grinders most of all."⁵

Despite the suggestions by Owen and Babbage, it was not until the late 1800s that owners and managers began to raise concerns about the problem of material and human inefficiency. This was due largely to markets becoming saturated, demands for greater profits, and competition that was becoming more keen. This emphasis on cutting costs and increasing efficiency led to the emergence of the classical school of management theory.

4. C. Babbage, *On the Economy (if Machinery and Manufactures* (London: Charles Knight, 1835); reprinted, 4th ed., (New York: Augustus M. Kelley, Pubs., 1963]

5. "The Cranky Grandfather of the Computer," *Fortune*, (March 1964), 112-13.

CLASSICAL MANAGEMENT THEORY

It is important to recognize that while the Industrial Revolution was having similar impacts on Europe and America, some important distinctions can be made. Unlike Europe, America was a country undergoing rapid growth and expansion. Midwestern and western lands were sparsely inhabited and contained large quantities of untapped minerals, forest reserves, and fertile farmland. As the population moved westward, new markets were opened for enterprises and the need for power, transportation, and communication became critical. With the implementation of these technologies through applications of steam and coal power, development of rail systems, and the establishment of telegraph lines, entrepreneurial activity was abundant and highly competitive. The need to develop management techniques that would integrate technology, materials, and worker activities in a productive and efficient manner was a central concern during this time period. Because of these events in the United States and the impact of the Industrial Revolution in Europe, classical management theory evolved in an effort to uncover those techniques that would solve problems of organizational efficiency in the production of goods and services.

Classical management theory can be divided into two perspectives distinguished by the issues and problems that they address. One perspective, administrative theory, evolved from both European and American academicians and managers concerned with the nature and management of the total organization. Issues and problems that they sought to address concerned the technical efficiency of the organization. A second perspective, scientific management, emerged from predominately American scholars and managers and focused on issues concerning the management of work and workers.

Administrative Theory

Administrative theory focuses on the total organization and attempts to develop rules and principles that will direct managers to more efficient activities. Prominent writers in this perspective are Henri Fayol, Max Weber, and Chester Barnard.



Henri Fayol. Henri Fayol (1841-1925) was a French mining engineer who spent many of his latter years as an executive for a French coal and iron combine where he worked for 30 years. In 1916, as director of the company, Fayol penned the book *General and Industrial Management* which first became a classic in Europe and later, upon translation into English, a classic for American management. In his book, Fayol classified the study of management into several functional areas which are still commonly used for providing executive training and guiding corpo-

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rate development programs. The functional areas identified by Fayol are planning, organizing, directing, coordinating, and controlling.

Fayol set down specific principles for practicing managers to apply that he found to be useful during his years as a manager. He felt these principles could be used not only in business organizations but also in government, the military, religious organizations, and financial institutions. Some of these principles are still widely cited and were discussed in Chapter 1. The 14 principles are described in Figure 2-1:

Figure 2-1

FAYOL'S PRINCIPLES FOR EFFECTIVE MANAGEMENT

Division of	Like many writers before him, Fayol believed that dividing labor into specialized units would lead to advantages by reducing inefficiency through less waste, increased output, and simplifying the task of job training. This applied to both laborers and managers in the organization.
Authority:	Authority is the "right to give orders and the power to exact obedience." Fayol believed that formal authority [granted to the position] and personal authority (derived from intelligence and experience) should be complementary. Further, authority produced responsibility which is the obligation to carry out assigned duties satisfactorily.
Discipline:	Poor discipline is the result of poor leadership. Good discipline exists when workers and managers respect the rules governing activities in the organization.
Unity of Command-	The principle that no individual should have more than one supervisor was derived from military codes, and Fayol believed it was fundamental to effective management of an organization.
Unity of Direction:	Tasks of a similar nature that are directed toward a singular goal should be grouped under one manager.
Subordination of Interests:	The goals of the organization should take precedence over individual goals. Fayol believed that when individual goals prevailed over organizational goals, the outcome would be conflict.
Remuneration:	Rewards in the form of pay, bonuses, and benefits should be ¹ If all employees in the organization.
Centralization;	The concentration of power and authority at the upper levels of the organization is centralization; when dispersed throughout levels, decentralization; Fayol believed that the optimum depended on special considerations such as: the size of the firm. Large firms generally required more decentralization than small firms.
Scalar Chain:	The scalar chain, or chain of command, stipulates that authority and communication should be routed through positions from top to bottom in the organization.
Order:	Human and material resources should be coordinated in such a way that there is a place for everything and everything has its place.

Equity:	Justice and kindness should be pursued by managers when dealing with subordinates.
Stability of Tenure:	Staffing should be dictated through planning in order to avoid high employee turnover.
Initiative:	Employees should be encouraged to act on their own volition when they have an opportunity to solve a problem.
Esprit de Corps:	Managers should emphasize teamwork by building harmony and a sense of unity among

Source: From GENERAL AND INDUSTRIAL MANAGEMENT by Henry Fayol. Copyright © 1949 by Pitman Publishing Corporation.

Fayol's principles were not meant to be exhaustive. Rather the attempt was to provide managers with the necessary building blocks to serve as guidelines for managerial activities. In sum, the principles emphasize efficiency, order, stability, and fairness. While they are now over 80 years old, they are very similar to the principles which are still being applied by managers today. The problem with Fayol's principles of management is knowing when to apply them and how to adapt them to new situations.



Max Weber. One prominent writer of the classical school of management was Max Weber (1864-1920). Weber was born to a wealthy family with strong political ties in Germany. As a German sociologist, editor, consultant to government, and author, Weber experienced the social upheaval brought on by the Industrial Revolution and saw the emerging forms of organization as having broad implications for managers and society. Adhering to a perspective that viewed society as becoming increasingly rational in its activities, Weber believed that organizations would become instruments of efficiency if structured around certain guidelines. In order to study this movement towards "rationality" of organizations, Weber constructed a typology, termed a bureaucracy, that described an organization in its most rational form. Weber outlined the following structural characteristics:

A Hierarchical structure. A well-defined hierarchy of authority is essential for rationally controlling the behavior of employees according to Weber. Positions are established and linked by a chain of command in a continuous branching out so that multiple layers exist in the hierarchy. Power and authority would increase as one moves up through the levels of positions in the organization. This is similar to a scalar chain.

Division of labor. A bureaucratic organization will divide the tasks to be performed as narrowly as possible. Weber argued that the most rational division of labor would reduce a complex task into several operations. As discussed earlier, the reduction in scope of operations would make the task simpler for the individual performing it. This leads to greater efficiency in that the individual performing the task develops a level of expertise and new employees can be trained in a narrower task more quickly than if the task is broad.

Rules and regulations. Critical to the bureaucratic form of organization are explicit rules and regulations governing decision making and interpersonal behaviors. Weber believed that continuity in rules and regulations was necessary to maintain order and enhance organizational achievement of goals. Where owners, managers, and workers may come and go, the rules and regulations provided organizational stability. Moreover, rules and regulations serve to restrict decision makers who may feel compelled to act in their own interests or beliefs rather than in the interests of the organization.

Technical competence. Managers in a rational organization will assign personnel to positions based on adequate technical training as opposed to friendship, family ties, or other forms of favoritism. Weber believed that an organization that did not strive to match skills objectively to the position would ultimately end up being inefficient.

Separation from ownership. Owners were believed to be one cause of inefficiency in an organization because decisions would be based more on profits than on increasing production efficiency. By having organizational members separated from ownership, decisions would have a more impersonal quality and would be based on what is best for achieving overall organizational goals as opposed to one goal such as greater profits.

Positional power. Weber believed that organizations achieve rationality when power and authority are vested in the position and not in the incumbent. If power and authority were individual attributes, Weber felt that individuals would use the power and authority for their personal goals rather than the goals of the organization. By vesting the position with power and authority; managers who did not perform adequately would lose all power and authority by simply being removed from their position.

Record keeping. Since the rational organization will outlive its members, it is necessary to develop a memory. Minutes of meetings, written documents, and financial statements were all essential information for future decisions. In order to maintain continuity and efficiency over time, Weber felt that managers

should have access to an organization's records in order to avoid previous mistakes and identify those activities that were successful.⁶

Due to the emphasis on efficiency that had developed around the turn of the twentieth century, many management scholars and practitioners interpreted Weber's writings on bureaucracy as a prescription for organizing. Weber, however, was more interested in developing his bureaucratic typology as a method for comparing organizational forms across societies. While stating that he did not believe any organization would perfectly meet the dimensions that compose his bureaucratic model, he felt that some organizations would come closer than others. The closer to the bureaucratic type, the more rational society was becoming, and it was Weber's interest in the rationality of social life that directed his attention to the study of organizations.⁷



Chester Barnard. Chester Barnard (1886-1961) drew on his own experiences as a manager and his extensive reading of sociological theory in constructing a theory of the organization. Born on a farm in Massachusetts, Barnard received a scholarship to attend Harvard, which he supplemented by tuning pianos and running a small dance band. He completed the requirements for an economics degree in three years but was denied a degree for failing to have a laboratory science. He stated that he was "too busy" to attend the laboratory section and felt it unnecessary since he had passed the science course with distinction. However, he was hired by American Telephone and Telegraph in 1909 and became the president of New Jersey Bell in 1927. A tireless "organization man," Barnard was active in volunteer work, helping to establish the policies of the Atomic Energy Commission, and serving as president of both the United Service Organization and the Rockefeller Foundation. Barnard's most famous work, *The Functions of the Executive*, viewed the organization as a "cooperative system" of individuals which comprised three universal elements: (1) willingness to cooperate, (2) common purpose, and (3) communication.⁸ The absence of any one of these three elements would lead to the disintegration of the organization, according to Barnard.

Like Weber, whose work he had read in the original German editions, Barnard viewed the distribution of authority as an important pro-

6. M. Weber, *The Theory of Social and Economic Organization*, trans. A. M. Henderson and T. Parsons, ed. T. Parsons [New York: The Free Press, 1947], 329-33.

7. M. Weber, *Max Weber*, ed. S. M. Miller (New York: Thomas Y. Crowell Co., 1963), 10.

8. C. L. Barnard, *The Functions of the Executive* [Cambridge, MA: Harvard Univ. Press, 1938].

cess within the organization. However, he felt that the source of authority did not reside in the person who gave the orders; rather authority resided in the subordinates who could either choose to accept or reject directives from their superiors. Subordinates would assent to authority when four conditions were satisfied: (1) they could and did understand the communicated directive; (2) they believed that the directive was consistent with the purpose of the organization,- (3) they believed that the directive was compatible with their own personal interests,- and (4) they were mentally and physically able to comply with the directive.⁹ This view of authority has become known as **acceptance theory**.

Scientific Management

Whereas administrative theory focuses on the methods by which managers could structure the overall organization to make it more effective, scientific management addresses issues concerning the management of work. Prominent contributors to scientific management are Frederick W. Taylor, Frank Gilbreth, Lillian Gilbreth, and Henry Gantt.



Frederick W. Taylor. Before the 1880s, there were almost no systematic efforts to find ways to properly manage workers. While the writings of Fayol, Weber, and Barnard provided a blueprint for structuring organizations and organizing managerial activities, the practice of management was based primarily on experience, intuition, and common sense. Frederick W. Taylor (1856-1915), a self-taught engineer who worked his way up from common laborer to chief engineer at the Midvale Steel Company by the age of 28, tried to change that view. Taylor espoused a view that managers should study work scientifically in order to identify the "one best way" to perform a task. His engineering background provided a model for establishing principles of management that would guide scientific analysis of work so as to improve task efficiency. Taylor's principles can be summarized as follows;

- A *Determining the one best way.* Taylor believed that managers should observe and analyze work in order to uncover the one best way to perform the job and then put that way into operation. To enable managers to study work scientifically, Taylor promoted the use of time and motion studies. **Time and motion studies** measure all task movements made by a worker and try to eliminate those that do not lead to increased productivity.
- A *Scientific selection of personnel.* Taylor did not believe that **any** individual with proper training would necessarily be the most competent to perform a certain task. Taylor was a strong

⁹, *Ibid.*, 163,

advocate of matching physical traits to the dimensions of the task to be performed. While recognizing that the application of scientific principles would increase efficiency in task production, Taylor felt that some individuals would be more suited to a task than others and that managers should seek out those with proper traits. For Taylor, the most important physical traits of a worker were production capability, muscle durability, and resistance to fatigue. Selection of workers based on personality or emotions was to be avoided.

- ▲ *Financial incentives.* While matching the correct worker with the task was essential to increasing worker efficiency, Taylor recognized that another element must be added to the equation. Workers had to be motivated. At the time, the most common form of wages was the hourly rate. Taylor felt that motivation would be enhanced by the **piece-rate** system of financial incentives, where workers would be paid according to what they produced rather than the number of hours they worked.
- ▲ *Functional foremanship.* Finally, Taylor advocated that responsibility should be divided between managers and workers. This principle specified that separate managers would plan, direct, and evaluate the work process while the worker was responsible for performing the actual task. Thus, a worker would take orders from the functional foreman depending on the stage in which the work process existed.¹⁰

Under the Taylor system, the first three principles formed the core of the scientific management approach. The final principle was considered innovative in terms of the philosophy of management in that it introduced the notion of relieving workers from the responsibility to plan, initiate, and evaluate their work and instead they could focus more directly on the actual production process.¹¹

In practice, Taylor's ideas led to huge success in the increase of production and higher wages as evidenced by its application in the steel industry. However, many of Taylor's methods were met with resistance as workers and unions feared that greater physical demands and increased layoffs would result from the implementation of the techniques. In addition, many owners and managers used the methods to increase their own profits and earnings, thus depriving workers of sharing in the benefits of increased and more efficient production. Indeed, these were the outcomes when Taylor's methods were implemented in the Simonds Rolling Machine Company, a firm that manufactured ball bearings. By 1912, with strikes occurring at the Watertown Arsenal in Massachusetts and opposi-

10. F. W. Taylor, *Principles of Scientific Management* (New York: Harper & Brothers, 1911]

11. *Ibid.*

tion from labor unions solidified, Congressional hearings were held on Taylor's methods concerning their ethics and possible worker exploitation. Taylor believed and expressed his philosophy before Congress by arguing that his methods would work only if labor and management would share equally in the rewards of increased productivity.¹²

Taylor's ideas for improving productivity and efficiency in the workplace had a long-lasting impact on American industry. Manufacturers turned increasingly to mass-production methods to which Taylor's methods were highly suited. Though strong evidence exists that Taylor may have falsified some of his findings that supported the merits of his methods, the methods did lead to increased productivity and efficiency in many plants.¹³

While many of Taylor's techniques, such as time and motion studies and piece-rate work, are commonly used in industry today, the philosophy of scientific management was not accepted in its entirety in the United States. Of interest is the fact that many European societies found Taylor's philosophy more suitable to their culture and incorporated many of Taylor's ideas in industry.¹⁴ Even Lenin, at the time he was Premier of the Soviet Union, advocated the adoption of scientific management principles to Soviet industry.¹⁵



Henry L. Gantt. There were many other early contributors to scientific management. One was Henry L. Gantt (1861-1919), who had worked with Taylor in implementing his methods at Midvale, Sirmonds, and Bethlehem Steel. Gantt, believing that the piece-rate system developed by Taylor was not having the desired level of impact, focused his attention on techniques that would further motivate workers. One of his innovations, a modification of the piece-rate system, was a task-and-bonus wage system whereby production goals were established for the worker. If the worker achieved the goal, a bonus in addition to the day wage was provided. If a worker fell short of the goal, he or she would still receive the day wage. In addition, if the worker achieved the goal, the foreman or immediate supervisor would also receive a bonus. This was implemented under the assumption that if the foreman was also rewarded, more emphasis on training the worker to do the job efficiently would occur.

12. *Hearings before Special Committee of the House of Representatives to Investigate the Taylor and Other Systems of Shop Management under Authority of House Resolution 90* [Washington, DC: U.S. Government Printing Office, 1912], 1451.

13. C. D. Wrege and A. C. Perroai, "Taylor's Pig-Tale; A Historical Analysis of Frederick W. Taylor's Pig-Iron Experiments," *Academy of Management Journal* (March 1974), 6-27.

14. Wren, *Evolution of Management Thought*, chap. K.

15. U. H. Miles, *Macro Organizational Behavior* [Glenview, IL: Scott Foresman 6t-Co., 1980], 93.

Another of Gantt's contributions was his development of the **Gantt chart**, a technique to show on a graph the scheduling of work to be done and itemization of the work that has been completed. For example, a chart might show which machines will be used, or have been used, for various tasks over time. Although it is a simple idea, the Gantt chart was a major development in methods for controlling production. The chart is used extensively today in many manufacturing firms.

As with Taylor, Gantt believed that production efficiency was the most important consideration of a manager. However, Gantt had greater concern for the psychological welfare of the worker in regard to the production process. Gantt's development of the task-and-bonus system was spawned by his belief that a generous bonus system would lead to more satisfied employees and therefore better output.



The Gilbreths. Lillian Gilbreth [1878-1972] and Frank Gilbreth (1868-1924), a wife and husband team, were early backers of Taylor's scientific management philosophy. With Lillian's knowledge of management and psychology, resulting from her work on a doctoral thesis, and Frank's understanding of the intricacies of work resulting from his experiences in construction, a unique and effective team was formed. Whereas Taylor often tried to find ways to have a task done faster by speeding up the worker, the Gilbreths tried to increase speed by eliminating movements that were discovered to be unnecessary. For instance, Frank's early work experience as an apprentice bricklayer focused his attention on the process of laying brick. Working together and using photo stills taken from the filming of bricklayers, they discovered that one could reduce the number of motions that a bricklayer performed in the task from 18 to 4. This led to an increase in bricks laid per day from 1,000 to 2,700 without speeding up the worker.¹⁶ Their success in this area led them to focus on tasks performed by workers in the manufacturing industries.

The Gilbreths did not limit their research to the discovery of the one best way of performing a task. They believed that motion and fatigue were interrelated and that if one could reduce the number of motions a worker made in performing a task, worker fatigue would also be reduced. To this end, the Gilbreths focused their attention on the psychology of management, which was the topic of Lillian's doctoral thesis.¹⁷ As a result, the Gilbreths devised methods for training and developing workers to rotate through tasks under the assumption that diversity in the workplace would boost morale.

16. Wren, *Evolution of Management Thought*, 162.

17. Like many women during this time period, Lillian faced discrimination due to her gender. In 1914, the thesis was published titled *The Psychology of Management* with the proviso, that the author be listed as "L. M. Gilbreth" to avoid reference to her gender.

The Gilbreths did not confine their ideas solely to the workplace. As documented in a book written by 2 of their 12 children titled *Cheaper by the Dozen* (later a popular movie), Frank and Lillian applied many of their ideas to their family. The children note that their father buttoned his vest from the bottom to the top, instead of top to bottom, because he could save four seconds. By using two razors to shave with, he could reduce shaving time by 44 seconds, but he abandoned this technique because it took two minutes per bandage to treat the cuts. The children insist that it was the two minutes lost and not the cuts that bothered him the most.¹⁸

Evaluation of Classical Management Theories

Classical theories and the principles derived from them continue to be popular today with some modifications. Many criticisms have been directed at the classicists. Several major ones are discussed here.

Reliance on Experience. Many of the writers in the classical school of management developed their ideas on the basis of their experiences as managers or consultants to only a few firms. While this does not necessarily make their principles invalid, it does tend to focus the principles on a certain type of organization. For instance, Taylor's and Fayol's work came primarily from their experiences with large manufacturing firms that were experiencing stable environments. It may be dangerous to generalize from those situations to others—especially to young high-technology firms of today that are confronted daily with changes in their competitors' products.

Untested Assumptions. Many assumptions that were made by classical writers were based not on scientific tests but on value judgments that expressed what they believed to be proper life-styles, moral codes, arid pursuit of success. For instance, the classical approaches seem to assume that workers are primarily motivated by money and that they work only for more money. They also assume that productivity is the best way to measure how well a firm is performing. And, they view the life of a worker as ending at the plant door. In this sense, they fail to recognize that employees may have pursuits, wants, and needs outside of the workplace and view their job as a means to other activities.

Failure to Consider the Informal Organization. By stressing formal relationships in the organization, classical approaches tend to ignore informal relations as characterized by social activities, rise of group leaders aside from that specified by the formal organization, and so

18. F. B. Gilbreth, Jr., and E. G. Carey, *Cheaper by the Dozen* (New Crowell Co., 1948), 3.

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forth. When such things are not considered, it is likely that many important factors affecting satisfaction and performance, such as letting employees participate in decision making and task planning, will never be explored or tried.

Unintended Consequences. Classical approaches aim at achieving high productivity, at making behaviors predictable, and at achieving fairness among workers and between managers and workers; yet, their intentions fail to recognize that several unintended consequences can occur in practice. For instance, the heavy emphasis on rules and regulations may cause people to obey rules blindly without remembering their original intent. Oftentimes, rules provide employees with a minimum level of performance that the firm expects them to achieve. Thus, firms would only be obtaining a minimum level of performance from their employees when perhaps much more could be achieved if the rule were not so explicit.

Human Machinery. Classical theories leave the impression that the organization is a machine and that workers simply are parts to be fitted to the machine to make it run efficiently. Thus, many of the principles are concerned first with making the organization efficient, with the assumption that humans will comply with the work setting if the financial incentives are agreeable.

While many of these criticisms leveled at the classical school are harsh, several points need to be made in defense of writers during this period. First, the work force was not highly educated or trained to perform many of the jobs that existed at the time. It was not common to have people think in terms of what "career" they were going to pursue. Rather, for many, the opportunity to obtain a secure job and a level of wages to provide for their family was all that was demanded from the work setting.

Second, much of the writing took place when technology was undergoing a rapid transformation, particularly in the area of manufacturing. Indeed, for many writers, technology was the driving force behind organizational and social change. Thus, it was assumed that all humankind could do was to adapt to the rapidly changing conditions. As a result, many manufacturing firms were inefficient and managers were in search of solutions to these problems.

Finally, very little had been done previously in terms of generating a coherent and useful body of management theory. That is, many theorists were required to write from "scratch," relying on experience rather than having access to knowledge about the successes and failures of other writers in the management area. Thus, while their focus may have been narrower than what is preferred today, it would perhaps be considered broad in light of the historical context of their writings. With this in mind, we now turn our attention to approaches that emerged after classical writers—approaches which benefited from their successes and were attempts to rectify their mistakes.

BEHAVIORAL MANAGEMENT THEORY

During the 1920s and 1930s, the United States was experiencing another force of upheaval not unlike that caused by the Industrial Revolution. Though limited in scope, there were similar ramifications in the way people work and in the way managers manage those who work.

Culturally and socially the United States was undergoing change. People were moving to the cities in greater numbers. Economic growth was rapidly giving people an opportunity to spend money on leisure and household items their parents could only dream about. Women were given the right to vote, unions were now organized and playing an integral role in politics and the economy, and the first minimum wage legislation had been passed. Prior to the stock market collapse of 1929, a genuine sense of optimism had swept the country and values and attitudes toward government, people, families, and work were being transformed. As a result, many of the techniques applied by the classical theorists to the workplace no longer seemed to work effectively.

Several prominent theorists began to direct their attention to the human element in the workplace. Elton Mayo, Douglas McGregor, Chris Argyris, and Abraham Maslow were writers who addressed this issue by contending that increased worker satisfaction would lead to better performance. It was their belief that a greater concern by management for the work conditions of the employee would generate higher levels of satisfaction; thus evolved behavioral management theory.



Elton Mayo

One prominent pioneer of the behavioral school was Elton Mayo (1880-1949), a psychologist who had conducted field research among aboriginal tribes in his native country of Australia. Upon his arrival in the United States, he joined the Harvard Business School faculty, convinced that economic incentives only partially explained individual motivation and satisfaction.¹⁹ Along with Fritz Roethlisberger, William Dickson and others, Mayo formulated theories concerning the factors that increased human motivation and satisfaction which were later to become the foundations of the human relations movement in management. However, their ideas did not reach wide circulation until they were requested to assist in a research project that had apparently failed.

In 1924, two researchers, Vernon and Wyatt, began an experiment at the Hawthorne plant at the Western Electric Company located in Cicero, Illinois. Their experiment was designed to identify factors other than

19. E. Mayo, *The Social Problems of an Industrial Civilization* [Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1945]

fatigue that would diminish worker productivity. Initially, it was believed that physical surroundings [e.g., noise, light, humidity) would have an impact on productivity. Testing was conducted by selecting two groups of women who would perform an assembly operation with each group in a separate room. One group was to be the control group where no change in the physical surroundings would be made. The second group would perform their tasks under conditions where the physical surroundings would be altered. As various features of the physical surroundings were altered, the researchers would record the level of output and compare it with the output of the control group.

One such alteration of the physical surroundings of the control group was the level of lighting. Illumination was increased and the researchers recorded an increase in output as well. To further test their hypothesis, the light was dimmed. Much to their surprise, output by the women increased again. Even when light was reduced to the point where it resembled moonlight, output increased. What made this finding even more difficult to interpret was the fact that the control group was increasing its output without having any of its physical surroundings altered. These outcomes were also obtained when the researchers expanded the length of the work day and eliminated rest periods. Indeed, many of the women reported that they were more satisfied with their jobs than before the experiments began.

In 1927, Mayo and his team were called in to assist in the interpretation of the results and to conduct further experiments as needed. One such experiment was to alter supervisory authority so that the women could determine on their own when they would take a rest break. Another was to increase the salary of the women in the experimental groups while the women in the control group would keep the same pay. Again, productivity went up in both the control and experimental groups. After several years of intensive study, Mayo and his colleagues began to piece together what was happening. First, they concluded that a financial incentive was not a factor influencing productivity since output went up in both groups though only the control group received more pay. Instead, they learned through interviews and observation that an "emotional chain reaction" was causing the increase in productivity.²⁰ Having been singled out to be participants in the experiment, the women developed a group pride that motivated them to increase their performance. No longer did they feel that they were isolated individuals in the plant, but now felt that they were part of an important group. The support received from their supervisors and the opportunity to make decisions about their job contributed to this motivation.

20. F. J. Roethlisberger and W. J. Dickson, *Management and the Worker: An Account of a Research Program Conducted by the Western Electric Company, Hawthorne Works, Chicago: with the Assistance and Collaboration of Harold A. Wright* (Cambridge, MA: Harvard Univ. Press, 1939)

Mayo and his colleagues realized that an important contribution to the study and practice of management had evolved from a seemingly failed experiment. First, the Hawthorne study established that workers were not so much driven by pay and working conditions as by psychological wants and desires which could be satisfied by belonging to a work group. Second, the chance by workers to make decisions concerning the task, whether as individuals or in a group, was a stimulus to treat the task as more important. And finally, recognition by superiors made workers feel that they made a unique and important contribution to the operation of the organization.

The Hawthorne experiment, therefore, served as a turning point in the study of management. The study firmly established that organizational outcomes were often a result of human behavior and that workers could not be treated as givens in the sense that they were merely extensions of the machinery. As the results of the study became known among theorists and practitioners alike, an outpouring of research was conducted based on many theories and discoveries made in psychology. Thus, the Hawthorne study opened the study of management to a whole new arena of ideas from the social sciences that had previously been ignored. And, as an unintended contribution to research methodology, the experiments led to a re-thinking of field research practices. That is, the researcher can influence the outcome of the experiment by being too closely involved with the subjects who are participating in the experiment. This outcome, referred to as the Hawthorne effect in research methodology, is exemplified by the Hawthorne researchers actively participating in the selection of the subjects to be studied and discussing the intent of the experiments with the subjects.



Douglas McGregor

One individual who shared a view similar to that of Mayo and his colleagues was Douglas McGregor (1906-1964). McGregor felt that organizations were often designed based on faulty assumptions about human behavior. Those assumptions were that most workers disliked work, that workers preferred to be directed by supervisors rather than assume responsibility for their tasks, and that workers were more interested in monetary gains than in performing their jobs well. Because of these assumptions, McGregor felt that managers were prone to design organizations that were centralized in decision making, contained numerous rules and regulations, and required close supervision of subordinates. Thus, for fear of technical and financial inefficiency, McGregor felt that organizations over-emphasized control mechanisms.

McGregor labeled these assumptions as Theory X and developed an alternative set of assumptions which he labeled Theory Y. Theory Y assumptions stated that workers can enjoy their work under favorable conditions and can provide valued input to the decision-making process

of the organization. Rather than develop needless mechanisms of control in the organization, McGregor felt that managers should emphasize coordination of activities by providing assistance to workers when problems are identified.²¹



Chris Argyris

Chris Argyris (1923-) also expanded on the work of the Hawthorne experiments by challenging the basic assumptions of the classical school concerning worker motivation and satisfaction. Argyris argued that an overemphasis on control by managers encouraged workers to become passive, dependent, subordinate, and to shirk responsibility. As a result, workers will become frustrated and dissatisfied with the workplace and will either quit their jobs or engage in behaviors that hamper the achievement of organizational goals. Many of his ideas were developed from the belief that as people mature, they develop new attitudes and behaviors that affect their life-styles. Some of those attitudes and behaviors are a movement toward independence, a broadening of interests, greater diversity in activities, and a desire to assume more control over their lives. Organizations that emphasize control are, in actuality, treating individuals as if they were immature.²²



Abraham Maslow

Abraham Maslow (1908-1970) is most noted for suggesting a theory that humans were motivated by needs that exist in a hierarchy. The most basic needs were physiological and when satisfied, humans would then be motivated to satisfy needs for safety, love, esteem, and self-actualization.²³ In Maslow's theory, a person moved up the ladder of needs as each level was satisfied. Maslow's theory of "hierarchical needs" will be described in more detail in Chapter 3.

Evaluation of the Behavioral School

Contributors to the behavioral school advanced our understanding of management by emphasizing the importance of the individual within the organization—an element ignored by writers in the classical school. That is, social needs of individuals, group processes, and subordinate-

21. D. McGregor, *The Human Side of Enterprise* (New York: McGraw-Hill Book Co*, 1960)

22. C. Argyris, *Personality and Organization: The Conflict between the System and the Individual* (New York: Harper & Brothers, 1957)

ed. (New York: Harper & Row, Publishers, 1970), 35-58,

Academic Profile



RONALD G. GREENWOOD

Ronald G. Greenwood (D.B.A., University of Oklahoma) is Professor of Management and Policy at the GMI Engineering & Management Institute in Flint, Michigan. Professor Greenwood's teaching and research interests include the study of management history, manufacturing management, and organisational behavior. He has published books on the science of management and managerial decentralization. In addition, his research has been published in the *Academy of Management Review* and the *Journal of Management*. Professor Greenwood has served as chairman of the Management History Division of the Academy of Management, as president of the Midwest Case Writers Association, and is a member of the board of directors of The Midwest Management Association. Previously, he served as a senior methods analyst for the Federal Reserve Bank of New York.

Q: Much attention is currently being paid to management practices applied in countries overseas. Some historians note that these practices are really applications of early American management ideas. Do you believe this to be the case, and if so, does it account for their success?

A: The Japanese, Swedish, and South Korean management practices are getting headlines today, but each country seems to concentrate on different aspects of worker organizations and manage quite differently. The textbooks have been, for many years, advocating the various practices which each country is using, but there is really little new here. What we have learned is that culture is quite critical when developing managerial practices that lead to success, Japan has based much of its production on the philosophy of the scientific managers such as Frederick Taylor, the Gilbreths, Henry Gantt, and Harrington Emerson. The works of these people were translated, before 1920, into Japanese by Japan's great management scholar, Yoichi Ueno. After World War II, Japan listened to the statistical quality control theories of W. Edwards Deming and Joseph Juran. Although statistical quality control is an extension of scientific management and well known in the Western business community, it was practiced in Japan with much more dedication. Peter Drucker, the most widely read management scholar in the world, is Japan's leading author for all nonfiction books. Of course, the success of Japan is not just production control. Such factors as a more business-oriented tax system and the fact that the national savings rate has been between 18 percent and 25 percent of individual income for the past three decades has helped.

Q: In your discussions with corporate executives, what area of concern seems to be most prominent and recurring?

A: Most executives talk to me about people problems and they give a lot of lip service to inter-

personal relations problems. But once the discussion gets below the surface, it appears that the real problems center on the inability of managers to truly delegate decision making, which stems, in part, from the overuse of committees. Q: Of all the management theorists you have studied, which have impressed you most?

A: There are a number of management theorists who have greatly impressed me. Frederick Taylor for beginning the codification of the process, and Frank and Lillian Gilbreth for their overwhelming concern for the dignity of the laborer. But for the needs of the rest of this century, it is Peter Drucker's work which has had the greatest impact on my thinking. My strong liking of Peter Drucker evolves from my experience as his research assistant early in my career, and I know that his philosophy on management is based on very solid research. The research comes from his interaction with the world of management practitioners. Drucker analyzes from the top of the organization and thus is able to see the entire unit. It was Drucker, not Henri Fayol, Frederick Taylor, or Elton Mayo, who actually began the managerial revolution by telling practicing managers that management could be studied, learned, and was more than a "gut-feel" practice. The early management theorists were all but ignored by practicing managers until Drucker published his *Concept of the Corporation* (1946) and his *Practice of Management* (1954). The ideas in these books came from his research and his daily discussions with the executives from General Motors and General Electric. The 1954 book was written at the time he teamed with General Electric Vice-President Harold Smiddy to lay the foundation upon which the decentralization of the company was based. It was from this work that Drucker developed his management philosophy of giving people more freedom, allowing them to make their own decisions, and measuring them against results instead of inputs.

superior relations were all identified as integral components to the practice of management. No longer could managers confine their attention to technical skills. Rather, they had to develop people skills as well and develop an understanding of the relationship between the technical and human sides of management.

However, the behavioral school did not completely resolve issues concerning the nature of the individual. Later studies were to dispute the belief that worker satisfaction was the prime cause of productivity. Under certain conditions, satisfaction was found to play an inconsequential role. In addition, salaries do at times affect worker productivity, particularly in industries where salaries are low, causing high rates of absenteeism and turnover. Thus, the psychological and social dimensions of the individual only partially explain organizational outcomes and constitute only a part of the larger and more complex managerial picture.

QUANTITATIVE MANAGEMENT THEORY

The advent of World War II introduced a new set of problems related to the practice of management. Submarine warfare was introduced, as was a massive deployment of airplanes as a means of attack. These developments made the conduct of war more complex and reduced the margin of error that one could afford militarily. With Great Britain confronting the prospects of defeat, the British formed an operations research team consisting of mathematicians, physicists, and other experts to develop methods for countering the German offense. The team was able to develop sophisticated mathematical models that could simplify scenarios of attack and counterattack and thus reduce tactical errors by military commanders. These models, based on mathematical equations, were credited with assisting the British military in effectively staving off the German attack.¹⁴

After World War II was over, interest in the application of operations research technology to industry began to emerge. This interest was accelerated by advances made in computer technology which increased the speed with which many of the complicated mathematical models could be solved. In particular, operations research models were applied to solve production problems. Models could, through mathematical equations, simulate a problem and bring to bear all of the relevant factors that affect that problem. In addition, the values of these factors could be changed to develop different scenarios, thus leading managers to devise solutions to potential problems. For example, managers might be inter-

24. C. W. Churchman, R. L. Ackoff, and E. L. Arpooi, *introduction to Operations Research* (New York: John Wiley & Sons, 1957)

estimated in learning about the effect that delays in shipments of raw materials have on the cost of producing a good. By changing this variable in the equation, production costs can be estimated and managers can then make decisions to develop plans for reducing this problem situation.

While operations research has provided management with a valuable tool in the planning and control of production activities, mathematical models have yet to account effectively for human behaviors in their equations. The difficulty, of course, is that the human factor is not as easily quantified as inanimate phenomena; thus, many equations are used for understanding situations in their most rational form. Further examination of the contributions of quantitative management theory will be discussed in Chapters 19 and 20.

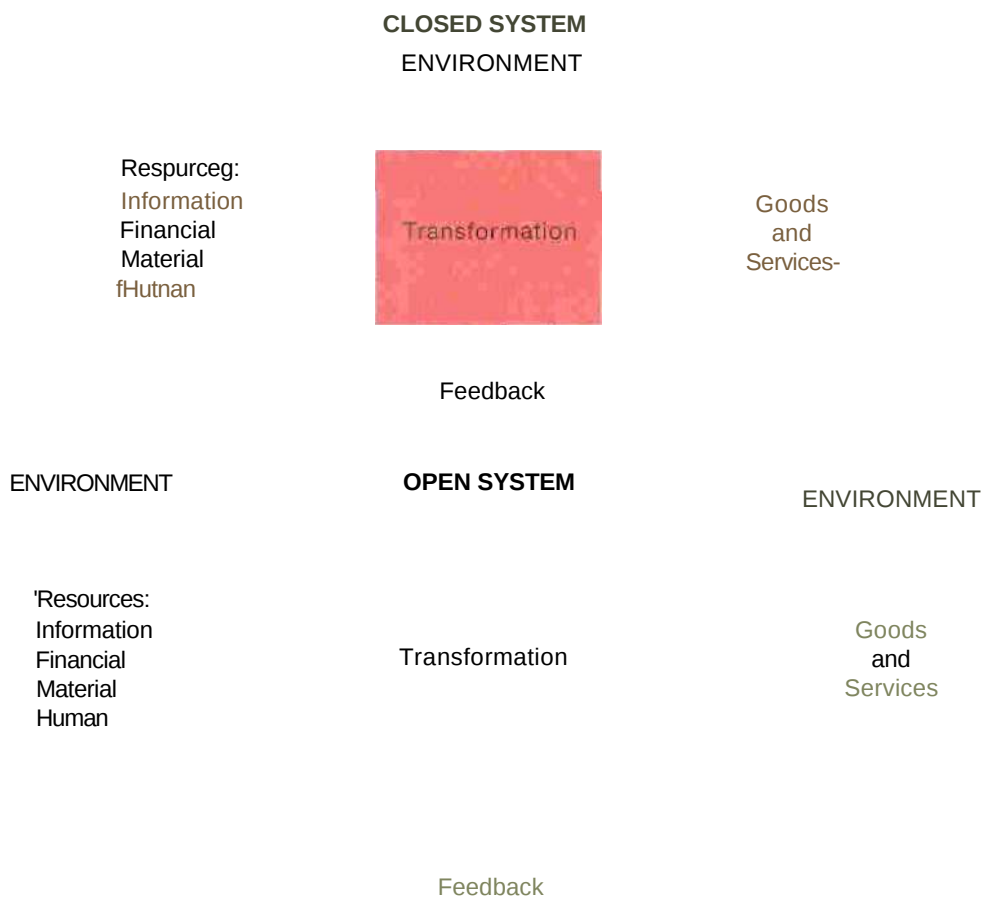
SYSTEMS THEORY

In the 1950s, managers in the United States were confronted by a new set of problems. The expansion of the economy, a rapid growth of the middle class, the proliferation of larger and more complex corporations, and advances in communication and travel were each responsible for introducing new factors and problems that had to be addressed by managers. At the same time, the Ford Foundation and Carnegie Corporation issued reports suggesting that business education in the United States was inadequate for developing managers because it focused more on vocational training than on organizational problem solving. As a result, greater attention among managerial theorists and practitioners was directed toward understanding how organizations as a whole could be made more efficient and effective.

The systems theory approach to management is based on the assumptions and ideas of a biologist named Ludwig von Bertalanffy (1951). Von Bertalanffy approached the field of science from the perspective that each discipline studied forms of systems that were composed of interrelated subsystems. Basically, a system is an interrelated set of elements functioning as a whole. Examples of systems would be plant cells, a clock, a hospital, or the human body. In management theory, the system is the organization composed of subsystems such as departments or divisions. Von Bertalanffy emphasized that the survival or failure of the system was dependent on the interrelation of subsystems and their contribution to the overall purpose of the system. Hence, activities in a production department will be determined largely by the sales department, which in turn will be dependent on budget allocations from the accounting department, which in turn is dependent on the cost efficiency of the production department, and so forth. The implication is that no department is fully independent of another; it cannot act independently or make decisions without considering its effect on other departments.

Systems could be further classified based on whether they are open or closed. A **closed** system, as depicted in Figure 2-2, is one that does not rely on resources from the environment to survive. In order to survive, a closed system must have internal resources to transform into goods and services which are then consumed by members of the organization. Very few organizations would meet the criteria of a closed system. Monasteries situated in remote mountain ranges perhaps come closest to being closed systems, but even monasteries must obtain inputs from the environment in the form of new members. Yet, many earlier managerial theories treated the organization as if it were a closed system. Principles developed to solve problems were based on the assumption that the environment was not a contributor to those problems and thus focused on ways to become more efficient through internal design.

re 2-2

CLOSED SYSTEM AND OPEN SYSTEM

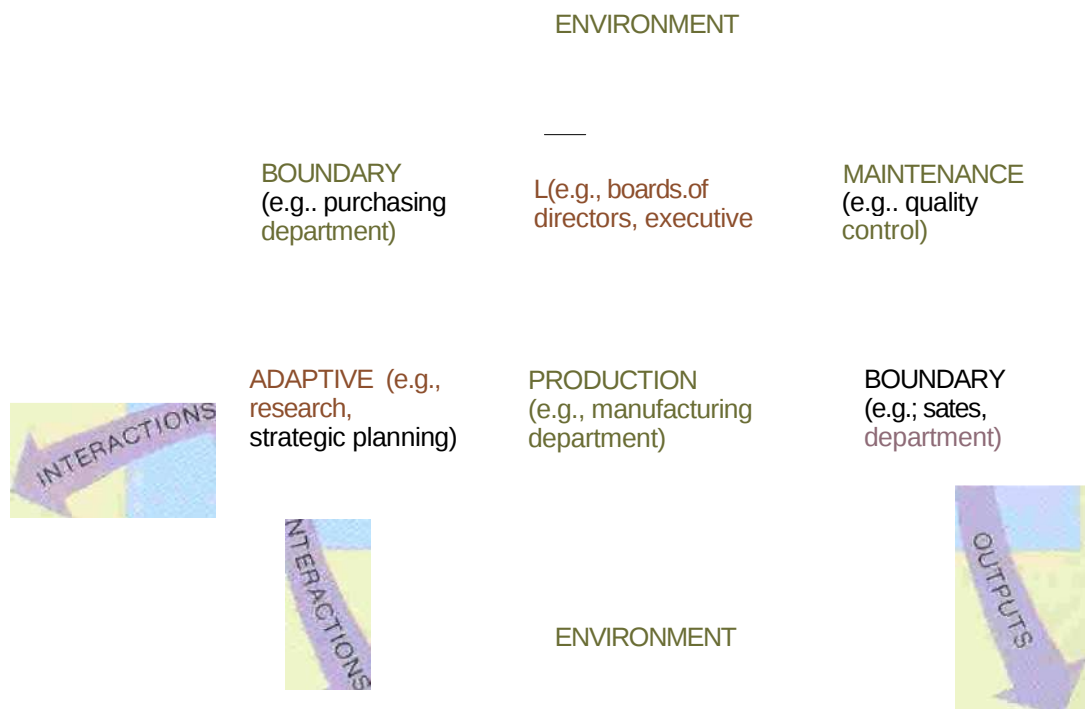
An **open** system is one that must continually seek resources from the environment in order to survive. Figure 2,-2 indicates that an open system obtains information, financial; material, and human resources from the environment. The transformed resources must then be exported to the environment. Organizations characterize an open system in that resources must be purchased from suppliers, and customers must be willing to purchase the goods transformed by the production process of the organization in order for the organization to survive.

The introduction of von Bertalanffy's systems ideas to the subject of managerial theory spawned increased interest in its application to managerial problems. Efforts to enlarge on the subject of subsystems were conducted by Katz and Kahn, who distinguished five types of formal organization subsystems as shown in Figure 2-3:

- ▲ *Production.* A **production subsystem** produces a good or service to be exported to customers in the environment. The production subsystem focuses primarily on the transformation of inputs, such as raw materials, and includes employees who

Bgure 2-3-

SUBSYSTEMS OF AN ORGANIZATION



work on the production line as well as those in inventory control.

▲ *Maintenance.* The **maintenance subsystem** is concerned with the stable operation of activities in the organization. Here, the focus is on employee selection procedures, cleaning and maintaining buildings and machinery, and quality control,

A *Boundary.* **Boundary subsystems, or boundary-spanning subsystems,** handle transactions involving the procurement and disposal of necessary resources. These subsystems work in conjunction with the production subsystem but address issues concerning methods of obtaining resources from suppliers and distributing goods to the customers. Thus, boundary subsystems work directly with individuals and organizations in the environment. Purchasing departments and marketing departments represent boundary subsystems.

A *Adaptive.* The responsibility to oversee organizational planning and change rests with **adaptive subsystems.** Members of adaptive subsystems scan the environment to obtain information about technological developments, competitor activities, and regulatory constraints. Strategic planning departments and research and development units constitute adaptive subsystems.

A *Managerial.* The **managerial subsystem** oversees the activities of the other subsystems with emphases on coordinating the subsystems, resolving conflicts, establishing strategies, and directing the other subsystems toward system-level goals. Boards of directors and executive committees are examples of the managerial subsystem.²⁵

Control within the system is obtained through feedback. **Feedback** is information that is received about activities in the organization. As the system proceeds, information about activities is fed back to key decision makers who then can invoke measures to correct situations or inform other subsystems concerning the status of activities throughout the organization.

Kenneth Boulding further elaborated von Bertalanffy's theory by constructing a hierarchy of systems based on their degree of complexity. Boulding identified eight levels of system complexity after analyzing a variety of systems. The simplest form of system, located on Level 1, would be a static framework such as a building, a molecule, or a painting. At **the** second level of complexity would be dynamic systems such as a

25. D. Katz and R. L. Kahn, *The Social Psychology of Organizations* [New York: John Wiley & Sons, 1966], 86.

solar system. Control systems, such as a computer that is programmed to operate at certain time periods, would be at Level 3. Level 4 begins with life forms and is represented by a plant or animal cell. Increasing in complexity at Level 5 are plant forms and at Level 6 animal forms. The human being would be at Level 7 and, according to Boulding, social organization is the most complex system form at Level 8. The reasoning behind the social organization being the most complex system is that it contains the complexity of Level 7 [human being], but due to the grouping of individuals into an integrated system, new features emerge. Values, norms, structures, roles, culture, etc., are all contextual dimensions that evolve through the grouping of human beings.²⁶

Again, the implication for managers is that an awareness of the multifaceted nature of the organization begins with a knowledge of the various dimensions that impinge on organizational life. People, technology, leaders, values, goals, and motivations do not exist in a vacuum. Rather, the complexity of the system requires that managers understand how all of these dimensions are integrated and affect each other. Otherwise, decisions or activities designed to correct one of the dimensions may lead to results that place the organization in a more precarious situation than existed prior to the decision or the action.

Systems theory has been a major influence on the study and practice of management. The idea of viewing an organization as a system of interdependent subsystems—where a change in one subsystem will effect change in other subsystems—enables managers to comprehend more fully the implications of their actions. Indeed, the power of the systems theory framework has not been solely confined to the study of management. The disciplines of physics, biology, sociology, and mathematics have all found the principles of systems theory useful in the development and study of their respective problems.

Systems theory, however, has had several limitations concerning its contribution to the study of management. First, it is primarily descriptive rather than predictive. That is, the theory provides a useful way to describe an organization, but it has had the least success in its application to the prediction of outcomes based on changes that occur among subsystems. Second, systems theory advocates often find themselves mired in the same problem that classical theorists have been criticized for. Systems theory takes a similar approach to all organizations, and thus fails to account for the role that unique contextual, organizational, and human dimensions can play on organizational outcomes. Hence, advocates suggest that all organizations are systems and that underlying principles appropriate to all organizations can be obtained from the theory.

26, K. E. Boulding, "General Systems Theory: The Skeleton of Science," *Management Science* 1 (1956): 197-207.

CONTINGENCY THEORY

The contingency, or situational, approach to management theory and practice emerged in the early 1960s from organizational research conducted in the United States and England. With the arrival of the sixties came the expansion of markets based not on generic products but rather on the differentiation of products. Consumers were demanding more variety in the products they purchased. The Henry Ford axiom from a previous generation, "You can buy a car of any color as long as it is black," was no longer acceptable. With consumer demand becoming more diversified, so did the types of organizations that were being founded. Thus, not only were the number of organizations in the society increasing, but also the diversity of organizations within and across industries. In addition, the work force was becoming less "blue collar" and more "white collar." The work force was changing as many more workers were being employed in activities that did not directly involve the production of a good, but rather the production of a service. Indeed, some scholars began to write about the end of the Industrial Revolution with predictions about the dawning of a new age in American society.²⁷

Contingency theory attempts to provide a perspective of organizations and management based on the integration of prior theories. Contingency theory starts with the theme of "it depends," where it is argued that the solution to any one managerial problem is contingent on the factors that are impinging on the situation. For instance, it would be appropriate to have highly routine tasks where little variation in materials exists in the production process. However, where variation is high requiring many judgments concerning which material is appropriate and which is not, managers will want to avoid making tasks routine.

One of the first applications of contingency theory came from research conducted by two British scholars, Thomas Burns and G. M. Stalker. After studying several industrial firms in England, such as textile mills and electronics manufacturers, they concluded that the appropriate managerial techniques were highly dependent on the kind of task the organization was trying to accomplish.²⁸

Burns and Stalker identified two organization typologies: mechanistic, where the appropriate task was routine and unchanging; and organic, where the appropriate task was nonroutine and changing. They discovered that the most successful firms were those which practiced management that corresponded to the two types. Where the task was routine and unchanging (mechanistic), the appropriate managerial

27. D. Bell, *The Coming of Post-Industrial Society: A View of Social Forecasting* [New York: Basic Books, 1973],

28. T. Burns and G. M. Stalker, *The Management of Innovation* (London: Tavistock Publications, 1961)

approach was to emphasize efficiency, highly specialized jobs, and elaborate procedures for maintaining controls over behavior. On the other hand, where the task was nonroutine and changing (organic! the most successful firms were those that emphasized low job specialization, creativity rather than efficiency, and workers controlling their own behaviors rather than relying on rules and procedures to keep them "in line." The implication, according to Burns and Stalkers, was that the classical and behavioral schools were neither totally right nor totally wrong. Rather, they were right if the appropriate situation for the application of their principles existed and they were wrong if the situation did not exist. As a result, managers need to understand when a situation is appropriate or inappropriate for engaging in certain activities.

Other theorists, namely Paul Lawrence and Jay Lorsch²⁹ and John Child,³⁰ have enlarged on this perspective and identified contingencies, such as environmental conditions, ownership patterns, strategies, and leadership as important for assessing a situation.

One attraction to the contingency approach among theorists and practitioners alike is its situational perspective. Those interested in research issues regarding organization and management can use the contingency perspective to explain why some factors influence situations in one setting but have virtually no influence in another setting. Indeed, one objective of research within the contingency framework is to specify those dimensions and conditions that do affect a situation and those that do not. For the manager, the requirement from the contingency perspective is to identify which technique will; in a particular situation, best contribute to the attainment of organizational goals. For instance, under some circumstances, an authoritarian leadership style may be more appropriate than a leadership style that tries to get workers internally motivated.

While the contingency approach is useful in recognizing that the complexity involved in understanding human and organizational systems makes it difficult to develop universal principles of management, there have been several criticisms of the approach. For one, it has been pointed out that the contingency approach has the tendency to go to the other extreme of theories advocating universal principles. One can, for instance, extend the logic of the contingency perspective to the point where it states that *all* situations are unique. If this is true, then management can be practiced only by intuition and judgment, thereby negating the value of prior knowledge and wisdom.

29. P. R. Lawrence and J. W. Lorsch, *Organization and Environment* (Cambridge, MA: Harvard Univ. Press, 1967)

30. J. Child "Organizational Structure, Environment, and Performance: The Role of Strategic Choice," *Sociology* 6 (January 1972): 1-22.

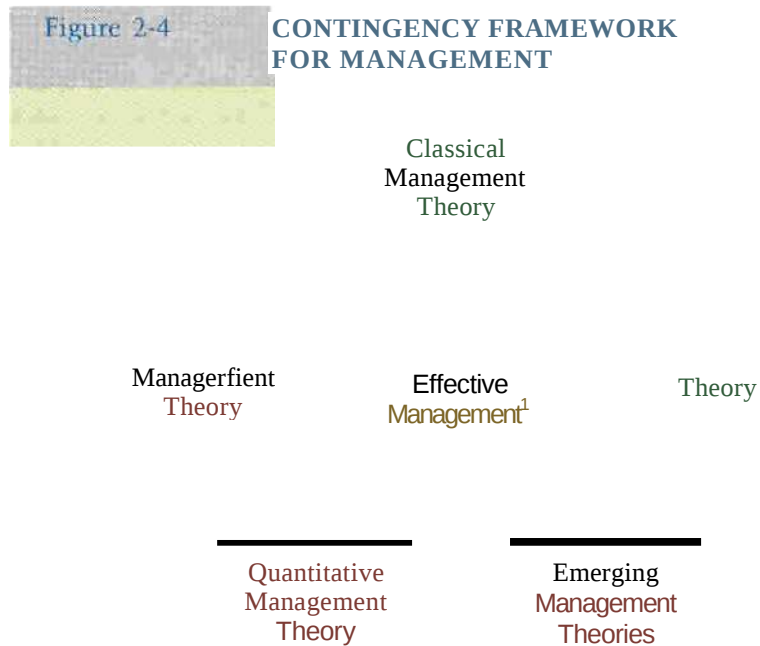
On a research level, contingency theory has been criticized for being atheoretical.³¹ One requirement of theory is the ability to test its assumptions in a way that the theory can be disproved in order to assess its validity. In a contingency framework, if contradictory results are obtained, the contingency response would be that the situation is unique or that important dimensions affecting the situation were not tested. Thus, disproving the theory would be difficult at best.

While these limitations are recognized, we will approach the study of management utilizing the assumptions of contingency theory. We believe that management is a highly complex discipline in both practice and research. We build the approach from previous research and practice and extend the findings to develop an understanding of how contextual, organisational, and human dimensions are integrated. Specifically, we draw ideas from classical management theory regarding the structuring of organizations to increase efficiency and productivity. Behavioral management theory provides knowledge about human needs and motivations that can lead not only to increased productivity, but also to enhancement of the workplace. Systems theory serves to identify the context in which organizations operate, thus enabling managers to understand the environment and how the parts, or subsystems, of the organization are interrelated. In addition, we will draw from quantitative management theory for the application of specific tools and techniques that are useful for increasing managerial efficiency and effectiveness.

By applying contingency theory to the study of management, you will be able to identify and to solve problems under different situations. You will recognize that the successful application of a technique in one situation does not necessarily guarantee success in its application to another situation. Rather, you will be able to examine each situation in terms of how it is affected by the contextual, organizational, and human dimensions. As a result, your overall ability to correct problems and to become more effective as a manager will increase. The contingency framework that we will be using is shown in Figure 2-4.

Consider the situation in which a shoe manufacturer is faced with decreasing profits. As a manager, this person may attempt to apply time and motion analysis with the belief that sales have declined due to lower productivity on the part of the worker (classical management theory). There may be an attempt to involve workers more in the decision-making process concerning the methods they are to use in producing the shoes based on the premise that this will motivate workers to produce more (behavioral management theory). Or, the manager may establish a committee of sales and production personnel to coordinate the production

31. H. Koontz, "The Management Theory Jungle Revisited," *Academy of Management Review* 5 (April 1980): 175.-87.



and distribution of goods under the assumption that profits have declined due to large inventories [systems theory]. Application of a contingency perspective will enable the manager to examine the situation and to determine the cause of decreased profits before a new procedure or program is implemented. Perhaps only one program needs to be implemented, or perhaps all three. However, only through an awareness of all possible solutions to the problem is the manager able to arrive at a correct solution. Contingency theory, as presented in this book, is designed to provide the manager with the capabilities to examine numerous possible solutions to a problem.

In addition, we will extend the framework of the contingency approach by incorporating knowledge and ideas that have emerged from more recent perspectives on the study of organization and management. A discussion of those emerging perspectives follows,

EMERGING PERSPECTIVES IN MANAGEMENT

The 1970s brought about a whole new set of problems for managers to confront. Midway through the decade, the world experienced an economic downturn due to the sudden oil embargo imposed by the Organiza-

tion of Petroleum and Exporting Nations (OPEC). The reduction in supplies of oil to developed countries such as the United States, Japan, Great Britain, France, and Germany, as well as an escalation in the price of oil, led to a dramatic adjustment in the way citizens in those countries engaged in leisure activities, consumed products, and conducted work. At about the same time, the United States was faced with a political crisis that threatened to undermine the institutions of government that had existed for almost 200 years. Referred to as "Watergate," the crisis evolved from a burglary in a hotel of the same name which was condoned by then President Richard Nixon. Information about a systematic practice among occupants of the White House in the engagement of illegal and criminal behaviors later emerged. The situation culminated in the resignation of Nixon as President. Of greater consequence was the cynical and suspicious attitude that developed among the populace toward institutional power. As a result, large corporations and those who managed them were highly distrusted by the populace, making the practice of ethical behaviors that much more important. Finally, the seventies witnessed the end of the Vietnam war. With the shift away from producing war goods came a downturn in the economy. Inflation, unemployment, and organizational failures became common experiences. Toward the end of the decade and at the beginning of the 1980s, four perspectives began to emerge: One addressed institutional power; another addressed issues of organizational failure; the third concerned issues regarding values and attitudes in the workplace as related to productivity; and the fourth considered competitive strategies for responding to emerging forces.

Resource Dependence Perspective

The first, a resource dependence perspective, developed a framework to explain why organizations were often forced into establishing linkages with other organizations in their environment. As resources become scarce, managers must expand the number of suppliers and receivers of goods in order to maintain stable operations and profits. However, as linkages are created, so also are constraints on decisions managers can make to guide the organization toward specific goals. That is, as the organization's activities become dependent on other organizations, there are fewer opportunities to guide the organization in different and novel directions. Thus, many organizations lose power by solving the problem of scarce resources. The success or failure of the organization becomes more a consequence of other organizations' decisions and behaviors than a result of the decisions and behaviors of the highly linked organization. The perspective is expanded to account for how dependence on organizational environments affects the fortunes of managers as they move up the career ladder. As the environment changes, either in terms of resource distribution or organizational interdependence, so also does

Part 1 A THE SCOPE OF MANAGEMENT

the probability of managers losing their jobs.⁵² This argument is similar to that made in the contingency approach in that environmental changes produce new situations and new situations require managers with styles more adaptive to the new conditions.

Population Ecology

The second perspective to emerge in the late seventies is labeled population ecology. Borrowing principles from biology concerning natural selection processes, theorists in this area have attempted to explain why some organizations survive and others fail based on conditions in the environment. In the population ecology framework, luck, chance, and randomness play an important role in explaining the survival or failure of an organization. This is the same way biologists have accounted for the survival or failure of animal and plant species throughout time. New organizations are continuously founded by entrepreneurs with a new idea or product. It is argued, however, that survival or success is more dependent on luck or chance than on the quality of the idea. Thus, many products are offered in the marketplace, but it may take a chance discovery by another person or an organization to see their usefulness. As a result, failure among new organizations is extremely high since the probability of the product or idea being discovered by the right person or organization at the right time is very low. The implication of this perspective is that managerial abilities and talents in the initial stages of organizational development have very little to do with organizational success. Rather, success is more dependent on the environment and the various changes that are going on in the environment.³³ As such, the perspective offers important insight into the relationships of organizations to a changing environment and how organizations either adapt to that change or experience failure. Hence, population ecologists would be in agreement with the old adage that success can be largely attributed to "being in the right place at the right time."



Theory Z

The third perspective addressing management and the organizational problems of the seventies was developed by William Ouchi and labeled Theory Z.³⁴ Theory Z presents solutions to problems of human

32. J. Pfeffer and G. R. Salancik, *The External Control of Organizations: A Resource Dependence Perspective* (New York: Harper & Row Pubs., 1978)

33. M. T. Hannan and J. H. Freeman, "The Population Ecology of Organizations," *American Journal of Sociology* 82 (March 1977): 929-64.

34. W. G. Ouchi, *Theory Z: How American Business Can Meet the Japanese Challenge* (Reading, MA: Addison-Wesley, 1981)

resource management. During the decade, many firms were confronted with the situation of losing competitiveness to foreign companies. For instance, with the oil embargo came a demand among consumers for **more** fuel-efficient automobiles, resulting in an influx of Japanese and German car imports and a decline in market share among U. S. automobile manufacturers. To understand methods of increasing quality and efficiency in the production process in order to make goods more competitive with foreign products, Ouchi studied managerial practices in Japan, which he referred to as Theory Z in contrast to McGregor's models of management labeled Theory X and Theory Y (see Figure 2-5).

Figure 2-5 **CHARACTERISTICS OF AMERICAN, JAPANESE, AND THEORY Z ORGANIZATIONS**

Type A (American)

Short-term employment Individual decision making Individual responsibility Rapid evaluation and promotion Explicit, formalized control Specialised career path Segmented concern for employee as an employee

Type J (Japanese)

Lifetime employment Consensual decision making Collective responsibility Slow evaluation and promotion Implicit, informal control Nonspecialized career path Holistic concern *in* employee as a; person

Type Z (Modified American)

Long-term employment Consensual decision making Individual responsibility Slow evaluation and promotion Implicit, informal control with explicit, formalized measures Moderately specialized career path Holistic concern, including family

Source: William G. Ouchi and Alfred M. Jaeger, "Type Z Organization: Stability in the Midst of Mobility," *Academy of Management Review* 3 (April 1978): 308

Theory Z attempts to incorporate and integrate the best of American and Japanese styles of management. It advocates that workers should be guaranteed employment for longer periods of time, have a greater role in decision making by participating in group decision-making councils, and be personally responsible for their task activities. In addition, evaluation and promotion should proceed at a slower rate; there should be informal and implicit control mechanisms with formal and explicit measures; moderately specialized career paths; and more emphasis on integrating the workers' roles and responsibilities away from the workplace into the organization [such as family and civic roles]. Ouchi contends that Theory Z retains the American cultural value of individualism by combining it with opportunities to become more a part of the organization's direction and activities through collective decision making. As a result, it is believed that employees will feel a greater sense of belonging to the organization; productivity and product quality will increase as employees take more pride in their work; and absenteeism and turnover, which are costly to most organizations, will decrease. Numerous corporations have studied the Theory Z approach and have integrated part or all of the theory into their managerial philosophy. Perhaps the most common example of the Theory Z approach is the use of quality circles (discussed in a later chapter), although this represents only one component of the Theory Z philosophy.

Competitive Strategy

The 1980s have brought about a new set of problems that managers of organizations have been forced to confront and integrate into their problem-solving approaches. Perhaps most notable are changes in government policies concerning the regulation of organizational activities within and across industries. After the economic crisis of the 1930s, the United States government took a more active role in economic activity in order to prevent the financial collapse and human misery that occurred during the Great Depression. One outcome of this effort was the regulation of industry to prevent unfair competitive practices and requirements of organizations to be socially and legally responsible for the products or services they were producing for customers. By the onset of the 1980s, many government policymakers believed that many of these regulations, while necessary some 40 to 50 years ago, were no longer suited to the existing conditions. As a result, attention and action were directed toward removing regulations, primarily economic, in order to increase competition within industries.

One of the first such efforts was in the airline industry. Constraints on routes were removed, allowing airline organizations to decide for themselves which routes to compete for. However, the consequences

were perhaps more startling than expected. Many of the large and well-established airlines chose strategies of competition that led to economic ruin, forcing them into receivership. On the other hand, new airlines were formed and became successful by providing service to small communities that the major airlines had ignored because it was not economically feasible to transport small numbers of travelers in large aircraft. Other airlines were founded with the idea of providing no-frills transportation, thus offering dramatically reduced rates for passengers more interested in getting to their destination than in what was provided with the flight. As a result of deregulation, the management of airlines focused more on the formulation and implementation of strategies that would enable them to respond to competition successfully.



One important theoretical development in the 1980s contributed to the study of industry competition and strategic activity. Michael Porter's theory and models of competitive strategies provide a framework for understanding how competition within an industry is shaped by these forces:

- ▲ The threat of new entrants;
- ▲ The bargaining power of customers;
- ▲ The bargaining power of suppliers;
- ▲ The threat of substitute products or services; and
- ▲ Competition among existing firms.¹⁵

Porter's framework has been useful to managers in the formulation and implementation of competitive strategies by helping them to understand industry dynamics and anticipate future trends. Porter's framework for analyzing industries will receive further attention in Chapter 6, which discusses strategic planning.

IMPLICATIONS FOR MANAGEMENT

The systematic study and practice of management has been in existence for over 100 years. During this time, our knowledge and understanding of managerial issues and problems have evolved from an approach concerned primarily with establishing principles to increase efficiency in the workplace to those approaches that attempt to understand the total organization by examining the interrelationships between the contextual, organizational, and human dimensions of the workplace. The various theories each offer a different perspective for

15. M. E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York: Free Press, 1980)

addressing managerial problems. Many of the differences between the theories are due largely to the types of problems that have historically emerged to confront managers.

As a manager, you should be cognizant that no one method or technique is to be applied to all problems or situations. Rather, you should strive to develop a contingency perspective in your application of managerial techniques. This perspective will enable you to assess different probable causes of a situation and to recognize which application is most appropriate. For instance, a contingency perspective of management would inform you that increasing work efficiency may speed up the flow of work, but may also lead to greater levels of worker dissatisfaction. As a result, you may incur greater turnover, absenteeism, and carelessness in the workplace.

A contingency perspective also enables you to weigh factors that exist in the environment of the organization and to understand how changes in one area of the organization may require changes in other areas as well. For instance, a decrease in sales may be the result of a devaluation in foreign currency, thus making goods or services produced by foreign competitors cheaper in price. Or, an increase in production will, in many instances, require an increase in sales force, an increase in budget, and perhaps the need to redefine organization goals.

Your understanding of the strengths and limitations of historical perspectives will provide you with the knowledge needed to perform your managerial tasks effectively. We have much to learn from the past in order to be successful in the future.

KEY TERMS AND CONCEPTS

acceptance theory	managerial subsystem
adaptive subsystem	mechanistic organization
administrative theory	open system
behavioral management	organic organization
theory	piece-rate system
boundary or boundary-	production subsystem
spanning subsystem	scientific management
bureaucracy	staff
chain of command	system
classical management theory	systems theory
closed system	task-and-bonus wage system
contingency theory	Theory X
delegation of authority	Theory Y
feedback	Theory Z
Gantt chart	time and motion studies
Hawthorne effect	unity of command
maintenance subsystem	

REVIEW
QUESTIONS

1. Identify the major events that are associated with the coming of the Industrial Revolution.
 2. What contributions did Robert Owen make to our understanding of the practice of management? Charles Babbage?
 3. What are the key assumptions made by writers of classical management theory? What is the difference between administrative theory and scientific management?
 4. Identify the 14 principles that Fayol set down that he felt were useful for managers.
 5. According to Weber, what are the seven structural characteristics of a bureaucracy?
 6. What are the three universal elements of a cooperative system, according to Chester Barnard?
 7. What are the four categories of principles that Frederick Taylor identified?
 8. What type of system did Gantt believe would lead to more satisfied employees and therefore better output?
 9. What was the major contribution of the Gilbreths?
 10. Identify and discuss the major criticisms that have been directed at classical management theories.
 11. Discuss the sequence of events involved in the Hawthorne study and identify its outcome.
 12. Why did McGregor assume that managers were prone to design organizations that were centralized in decision making, contained numerous rules and regulations, and required close supervision of subordinates?
 13. What conditions, according to Argyris, will result in workers becoming frustrated and dissatisfied with the workplace?
 14. What is the major contribution that Abraham Maslow made to our understanding of the human dimension?
 15. Identify the strengths and weaknesses of the assumptions about human behavior advanced by behavioral management theory.
 16. How did quantitative management theory originate? In what areas of management is it most applicable?
 17. What is a system? a subsystem? an open system? a closed system? How do systems vary in complexity?
 18. What are the five types of formal organization subsystems?
 19. Why is feedback important in a system?
 20. How does contingency theory differ from other theories of management discussed?
 21. What are the basic differences between a mechanistic and an organic organization?
 22. What managerial issues does the resource dependence perspective address? population ecology? Theory Z? competitive strategy?
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CASE 2 ▲ Profiting from the Past

For years, Polaroid's W-3 plant in Waltham, Massachusetts, was a model of efficiency—the sort of small, collegial shop that the photography firm loved to boast about. But relations with workers slowly soured, productivity slumped—and by the time 15 years had passed, no one could remember the reasons why. Enter Phelps Tracy, corporate historian. By interviewing employees and examining old records, the consultant, a trained social scientist, pieced together the puzzle: As the plant's employment and output had increased over the years, managers had imposed ever tighter controls that gradually sapped workers' morale. Employees and management pored over Tracy's findings. They soon discovered the source of the plant's problems and took the steps needed to solve them.

Company historians were once chiefly public-relations ploys, crafted to enshrine their subjects in a free-enterprise Hall of Fame. But along with Polaroid, firms like AT&T, Navistar, Consolidated Edison, and Wells Fargo Bank are now asking serious scholars like Tracy to research their past. Some firms have even hired their own in-house historian. As a result, companies may be acquiring the long-term perspective American management is often accused of lacking. Paul E. Johnson, a vice-president at Navistar, says, "It's beneficial to know your corporate roots."

Delving into corporate history still has its conventional marketing uses. Wells Fargo's history department manages an extensive collection of archives, some of which are used in the bank's advertising campaigns. But today's corporate historians stress that their research is primarily aimed at giving managers useful information for running their businesses. Sometimes the past proves valuable in simply keeping firms from repeating previous mistakes. One his-

tory graduate student working part-time at a California-based computer company discovered that the firm was unknowingly researching a potential product that it had researched a decade earlier. The company quickly offered him a full-time job.

Replenishing the corporate memory bank may help to solve "one of the facts of life—that people change jobs ever)¹ year or two/" says Harold Anderson, Wells Fargo archivist. The employees in line are often left with few clues as to why their predecessor reached a given conclusion. To remedy that problem, historian Philip Cantelon wrote a book for Consolidated Edison executives showing how former executives had grappled with corporate issues. At AT&T, consultants who conducted historical research for Bell in connection with the government's antitrust suit also compiled a history of the Western Electric acquisition that may assist in the system's breakup. When it comes to facing new competition, says consultant and lecturer George David Smith, managers will benefit from seeing just how Ma Bell evolved from a turn-of-the-century fledgling founded on a risky technological base.

Some historians wonder whether their objectivity is sufficiently protected. "'Historians for Hire' are constantly confronted with how they can do scholarly work while being paid for it," says Ted Karamanski, a history professor at Loyola University of Chicago. Guarding against more vanity histories, Karamanski says, will require "a system of ethics." But it's the candid truth about their pasts that most firms now seem to be after—and today's corporate Toynbees seem determined to deliver the goods.

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1. What advantages can be obtained from a company historian? How does understanding a company's past help managers make effective decisions in the present and future?¹
2. What body of management theory did managers at Polaroid's W-3 plant in Waltham, Massachusetts, seem to be gravitating toward that led to plant troubles?
3. To be effective; should company historians also be educated in the different theories of management or is training in historical research adequate? What advantages or disadvantages are there for a company historian who is knowledgeable about the different theories of management?

PART 1 CASE A Changing the Ways of Management

At his desk in New York at 8:00 a.m., Akio Morita, the 59-year-old chairman and co-founder of the Sony Corporation, is discussing business with a colleague via an overseas phone call. Upon finishing the call, he rises to greet a visitor and quickly launches into a highly informed discussion of American politics. Akio Morita has become a man of two cultures—Japanese and American—and he also happens at the moment to be the very symbol of the kind of change in business-management techniques that has successfully occurred in one culture and, many believe, must take place in the other.

Indeed, the prevalence in the United States of all manner of Sony merchandise—televisions, radios, tape recorders, video-cassette recorders—is testimony to the triumph of his approach and an indirect confirmation that American business is in need of repair.

For years, Morita says, he was one of those who regarded America as "a teacher," a nation whose management methods were to be emulated as much as possible. Now, however, he believes that, "For much of the trouble of the American economy, American management has to take the responsibility."

Not that Akio Morita's highly admired achievements—in marketing, product development, and quality control, for example—were arrived at with perfect ease. He was long regarded as something of an out-

sider in his country—apart from the traditional [Japanese] establishment, one of a handful of aggressive entrepreneurs who emerged after World War II, and a man whose brazen style was considered un-Japanese. Morita, along with his partner, Masaru Ibuka, started a small electronics business in Tokyo back in 1946.

In the 1950s, when American consumers saw the tag "Made in Japan," it was a stigma—a code phrase for shoddy merchandise. Sony, more than any other company, was responsible for reversing that image. The turnabout was so substantial that, by 1972, when Sony opened its first American manufacturing plant in San Diego, California, to construct color televisions, its dealers were concerned that its American-made television sets wouldn't match the **quality** of those made in Japan. The company now has a second factory in the United States, located in Dothan, Alabama, which in 1977 began producing magnetic tape, cassettes for the Betamax recorder, and audio tape. Today, Sony's American arm is nearly a \$1-billion-a-year operation employing 4,500 workers, and the quality seems to have held up fine.

In Morita's view, the trouble with a large segment of American management is attributable to two misguided attitudes: American managers are too worried about short-term profits and too little concerned

about their workers. These two mistakes, Morita says, are connected and account for many productivity problems.

"A lot of American companies know they have old machines/' he says. "But the manager figures he'll keep the old machines as long as they still run, make a big profit one year, and take that record as an advertisement to get a job elsewhere. So productivity here declines."

Most American managers, according to Morita, take a shortsighted view of their workers. Indeed, it is the antagonism between management and labor in America that Morita thinks is most counterproductive. Here lies one of the greatest contrasts between the United States and Japan, with its tradition of corporate paternalism and lifetime employment. Morita argues that the Japanese approach to labor management is not a cultural eccentricity, applicable only to Japan. He says it can be transplanted, in a slightly watered-down form, into America. As evidence, he points to Sony's plants in San Diego and Dothan, where, he says, productivity has risen steadily so that it now is very close to that of the company's factories in Japan. "The workers in San Diego and Dothan are terrific/' Morita says.

It is difficult for an outsider to gauge the success Japanese companies have had in bringing their type of management into the United States. But those who have studied the Sony experience here agree for the most part that it has gone fairly well and that American managers should be taking notes.

There is fairly broad agreement, in retrospect, among executives, academicians, and others on what went wrong in American management in the 1970s. After the oil embargo in 1973, and the increase of petroleum prices fourfold by the Arab-led cartel, American corporations were slow to recognize the full significance of the new energy economics and to respond. True, neither Japan nor Western Europe had ever had such

cheap or plentiful energy as had the U.S. Thus, they had the advantage of not having to adjust to the shock. Nor did they have the physical space of America to encourage a greater use of energy, in heavier automobile usage, for example. Nevertheless, American business leaders seem to have delayed too long in making difficult, costly adjustments. Even Thomas A. Murphy, the retired chairman of General Motors and the perennial optimist of the auto industry, concedes that the 70s were "all but a disaster. We seem to have spent most of our time not making decisions."

This managerial inertia cost American industry dearly in terms of its competitive standing. Yet, the related and deeper problem, observers agree, is the set of managerial approaches and attitudes that is widespread but serves business poorly in the current setting. For management, as the author-consultant Peter F. Drucker has written, is not just a discipline but also a "culture/' with its own values, beliefs, tools, and language. To assess the past failures of management and, by inference, to suggest the direction of needed change, one must identify some of the distinguishing characteristics of the current American management culture.

First, as Morita points out, most corporate managers in the United States are now oriented to short-term profit, which tends to discourage them from making important investments in new plants, equipment, and research and development. It is often noted that much of the highly efficient steel-making technology employed with such effect today by foreign competitors was actually developed in the United States. But the American steel companies did not undertake to refashion their plants years ago, when it was a good deal less expensive to do so. Yet, the failure to do so, even now at higher cost, is stealing from the future.

Second, the freewheeling entrepreneur, the Henry Ford or the Andrew Came-

gie, seems to have fallen in short supply. It was Ford, of course, who had such an unshakable faith in himself and in the notion of inexpensive mass-produced automobiles that he told his customers they could have cars in whatever color they wanted, as long as it was black. Again, the current emphasis is more on safety and certain profitability than on boldness, ingenuity, and innovation—old American trademarks. Robert H. Hayes, a Harvard Business School professor, observes, "You don't have much of the spirit any more of the top manager who simply looks at something and says, 'Dammit, this is a good product. Let's make it even though the payoff isn't apparent yet,'"

Third, too many top corporate positions are filled by people who are financial wizards, but who know too little about the fundamentals of the very businesses they run—the markets, technologies, production processes, and workers. These people, usually with financial or legal backgrounds, are the breed of self-styled "professional managers" that so often occupies the executive suites in large corporations. Critics contend that these managers run businesses by the numbers, period. What is needed today, they argue, is less of the Olympian detachment of the 50th floor and more nuts-and-bolts understanding on the factory floor.

Fourth, some of the financial yardsticks that managers rely upon so much in deciding whether to make investments may yield results that are badly distorted in a period of high inflation. The validity of some of these yardsticks, like "discounted cash flow" or virtually indecipherable formulas for figuring "return on investment" is being called into question to some extent. "It may be that some of the basic tools we've been teaching in business schools for 20 years are inordinately biased toward the short term, the sure payoff," said Lee J. Seidler, a Wall Street securities analyst and professor at the

New York University Business School. That suspicion, in turn, raises doubts about the almost theological commitment of corporate managers to financial analysis.

And finally, American managers have often been chauvinistic, not seeing the growing internationalization of business, not learning the tricky art of selling abroad. "We had this huge homogeneous market in the United States for so long that American industry was spoiled," says Reginald Jones of General Electric. Too few companies did what G.E. has done: more than doubled its international business over the past decade to 37 percent of the corporate total, so that G.E. by itself generates a trade surplus (exports minus imports) of more than \$2 billion.

Though the American horizon has been gloomy, it has also had its bright spots in the past decade—particularly in the computer and semiconductor industry. The rapid pace of technological change in this area is truly difficult to comprehend. Modest folk in the industry are fond of citing the following by way of helpful illustration: If the aircraft industry had progressed as rapidly as the semiconductor or computer business in recent years, the Concorde would now hold 10,000 passengers and travel at 60,000 miles an hour, and a ticket would cost 1 cent. Others maintain that what is happening is virtually tantamount to a second Industrial Revolution.

The basic optimism comes, however, from the new attitude of management itself. There is a lengthening of corporate sights now that, as one Japanese executive said privately, "Your managers are beginning to recognize many of their industries are engaged in a global fight for survival." He offered the following elaboration: When Japan attacked Pearl Harbor, the United States had the seventh largest navy in the world. By the end of World War II, the American fleet was the biggest. "When forced to," he said, "Ameri-

cans can respond vigorously. Ultimately, that is what your nation will probably do about its current economic problems, and your corporate managers must lead the response."

Observers of American management suggest that the response is coming. The past failures and current weaknesses are recognized and accepted, and there is a readiness to try corrective techniques. At present, it is impossible to discern the precise contours of the expected transformation—just how American corporations will be structured and run differently a decade or two from now. Nonetheless, certain harbingers are clear.

Given the ever-quickenning pace of change, companies can only benefit from a broader participation in decision making by their increasingly educated workers. To stay attuned to fast-changing markets, technologies, and production techniques, it helps to have the information and cooperation of those closest to the operation—the workers. Companies that do this effectively are what William Ouchi would call "Type Z" concerns. However, the label attached to such companies is relatively unimportant; what is significant is that more and more corporations are trying it. And it is not just the Intels and Hewlett-Packards, relatively young companies dwelling in the rarefied realm of futuristic technology. General Motors has completed a project in an assembly plant in Brookhaven, Mississippi, to increase worker participation in the corporate decision-making process. The company is so pleased with the results—"With trust, anything is possible," the project directors concluded—that it is now undertaking 160 organizational changes at plants throughout the country, with the full support of the United Automobile Workers. And at plants throughout the auto industry, workers have been given the authority to shut down the

assembly line if they think that, for whatever reason, quality control standards are not being met—a revolutionary change! The particular corporate milieu, or culture, within which the worker is given greater authority and responsibility[^] will vary from company to company. This changing character in boss-worker relations (becoming a two-way street) is one example of the shift in traditional management perceptions and practices that is now apparently under way. The changes are, in a sense, a return to elemental American values, to more democratic organizations, and away from the hierarchical class structure found in so many large corporations today.

Similarly, the task of corporate management is to fashion solutions to the problems of business that are firmly in the American mold, to borrow perhaps from other cultures but not mimic them. American society is individualistic, pluralistic, and entrepreneurial. These are the historic sources of generative energy that largely explain the economic rise in the United States and, most agree, constitute this nation's greatest potential advantage in the unfolding competition for global markets. To renew, encourage, and channel these energies is a challenge facing American management today.

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1. What external contextual dimensions of American industry are shaping managerial decisions according to the evidence presented?
2. Describe the managerial skills and roles that American managers utilize according to the case. How do these skills and roles differ from those of Alcio Morita?

3. How might a practitioner of scientific management respond to the present-day problems of current management as identified? a practitioner of behavioral management theory? a practitioner of contingency theory?
4. Based on the material presented in the case, which of the four emerging perspectives in management theory (Chapter 2) seems most appropriate for solv-

ing current and future managerial problems?

5. Do you share the optimism expressed that American managers can "respond vigorously" to problems when forced to do so? What specific responses do you believe American managers will have to make to recapture their leading role in domestic and foreign markets?