http://polaris.umuc.edu/~tgrodsky/admn601/managethought.html

History of Management Thought

The Evolution of Management Theory

Upon completing this chapter, you should be able to:

- **Explain the setting in which management theory first developed.**
- **Describe the ways in which a theory can be useful.**
- **Distinguish the scientific management school, the classical organization theory school, the behavioral school, and the management science school of management theory.**
- **Understand the historical context in which the systems approach, the contingency approach, and the dynamic engagement approach to management theory have developed.**

THE APOSTLE OF MASS PRODUC'TION

Henry Ford and the Model have long been symbols of the industrial age. Even the subsequent growth and success of Ford's rival, General Motors, was due in large part to GM's need to find an innovative response to the Model T. In large measure, the managerial approach of Henry Ford, as well as his preferences in managerial theory, is a paradigm of much that was constructive and much that was imperfect--in early approaches to management

The son of a poor Irish immigrant, Henry Ford was born in 1863 and grew up on a farm in rural Michigan. He was fascinated by machinery and was quite skilled in repairing and improving almost any machine. He started the Ford Motor Company in 1903, and by 1908, the Model T was built.

In the part of the century when automobiles were introduced, they were a symbol of status and wealth, the near exclusive province of the rich. Ford intended to change that: the Model T was to be for the masses--a car that virtually anyone could afford. He understood that the only way to make such a car was to produce it at high volume and low cost. Ford focused his factory efforts on efficiency, mechanizing wherever possible, and breaking down tasks into their smallest components. One worker would perform the same task over and over, producing not a finished part, but one of the operations necessary for the production of the whole; the incomplete part would then be passed on to another worker, who would contribute a successive operation. Ford was able to achieve remarkable efficiencies: Although the first Model T took over 12 ½ hours to produce, only 12 years later, in 1920, Ford was producing one Model T every minute. By 1925, at the peak of the car's popularity, a Model T was rolling off Ford's assembly lines at the rate of one every 5 seconds.

However, mechanization of the plant had some adverse effects. The faster Ford pushed his workers, the more disgruntled they became. In 1913, turnover was 380 percent, and Ford had to hire ten times more workers than he needed just to keep the line moving. In an action that at the time was unprecedented, Ford simply decided to double wages in order to get the best people and motivate

them to work even harder. In the days following the announcement that wages were being doubled, thousands and thousands of men came to the Ford plant in search of work. Police had to be called in to control the crowds.

When he died in 1945, Ford was worth over $600 million. He left an indelible mark on both American industry and society. His name is synonymous with mass production and the development of modern management theory.

Most people associate Henry Ford with the Model T, the affordable mass-produced automobile that changed society. But Ford is also important as a management thinker because he developed ideas about how organizations function. Moreover, Ford hired theorists, such as Frederick Winslow Taylor, and gave them the chance to develop their management theories. In this chapter we will see how different management theories developed and continue to evolve. But first we'll look at some early ideas about how to run organizations effectively.

EARLY THINKING ABOUT MANAGEMENT

People have been shaping and reshaping organizations for many centuries. Looking back through world history, we can trace the stories of people working together in formal organizations such as the Greek and Roman armies, the Roman Catholic Church, the East India Company, and the Hudson Bay Company. People have also long been writing about how to make organizations efficient and effective-- since long before terms such as "management" came into common usage. Two prominent and instructive examples are the writings left for us by Niccolo Machiavelli and Sun Tzu.

MACHIAVELLI AND SUN TZU:

EARLY STRATEGISTS

Although the adjective 'Machiavellian' is often used to describe cunning and manipulative opportunists Machiavelli was a great believer in the virtues of a republic. This is evident in *Discourses*, a book Machiavelli wrote in 1531 while he lived in the early Italian republic of Florence. The principles he set forth can be adapted to apply to the management of organizations today.

- An organization is more stable if members have the right to express their differences and solve their conflicts within it
- While one person can begin an organization, "it is lasting when it is left in the care of many and when many desire to maintain it."
- A weak manager can follow a strong one, but not another weak one, and maintain authority.
- A manager seeking to change an established organization "should retain at least a shadow of the ancient customs."

Another classic work that offers insights to modem managers is *The Art of War*, written by the Chinese philosopher Sun Tzu more than 2,000 years ago. It was modified and used by Mao Zedong, who founded the People's Republic of China in l949. Among Sun Tzu's dictur are the following:

- When the enemy advances. we retreat!
- when the enemy halts we harass!

When the enemy seeks to avoid battle, we attack!
When the enemy retreats, we pursue!

Although these rules were meant to guide military strategy, they have been used when planning a strategy to engage business competitors. Keep Sun Tzu in mind as you study the chapter about strategy and planning.

Although neither Machiavelli nor Sun Tzu was trying to develop a theory of management per se, their insights teach us an important lesson about history. Management is not something that originated in the United States in this century. We must be careful not to put on historical and cultural blinders when, from the perspective of this particular time and place, we think about the management of organizations.

Before going on to our discussion of the major management theories, let's take a moment to look at the reasons studying management theory will help you understand management and today's complex organizations.

WHY STUDY MANAGEMENT THEORY?

Theories are perspectives with which people make sense of their world experiences. Formally, a **theory** is a coherent group of assumptions put forth to explain the relationship between two or more observable facts. John Clancy calls such perspectives "invisible powers" to emphasize several crucial uses of theories, the "unseen" ways in which we approach our world.

First, theories provide a *stable focus* for understanding what we experience. A theory provides criteria for determining what is relevant. To Henry Ford, a large and compliant work force was one relevant factor as he theorized about his business. In other words, his theory of management included, among other things, this assumption about the supply of labor.

Second, theories enable us to communicate efficiently and thus move into more and more complex relationships with other people. Imagine the frustration you would encounter if, in dealing with other people, you always had to define even the most basic assumptions you make about the world m which you live! Because Ford and his managers fully understood Ford's theory about manufacturing automobiles, they could interact easily as they faced day-to-day challenges.

Third, theories make it possible--indeed, challenge us--to keep learning about our world. By definition, theories have boundaries; there is only so much that can be covered by any one theory. Once we are aware of this, we are better able to ask ourselves if there are alternative ways of looking at the world (especially when our theories no longer seem to "fit" our experience) and to consider the consequences of adopting alternative beliefs. Two cases are instructive.

One example involves world politics. For years, what might be called a theory of the Cold War dominated diplomatic activity between the United States and the Soviet Union. During those years, most diplomats and military officials did not consider what the world would be like if the Cold War ended. Now, however, the "Cold War" theory no longer fits our experience, and government and military officials, as well as managers of organizations; are scrambling to develop new theories for dealing with former enemies on a more cooperative basis. For example, the breakup of the Soviet

Union and Russia's struggles toward financial stability have left some of the world's top scientists unemployed, struggling with poor equipment, and willing to work for little pay. In this breach U.S. firms such as Corning, American Telephone and Telegraph, and United Technologies have capitalized on the opportunity this presents by funding research facilities in Russia.

The other case takes us back to Henry Ford. Ford has been criticized for not using his approach as a way to learn about better ways to run his company. While Ford was giving his customers no choice about anything other than price (which was attractive!) Alfred Sloan was transforming General Motors. Beginning in the 1920s, Sloan rejected part of Ford's theory about running a business in favor of alternative ways to design automobiles and organize manufacturing and distribution. GMs marketing strategy had always been to market nationwide with cars of interest to different segments of the public. Sloan set up separate divisions, with central direction from headquarters, to market the Buick, Oldsmobile, Pontiac, Cadillac, and Chevrolet lines. In contrast to Ford, each type of car has its own distinction and price differentials.

In this chapter, we will focus on four well-established schools of management thought: the *scientific management school*, the *classical organization theory school*, the *behavioral school*, and the *management science school*. Although these schools, or theoretical approaches, developed historical sequence, later ideas have not *replaced* earlier ones. Instead, each new school has tended to complement or coexist with previous ones. At the same time, each school has continued to evolve, and some have even merged with others. This takes us to three recent integrative approaches: the systems approach, the contingency approach, and what we call the dynamic engagement approach to management. Figure 2-1 shows the approximate date when each of these theoretical perspectives emerged, as well as key historical events that signaled the emergence of each way of thinking about organizations and management.

THE EVOLUTION OF MANAGEMENT THEORY

Management and organizations are products of their historical and social times and places. Thus, we can understand the evolution of management theory in terms of how people have wrestled with matters of *relationships* at particular *times* in history. One of the central lessons of this chapter, and of this book as a whole is that we can learn from the trials and tribulations of those who have preceded us in steering the fortunes of formal organizations. As you study management theory you will learn that although the *particular* concerns of Henry Ford and Alfred Sloan are very different from those facing managers in the mid-1990s, we can still see ourselves continuing the traditions that these individuals began long before our time. By keeping in mind a framework of relationships and time, we can put ourselves in their shoes as students of management.

Imagine that you are a manager at an American steel mill, textile factory, or one of Ford's plants in the early twentieth century. Your factory employs thousands of workers. This is a scale of enterprise unprecedented in Western history. Many of your employees were raised in agricultural communities. Industrial routines are new to them. Many of your employees, as well, are immigrants from other lands. They do not speak English well, if at all. As a manager under these circumstances, you will probably be very curious about how you can develop working relationships with these people. Your managerial effectiveness depends on how well you understand what it is that is important to these

people. Current-day challenges parallel some of those faced in the early twentieth century. In the 1980s 8.7 million foreign nationals entered the U.S. and joined the labor market. They often have distinct needs for skills and language proficiency, much as those before them at the advent of the industrial age.

Early management theory consisted of numerous attempts at getting to know these newcomers to industrial life at the end of the nineteenth century and beginning of the twentieth century in Europe and the United States. In this section, we will survey a number of the better-known approaches to early management theory. These include scientific management, classical organization theory, the behavioral school, and management science. As you study these approaches, keep one important fact in mind: the managers and theorist who developed these assumptions about human relationships were doing so with little precedent. Large-scale industrial enterprise was very new. Some of the assumptions that they made might therefore seem simple or unimportant to you, but they were crucial to Ford and his contemporaries.

THE SCIENTIFIC MANAGEMENT SCHOOL

Scientific Management theory arose in part from the need to increase productivity. In the United States especially, skilled labor was in short supply at the beginning of the twentieth century. The only way to expand productivity was to raise the efficiency of workers. Therefore, Frederick W. Taylor, Henry L. Gantt, and Frank and Lillian Gilbreth devised the body of principles known as **scientific management theory.**

FREDERICK W. TAYLOR

Frederick W. Taylor (1856-1915) rested his philosophy on four basic principles:

The development of a true science of management, so that the best method for performing each task could be determined.
The scientific selection of workers, so that each worker would be given responsibility for the task for which he or she was best suited.
The scientific education and development of the worker.
Intimate, friendly cooperation between management and labor.

Taylor contended that the success of these principles required "a complete mental revolution" on the part of management and labor. Rather than quarrel over profits, both sides should try to increase production; by so doing, he believed, profits would rise to such an extent that labor and management would no longer have to fight over them. In short, Taylor believed that management and labor had a common interest in increasing productivity.

Taylor based his management system on production-line time studies. Instead of relying on traditional work methods, he analyzed and timed steel workers' movements on a series of jobs. Using time study as his base, he broke each job down into its components and designed the quickest and best methods of performing each component. In this way he established how much workers should be able to do with the equipment and materials at hand. He also encouraged employers to pay more

productive workers at a higher rate than others, using a "scientifically correct" rate that would benefit both company and worker. Thus, workers were urged to surpass their previous performance standards to earn more pay Taylor called his plan the **differential rate system.**

CONTRIBUTIONS OF SCIENTIFIC MANAGEMENT THEORY

The modem assembly line pours out finished products faster than Taylor could ever have imagined. This production "miracle" is just one legacy of scientific management. In addition, its efficiency techniques have been applied to many tasks in non-industrial organizations, ranging from fast-food service to the training of surgeons.

LIMITATIONS OF SCIENTIFIC MANAGEMENT THEORY

Although Taylor's method led to dramatic increases in productivity and to higher pay in a number of instances, workers and unions began to oppose his approach because they feared that working harder or faster would exhaust whatever work was available, causing layoffs.

Moreover, Taylor's system clearly meant that time was of the essence. His critics objected to the "speed up" conditions that placed undue pressures on employees to perform at faster and faster levels. The emphasis on productivity—and, by extension, profitability—led some managers to exploit both workers and customers. As a result, more workers joined unions and thus reinforced a pattern of suspicion and mistrust that shaded labor-management relations for decades.

HENRY L. GANTT

Henry L. Gantt (1861-1919) worked with Taylor on several projects. But when he went out on his own as a consulting industrial engineer, Gantt began to reconsider Taylor's incentive system.

Abandoning the differential rate system as having too little motivational impact, Gantt came up with a new idea. Every worker who finished a day's assigned work load would win a 50-cent bonus. Then he added a second motivation. The *supervisor* would earn a bonus for each worker who reached the daily standard, plus an extra bonus if all the workers reached it. This, Gantt reasoned, would spur supervisors to train their workers to do a better job.

Every worker's progress was rated publicly and recorded on individual bar charts,--in black on days the worker made the standard, in red when he or she fell below it. Going beyond this, Gantt originated a charting system for production scheduling; the "Gantt chart" is still in use today. In fact, the Gantt Chart was translated into eight languages and used throughout the world. Starting in the 1920s, it was in use in Japan, Spain, and the Soviet Union. It also formed the basis for two charting devices which were developed to assist in planning, managing, and controlling complex organizations: the Critical Path Method (CPM), originated by Du Pont, and Program Evaluation and Review Technique (PERT), developed by the Navy. Lotus 1-2-3 is a creative application of the Gantt Chart.

THE GILBRETHS

Frank B. and Lillian M. Gilbreth (1868-1924 and 1878-1972) made their contribution to the scientific management movement as a husband-and-wife team. Lillian and Frank collaborated on fatigue and motion studies and focused on ways of promoting the individual worker's welfare. To them, the ultimate aim of scientific management was to help workers reach their full potential as human beings.

In their conception, motion and fatigue were intertwined—every motion that was eliminated reduced fatigue. Using motion picture cameras, they tried to find the most economical motions for each task in order to upgrade performance and reduce fatigue. The Gilbreths argued that motion study would raise worker morale because of its obvious physical benefits and because it demonstrated management's concern for the worker.

CLASSICAL ORGANIZATION THEORY SCHOOL

Scientific management was concerned with increasing the productivity of the shop and the individual worker. **Classical organization theory** grew out of the need to find guidelines for managing such complex organizations as factories.

HENRI FAYOL

Henri Fayol (1841-1925) is generally hailed as the founder of the classical management school--not because he was the first to investigate managerial behavior, but because he was the first to systematize it. Fayol believed that sound management practice falls into certain patters that can be identified and analyzed. From this basic insight, he drew up a blueprint for a cohesive doctrine of managers—one that retains much of its force to this day.

With his faith in scientific methods, Fayol was like Taylor, his contemporary. While Taylor was basically concerned with *organizational functions*, however Fayol was interested in the *total organization* and focused on management, which he felt had been the most neglected of business operations. Exhibit 2-1 lists the 14 principles of management Fayol "most frequently had to apply." Before Fayol, it was generally believed that "managers are born, not made." Fayol insisted, however, that management was a skill like any other--one that could be taught once its underlying principles were understood.

Fayol's 14 Principles of management

Division of Labor. The more people specialize, the more efficiently they can perform their work. This principle is epitomized by the modern assembly line.

Authority. Managers must give orders so that they can get things done. While their formal authority gives them the right to command, managers will not always compel obedience unless they have personal authority (such as relevant expertise) as well.

Discipline. Members in an organization need to respect the rules and agreements that govern the organization. To Fayol, discipline results from good leadership at all levels of the organization,

fair agreements (such as provisions for rewarding superior performance), and judiciously enforced penalties for infractions.

Unity of Command. Each employee must receive instructions from only one person. Fayol believed that when an employee reported to more than one manager, conflicts in instructions and confusion of authority would result.

Unity of Direction. Those operations within the organization that have the same objective should be directed by only one manager using one plan. For example, the personnel department in a company should not have two directors, each with a different hiring policy.

Subordination of Individual Interest to the Common Good. In any undertaking, the interests of employees should not take precedence over the interests of the organization as a whole.

Remuneration. Compensation for work done should be fair to both employees and employers.

Centralization. Decreasing the role of subordinates in decision making is centralization; increasing their role in decentralization. Fayol believed that managers should retain final responsibility, but should at the same time give their subordinates enough authority to do their jobs properly. The problem is to find the proper degree of centralization in each case.

The Hierarchy. The line of authority in an organization—often represented today by the neat boxes and lines of the organization chart—runs in order of rank from top management to the lowest level of the enterprise.

Order. Materials and people should be in the right place at the right time. People, in particular, should be in the jobs or positions they are most suited to.

Equity. Managers should be both friendly and fair to subordinates.

Stability of Staff. A high employee turnover rate undermines the efficient functioning of an organization.

Initiative. Subordinates should be given the freedom to conceive and carry out their plans, even though some mistakes may result.

Espirit de Corps. Promoting team spirit will give the organization a sense of unity. To Fayol, even small factors should help to develop the spirit. He suggested, for example, the use of verbal communications instead of formal, written communication whenever possible.

Source: Henri Rayol Industrial and General Administration, J.A.Caubrough, trans.(Geneva International Management Institute, 1930)

MAX WEBER

Reasoning that any goal-oriented organization consisting of thousands of individuals would require the carefully controlled regulation of its activities, the German sociologist Max Weber (1864-1920) developed a theory of bureaucratic management that stressed the need for a strictly defined hierarchy governed by clearly defined regulations and lines of authority. He considered the ideal organization to be a **bureaucracy** whose activities and objectives were rationally thought out and whose divisions of labor were explicitly spelled out. Weber also believed that technical competence should be emphasized and that performance evaluations should be made entirely on the basis of merit.

Today we often think of bureaucracies as vast, impersonal organizations that put impersonal efficiency ahead of human needs. We should be careful, though, not to apply our negative connotations of the word bureaucracy to the term as Weber use it. Like the scientific management theorists, Weber sought to improve the performance of socially important organizations by making

their operations predictable and productive. Although we now value innovation and flexibility as much as efficiency and predictability, Weber's model of bureaucratic management clearly advanced the formation of huge corporations such as Ford. Bureaucracy was a particular pattern of relationships for which Weber saw great promise.

Although bureaucracy has been successful for many companies, in the competitive global market of the 1990s organizations such as General Electric and Xerox have become "bureaucracy busters," throwing away the organization chart and replacing it with ever-changing constellations of teams, projects, and alliances with the goal of unleashing employee creativity.

MARY PARKER FOLLETT

Mary Parker Follett (1868-1933) was among those who built on classic framework of the classical school. However, she introduced many new elements especially in the area of human relations and organizational structure. In this, she initiated trends that would be further developed by the emerging behavioral and management science schools.

Follett was convinced that no one could become a whole person except as a member of a group; human beings grew through their relationships with others in organizations. In fact, she called management "the art of getting things done through people." She took for granted Taylor's assertion that labor and management shared a common purpose as members of the same organization, but she believed that the artificial distinction between managers (order givers) and subordinates (order takers) obscured this natural partnership. She was a great believer in the power of the group, where individuals could combine their diverse talents into something bigger. Moreover, Follett's "holistic" model of control took into account not just individuals and groups, but the effects of such environmental factors as politics, economics, and biology.

Follett’s model was an important forerunner of the idea that management meant more than just what was happening inside a particular organization. By explicitly adding the organizational environment to her theory, Follett paved the way for management theory to include a broader set of relationships, some inside the organization and some across the organization's borders. A diverse set of model management theories pays homage to Follett on this point.

CHESTER I. BARNARD

Chester Barnard (1886-1961), like Follett, introduced elements to classical theory that would be further developed in later schools. Barnard, who became president of New Jersey Bell in 1927, used his work experience and his extensive reading in sociology and philosophy to formulate theories about organizations. According to Barnard, people come together in formal organizations to achieve ends they cannot accomplish working alone. But as they pursue the organization's goals, they must also satisfy their individual needs. And so Barnard arrived at his central thesis: An enterprise can operate efficiently and survive only when the organization’s goals are kept in balance with the aims and needs of the individuals working for it. What Barnard was doing was specifying a principle by which people can work in stable and mutually beneficial relationships over time.

For example, to meet their personal goals within the confines of the formal organization, people come together in informal groups such as cliques. To ensure its survival, the firm must use these informal groups effectively, even if they sometimes work at purposes that run counter to management's objectives. Barnard's recognition of the importance and universality of this "informal organization" was a major contribution to management thought.

Barnard believed that individual and organizations purposes could be kept in balance if managers understood an employee's **zone of indifference--**that is, what the employee would do without questioning the manager's authority. Obviously, the more activities that fell within an employee's zone of indifference (what the employee would accept), the smoother and more cooperative an organization would be. Barnard also believed that executives had a duty to instill a sense of moral purpose in their employees. To do this, they would have to learn to think beyond their narrow self-interest and make an ethical commitment to society. Although Barnard stressed the work of *executive* managers, he also focused considerable attention on the role of the individual worker as "the basic strategic factor in organization." When he went further to emphasize the organization as the cooperative enterprise of individuals, working together as groups, he set the stage for the development of a great deal of current thinking.

For example, companies are increasingly using teams. In fact, some advocate using teams, as the building blocks of the organization. Because teams are generally are self-managing, supervisory roles are limited. Management provides direction by giving each team a common purpose and holds the teams accountable for measurable performance goals. Companies such as Motorola, DuPont, AT&T, and General Electric are moving in this directions We will discuss teams more fully in Chapter 18.

EFFICIENCY AND THE FACTORY

Taking the advice of efficiency expert Walter Flanders in 1908,] Ford bought grounds in Highland Park, where he intended to employ the most modern ideas about production, particularly those of Frederick Winslow Taylor. Those would bring, as Taylor a prophesied, an absolute rationality to the industrial process. The idea was to break each function down into much smaller units so that each could be mechanized and speeded up and eventually flow into a straight-line production of little pieces becoming steadily larger. The process began to change in the spring of 1913. The first piece on the modern assembly line was the magneto coil assembly. In the past, a worker—and he had to be a skilled worker—had made flywheel magneto from start to finish. A good employee could make 34 or 40 a day. Now, however, there was an assembly line for magnetos; divided into 29 different operations performed by 29 different men. In the old system it took 20 minutes to make a magneto; now it took 13.

Ford and his men soon moved to bring the same rationality to the rest of the factory. Quickly, they imposed a comparable system for the assembly of motors and transmissions. Then, in the summer of 1913, they took on the final assembly, which as the rest of the process had speeded up, had become the great bottleneck. The workers [now maneuvered] as quickly as they could around a stationary metal object, the car they were putting together. If the men could remain stationary as the semi-finished car moved the line through them, less of the workers' time—Ford's time—would be wasted.

Charles Sorensen, who had become one of Ford's top production people [initiated the assembly line by pulling] a Model T chassis slowly by a windlass across 250 feet of factory floor, timing the process all the while. Behind him walked six workers, picking up parts from carefully spaced piles on the floor and fitting them to the chassis…[soon,] the breakthroughs came even more rapidly..[By installing an automatic conveyor belt,] Ford could eventually assembly a car in [93 minutes]…just a few years before, in the days of stationary chassis assembly, the best record for putting a car together had been 728 hours of one man's work. Ford's top executives celebrated their victory with a dinner at Detroit's Pontchartrain Hotel. Fittingly, they rigged a simple conveyor belt to a five-horsepower engine with a bicycle chain and used the conveyor to serve the food around the table. It typified the spirit, camaraderie, and confidence of the early days.

Nineteen years and more than fifteen million cars later, when Ford reluctantly came to the conclusion that he had to stop making the T, the company balance was $673 million. And this was not merely a company's success; it was the beginning of a social revolution. Ford himself [believed] he had achieved a breakthrough for the common man. "Mass production," he wrote later, "precedes mass consumption, and makes it possible by reducing costs and thus permitting both greater use-convenience and price-convenience."

[Not surprisingly,] the price of the Model T continued to come down, from $780 in the fiscal year 1910-11 to $690 the following year, then to $600, to $550, and , on the eve of World War I, to $360. At that price, Ford sold 730,041 cars, outproducing everyone else in the world….

Henry Food, immigrant's son and one-time machinist's apprentice, had indeed become a very rich man. Obviously, he had become so by being a venturesome and successful theorist of industrial management. But both his practices and his personality drew fire from those who were critical of his implicit attitude toward those "masses" for whom he had originally perfected and prized the Model T. For example, his widely publicized doubling of wages for employees in 1914 was seen by some as a trailblazing maneuver in management-labor relations, by others as a scheme to solidify Ford's paternalistic power over those who depended upon him for a living. In addition, Ford stubbornly resisted the unionization of his employees long after his major competitors had made agreements with union organizations. Repression on the part of company police against union "agitators was common the company's grounds until, finally, having lost an election conducted by the National Labor Relations Board [a government agency established in 1935 to affirm labor's right to bargain collectively], Ford contracted with the United Auto Workers in 1941.

THE BEHAVIORAL SCHOOL:

THE ORGANIZATION IS PEOPLE

The behavioral school emerged partly because the classical approach did not achieve sufficient production efficiency and workplace harmony. To managers frustration, people did not always follow predicted or expected patterns of behavior. Thus there was increased interest in helping managers deal more effectively with the "people side" of their organizations. Several theorists tried to strengthen classical organization theory with the insights of sociology and psychology.

THE HUMAN RELATIONS MOVEMENT

Human relations is frequently used as a general term to describe the ways in which managers interact with their employees. When "employee management" stimulates more and better work, the organization has effective human relations; when morale and efficiency deteriorate, its human relations are said to be ineffective. The human relations movement arose from early attempts to systematically discover the social and psychological factors that would create effective human relations.

THE HAWTHORNE EXPERIMENTS. The human relations movement grew out of a famous series of studies conducted at the Western Electric Company from 1924 to 1933. These eventually became known as the "Hawthorne Studies" because many of them were performed at Western Electric's Hawthorne plant near Chicago. The Hawthorne Studies began as an attempt to investigate the relationship between the level of lighting in the workplace and worker productivity--the type of question Frederick Taylor and his colleagues might well have addressed.

In some of the early studies, the Western Electric researchers divided the employees into test groups, who were subjected to deliberate changes in lighting, and control groups, whose lighting remained constant throughout the experiments. The results of the experiments were ambiguous. When the test group's lighting was improved, productivity tended to increase, although erratically. But when lighting conditions were made worse, there was also a tendency for productivity to increase in the test group. To compound the mystery, the control group's output also rose over the course of the studies, even though it experienced no changes in illumination. Obviously, something besides lighting was influencing the workers' performance.

In a new set of experiments, a small group of workers was placed in a separate room and a number of variables were altered: Wages were increased; rest periods of varying length were introduced; the workday and work week were shortened. The researchers, who now acted as supervisors, also allowed the groups to choose their own rest periods and to have a say in other suggested changes. Again, the results were ambiguous. Performance tended to increase over time, but it also rose and fell erratically. Partway through this set of experiments, Elton Mayo (1880-1949) and some associates from Harvard, including Fritz J. Roethhsberger and William J. Dickson, became involved.

In these and subsequent experiments, Mayo and his associates decided that a complex chain of attitudes had touched off the productivity increases. Because they had been singled out for special attention, both the test and the control groups had developed a group pride that motivated them to improve their work performance. Sympathetic supervision had further reinforced their motivation. The researchers concluded that employees would work harder if they believed management was concerned about their welfare and supervisors paid special attention to them. This phenomenon was subsequently labeled the **Hawthorne Effect,** since the control group received no special supervisory treatment or enhancement of working conditions but still improved its performance, some people (including Mayo himself) speculated that the control group's productivity gains resulted from the special attention of the researchers themselves.

The researchers also concluded that informal work groups--the social environment of employees--have a positive influence on productivity. Many of Western Electric's employees found their work dull and meaningless, but their associations and friendships with co-workers, sometimes influenced by a shared antagonism toward the "bosses," imparted some meaning to their working lives and provided some protection from management. For these reasons, group pressure was frequently a stronger influence on worker productivity than management demands.

To Mayo, then, the concept of "social man"--motivated by social needs, wanting rewarding on-the-job relationships, and responding more to work-group pressures than to management control--vas necessary to complement the old concept of "rational man" motivated by personal economic needs. All these findings might unremarkable today. But compare what Mayo and his associates considered relevant with what Ford and Weber found relevant, and you see what a change these ideas brought to management theory.

APPLYING QUALITY CONCEPTS TO HUMAN RELATIONS THEORIES

The application of these human relations theories can be seen in today's competitive environment. For example, with the restructuring of today's competitive global economy, many companies have made the decision to "downsize" or reduce the numbers of managers and workers. However, some companies, well aware of the dynamics pointed out by the Hawthorne studies, have approached employee reductions with great care. At Sky Chiefs, a $450 million airline in-flight services corporation, the problems experienced by the airlines industry such as price wars, brisk competition from foreign airlines, aging fleets, and the increasing cost of new planes, were directly affecting the company. Forced to reduce staff, management realized that if it managed the process poorly and didn't take into consideration the needs of employees, those who remained after the downsizing would be less loyal and cohesive as a group.

To minimize potential problems after the downsizing, the management adopted "total quality leadership" to provide the company with a framework for implementing the restructuring. It spent thousands of hours and dollars to fund training and improvement processes related to total quality leadership. The key to the success of the restructuring was that instead of management dictating what would happen and to whom, employees, seen as the backbone of the company, were empowered to facilitate the process. For example, prior to the restructuring process, employees participated in evaluating all headquarters functions. An employee-managed restructuring committee was selected by management to assemble, interpret, and evaluate the data. Then smaller action teams were created to address the downsizing. To help those who were to be let go, extensive counseling and outplacement services were provided, including group workshops on networking, interviewing techniques, and hiring, and employees were videotaped to help with future interviews.

Now, after the restructuring, productivity and operating profits are increasing. The remaining employees have accepted their new roles and responsibilities, and morale continues to improve.

FROM HUMAN RELATIONS TO THE BEHAVIORALSCIENCE APPROACH

Mayo and his colleagues pioneered the use of the scientific method in their studies of people in the

work environment. Later researchers, more rigorously trained in the social sciences (psychology, sociology, and anthropology), used more sophisticated research methods and became known as "behavioral scientists" rather than "human relations theorists."

The behavioral scientists brought two new dimensions to the study of management and organizations. First, they advanced an even more sophisticated view of human beings and their drives than did Mayo and his contemporaries. Abraham Maslow and Douglas McGregor among others, wrote about "self actualizing" people. Their work spawned new thinking about how relationships can be beneficially arranged in organizations. They also determined that people wanted more than "instantaneous" pleasure or rewards. If people were this complex in the way they led their lives, then their organizational relationships needed to support that complexity.

Second, behavioral scientists applied the methods of scientific investigation to the study of how people behaved in organizations as whole entities. The classic example is the work of James March and Herbert Simon m the late 1950's. March and Simon developed hundreds of propositions for scientific investigation, about patterns of behavior, particularly with regard to communication, in organizations. Their influence in the development of subsequent management theory has been significant and ongoing.

According to Maslow, the needs that people are motivated to satisfy fall into a hierarchy. Physical and safety needs are at the bottom of the hierarchy, and at the top are ego needs (the need for respect, for example) and self-actualizing needs (such as the need for meaning and personal growth). In general, Maslow said lower-level needs must be satisfied before higher-level needs can be met. Since many lower-level needs are routinely satisfied in contemporary society, most people are motivated more by the higher-level ego and self-actualizing needs.

Some later behavioral scientists feel that even this model cannot explain all the factors that may motivate people in the workplace. They argue that not everyone goes predictably from one level of need to the next. For some people, work is only a means for meeting lower-level needs. Others are satisfied with nothing less than the fulfillment of their highest-level needs; they may even choose to work in jobs that threaten their safety if by doing so they can attain ---ely personal goals. The more realistic model of human motivation, these behavioral scientists argue is "complex person." Using this model, the effective manager is aware that no two people are exactly alike and tailors motivational approaches according to individual needs.

As American corporations increasingly do business with other cultures, it is important to remember that theories can be culturally bounded. For example, Maslow's hierarchy of needs is not a description of a universal motivational process. In other nations the order of the hierarchy might be quite different depending on the values of the country. In Sweden, quality of life is ranked most important, while in Japan and Germany, security is ranked highest.

McGregor provided another angle on this "complex person" idea. He distinguished two alternative basic assumptions about people and their approach to work. These two assumptions, which he called **Theory X** and **Theory Y,** take opposite views of people's commitment to work in organizations. Theory X managers, McGregor proposed, assume that people must be constantly coaxed into putting forth

effort in their jobs. Theory Y managers, on the other hand, assume that people relish work and eagerly approach their work as an opportunity to develop their creative capacities. Theory Y was an example of a "complex person" perspective. Theory Y management, McGregor claimed, was stymied by the prevalence of Theory X practices in the organizations of the 1950s. As you are already able to see, the roots of Theory X can be traced to the days of scientific management and the factories based on these principles. In accordance with McGregor's thinking, General Electric CEO Jack Welch argues that people must forget the old idea of "boss" and replace it with the idea that managers have the new duties of counseling groups, providing resources for them and helping people think for themselves. "We're going to win on our ideas," he says, "not by whips and chains."

THE MANAGEMENT SCIENCE SCHOOL

At the beginning of World War II, Great Britain desperately needed to solve a number of new, complex problems in Warfare. With their survival at stake, British formed the first operational research (OR) teams. By pooling the expertise of mathematicians, physicists, and other scientists in OR teams, the British were able to achieve significant technological and tactical breakthroughs. When the Americans entered the war, they formed what they called **operations research** teams, based on the successful British model, to solve similar problems. The teams used early computers to perform the thousands of calculations involved in mathematical modeling.

When the war was over, the applicability of operations research to problems in industry gradually became apparent. New industrial technologies were being put into use and transportation and communication were becoming more complicated. These developments brought with them a host of problems that could not be solved easily by conventional means. Increasingly, OR specialists were called on to help managers come up with answers to these new problems. Over the years, OR procedures were formalized into what is now more generally called the **management science school.**

The management science school gained popularity through two postwar phenomena. First, the development of high-speed computers and of communications among computers provided the means for tackling complex and large-scale organizational problems. Second, Robert McNamara implemented a management science approach at Ford Motor Company in the 1950s and 1960s. (Later, he brought the same approach to his assignment as Secretary of Defense in the Johnson Administration.) As McNamara's so-called "Whiz Kids" proteges moved to management positions at Ford and across American industry, the management science school flourished. If you find yourself working m an organization where "crunching the numbers" is the central way that management decisions are reached and justified, you can thank McNamara and his generation.

Today the management science approach to solving a problem begins when a mixed team of specialists from relevant disciplines is called in to analyze the problem and propose a course of action to management. The team constructs a mathematical model that shows, in symbolic terms, all relevant factors bearing on the problem and how they are interrelated. By changing the values of the variables in the model (such as increasing the cost of raw materials) and analyzing the different equations of the model with a computer, the team can determine the effects of each change. Eventually, the management science team presents management with an objective basis for making a decision.

Management science offered a whole new way to think about time. With sophisticated mathematical models, and computers to crunch the numbers, forecasting the future based on the past and present became a popular activity. Managers can now play with the "what if the future looks like this?" questions that previous management theories could not handle. At the same time, the management science school pays less attention to relationships per se in organizations. Mathematical modeling tends to ignore relationships as data, emphasizing numerical data that can be relatively easily collected or estimated. The criticism is thus that management science promotes an emphasis on only the aspects of the organization that can be captured in numbers, missing the importance of people and relationships.

RECENT DEVELOPMENTS IN MANAGEMENT THEORY

Theories are powerful influences. The longer we use a given theory, the more comfortable we become with it and the more we tend to not seek out alternative theories unless events force us to change. This. helps explain why "modern" management theory is really a rich mosaic of many theories that have endured over at least the past century. One benefit of understanding this concurrent popularity of many points of view about organizations is that it prepares you for your own organizational experiences. If this chapter has not already brought to mind different managerial styles to which you have been exposed, it will prepare you for the day when, for example, you work for a "management science" manager who in turn works for a manager who practices by one of the theories to follow in the next section! Or if you have already experienced such managers, it will help you understand their perspectives better.

While it is impossible to predict what future generations will be studying, at this point we can identify at least three additional perspectives on management theory that can grow in importance: the systems approach, the contingency approach, and what we call the dynamic engagement approach.

THE SYSTEMS APPROACH

Rather than dealing separately with the various segments of an organization, the **systems approach** to management views the organization as a unified, purposeful system composed of interrelated parts. This approach gives managers a way of looking at the organization as a whole and as a part of the larger, external environment (see Chapter 3). Systems. theory tells us that the activity of any segment of an organization affects, in varying degrees, the activity of every other segment.

Production managers in a manufacturing plant, for example, prefer long uninterrupted production runs of standardized products in order to maintain maximum efficiency and low costs. Marketing managers, on the other hand, who want to offer customers quick delivery of a wide range of products, would like a flexible manufacturing schedule that can fill special orders on short notice. *Systems oriented* production managers make scheduling decisions only after they have identified the impact of these decisions on other departments and on the entire organization. The point of the systems approach is that managers cannot function wholly within the confines of the traditional organization chart. They must mesh their department with the whole enterprise. To do that, they have to communicate not only with other employees and departments, but frequently with representatives of other organizations as well. Clearly, systems managers grasp the importance of

webs of business relationships to their efforts.

SOME KEY CONCEPTS

Many of the concepts of general systems theory are finding their way into the language of management. Managers need to be familiar with the systems vocabulary so they can keep pace with current developments.

SUBSYSTEMS. The parts that make up the whole of a system are called **subsystems**. And each system in turn may be a subsystem of a still larger whole. Thus a department is a subsystem of a plant, which may be a subsystem of a company, which may be a subsystem of a conglomerate or an industry, which is a subsystem of the national economy, which is a subsystem of the world system.

SYNERGY. Synergy means that the whole is greater than the sum of its parts. In organizational terms, **synergy** means that as separate departments within an organization cooperate and interact, they become more productive than if each were to act in isolation. For example, in a small firm, it is more efficient for each department to deal with one finance department than for each department to have a separate finance department of its own.

OPEN AND CLOSED SYSTEMS. A system is considered an **open system** if it interacts with its environment; it is considered a **closed system** if it does not. All organizations interact with their environment, but the extent to which they do so varies. An automobile plant, for example, is a far more open system than a monastery or a prison.

SYSTEM BOUNDARY. Each system has a boundary that separates it from its environment. In a closed system, the **system boundary** is rigid; in an open system, the boundary is more flexible. The system boundaries of many organizations have become increasingly flexible in recent years. For example, managers at oil companies wishing to engage in offshore drilling now must consider public concern for the environment A trend is that American communities are demanding more and more environmental responsibility from companies. For example, Santa Rosa, California, a city of 125,000, treats environmental violations such as "off-gassing" a waste product, that is, allowing it to evaporate into the atmosphere, as a potential criminal offense.

FLOW. A system has **flows** of information, materials, and energy (including human energy). These enter the system from the environment as *inputs* (raw materials, for example), undergo transformation processes within the system (operations that alter them), and exit the system as outputs (goods and services).

FEEDBACK. Feedback is the key to system controls. As operations of the system proceed, information is fed back to the appropriate people, and perhaps to a computer, so that the work can be assessed and, if necessary, corrected. For example, when Aluminum Company of America began feeding production data back to the factory floor, workers in the Addy, Washington, magnesium plant quickly observed ways to improve operations, boosting productivity by 72 percent. Figure 2-2 (not shown) shows the flows of information, materials, energy, and feedback in an open system.

System theory calls attention to the dynamic and interrelated nature of organizations and the management task. Thus, it provides a framework within which we can plan actions and anticipate both immediate and far-reaching consequences while allowing us to understand unanticipated consequences as they develop. With a systems perspective, general managers can more easily maintain a balance between the needs of the various parts of the enterprise and the needs and goals the whole firm.

THE CONTINGENCY APPR0ACH

The well-known international economist Charles Kmdleberger was fond of telling his students at MIT that the answer to any really engrossing question in economics is: :It depends." The task of the economist, Kindleberger would continue, is to specify *upon what* it depends, and in what ways.

"It depends" is an appropriate response to the important questions in management as well. Management theory attempts to determine the predictable relationships between situations, actions, and outcomes. So it is not surprising that a recent approach seeks to integrate the various schools of management thought by focusing on the interdependence of the many factors involved in the managerial situation.

The **contingency approach** (sometimes called the situational approach) was developed by managers, consultants, and researchers who tried to apply the concepts of the major schools to real-life situations. When methods highly effective in one situation failed to work in other situations, they sought an explanation. Why, for example, did an organizational development program work brilliantly in one situation and fail miserably in another. Advocates of the contingency approach had a logical answer to all such questions: Results differ because situations differ; a technique that works in one case will not necessarily work in all cases.

According to the contingency approach the manager's task is to Identify which technique will, *in a particular situation, under particular circumstances, and at particular time*, best contribute to the attainment of management goals. Where workers need to be encouraged to increase productivity, for example, the classical theorist may prescribe a new work-simplification scheme. The behavioral scientist may instead seek to create a psychologically motivating climate and recommend some approach like *job enrichment*--the combination of tasks that are different in scope and responsibility and allow the worker greater autonomy in making decisions. But the manager trained in the contingency approach will ask, "Which method will work best here?" If the workers are unskilled and training opportunities and resources are limited, work simplification would be the best solution. However, with skilled workers driven by pride in their abilities, a job-enrichment program might be more effective. The contingency approach represents an important turn in modern management theory, because it portrays each set of organizational relationships in its unique circumstances.

For example, when managers at Taco Bell addressed the question of what would work best for its restaurants, they redefined business based on the simple premise that customers value food, service, and the physical appearance of the restaurant. To implement the new customer-focused goals, the company recruited new managers who were committed to creating or delivering goods that customers value and who could coach and support staff in the new direction. To concentrate on

customers, Taco Bell outsourced much of the assembly-line food preparation, such as shredding lettuce, allowing employees to focus on customers. As a result, it has enjoyed a 60 percent growth in sales at company-owned stores. 0ther fast food restaurants might base their business on different situational factors, by the contingency view.

ENTERING AN ERA OF DYNAMIC ENGAGEMENT

All of the preceding theories have come down to us in the late twentieth-century world of organizations and management. Here they are practiced against a backdrop of rapid change and profound rethinking about how management and organizations will evolve in the next century. At the heart of this rethinking, which is really occurring in numerous ways at the same time, are new ways of thinking about relationships and time.

As boundaries between cultures and nations are blurred and new communications technology makes it possible to think of the world as a "global village," the scope of international and intercultural relationships is rapidly expanding. The pace of organizational activity picks up dramatically. These trends indicate a heightened level of *intensity* in organizations and management today.

To emphasize the intensity of modern organizational relationships and the intensity of time pressures that govern these relationships, we call this flurry of new management theory the **dynamic engagement** approach. "Dynamic engagement" is our term. In times when theories are changing, it is often true that the last thing that happens is that someone assigns a name to the new theory. We use *dynamic engagement* to convey the mood of current thinking and debate about management and organizations. It is quite likely that twenty years from now, well into your organizational lives, you will look back and call this period of movement by some other name.

Dynamic-- opposite of static--implies continuous change, growth, and activity; engagement--the opposite of detachment--implies intense involvement with others. We therefore think the term *dynamic engagement* best expresses the vigorous way today's most successful managers focus on human relationships and quickly adjust to changing conditions over time.

Six different themes about management theory are emerging under the umbrella that we call dynamic engagement. To emphasize their importance to your understanding of management in the 1990s and beyond, and to highlight the differences between them, we devote a chapter in Part Two to each of them.

NEW ORGANIZATIONAL ENVIRONMENTS (Chapter 3)

The dynamic engagement approach recognizes that an organization's environment is not some set of fixed, impersonal forces. Rather, it is a complex, dynamic web of people interacting with each other. As a result, managers must not only pay attention to their own concerns, but also understand what is important to other managers both within their organizations and at other organizations. They interact with these other managers to create jointly the conditions under which their organizations will prosper or struggle. The theory of competitive strategy, developed by Michael Porter, focuses on how managers can influence conditions in an industry when they interact as rivals, buyers, suppliers,

and so on. Another variation on the dynamic engagement approach, most notably argued by Edward and Jean Gerner Stead in *Management for a Small Planet*, places ecological concerns at the center of management theory.

ETHICS AND SOCIAL RESPONSIBILITY (Chapter 4)

Managers using a dynamic engagement approach pay close attention to the values that guide people in their organizations, the corporate culture that embodies those values, and the values held by people outside the organization. This idea came into prominence with the publication in 1982 of *In Search of Excellence* by Thomas Peters and Robert Waterman. From their study of "excellent" companies, Peters and Waterman concluded that "the top performers create a broad, uplifting shared culture, a coherent framework within which charged-up people search appropriate adaptations.

Robert Solomon has taken this idea a step further, arguing that managers must exercise moral courage by placing the value of *excellence* at the top of their agendas. In dynamic engagement, it is not enough for managers to do things the way they always have, or to be content with matching their competitors. Continually striving toward excellence has become an organizational theme of the 1990s. Because values, including excellence, are ethical concepts, the dynamic engagement approach moves ethics from the fringe of management theory to the heart of it.

GLOBALIZATION AND MANAGEMENT (Chapter 5)

The dynamic engagement approach recognizes that the world is at the manager's doorstep in the 1990s. With world financial markets running 24 hours a day, and even the remotest corners of the planet only a telephone call away, managers facing the twenty-first century must think of themselves as global citizens. Kenichi Ohmae makes this point as he describes a "borderless" world where managers treat all customers as "equidistant" from their organizations.

A simple comparison illustrates how things have changed. If you were to look through Alfred Sloan’s autobiography about his long career as General Motors chairman through the 1940s, you would find very little about international factors—with good reason m that time and place. Today, however, if you time into a CNN broadcast you will notice that the reporters do not use the word "foreign" at all. Or, consider the poster on the wall of Honda dealerships, which says the idea of an "American car" doesn't make any sense in an era when a single car contains parts made by people from all over the globe.

INVENTING AND REINVENTING ORGANIZATIONS (Chapter 6)

Managers who practice dynamic engagement continually search for ways to unleash the creative potential of their employees and themselves. A growing chorus of theorists are urging managers to rethink the standard organization structures to which they have become accustomed. Peters is once again at the forefront. His concept of "liberation management" challenges the kinds of rigid organization structures that inhibit people's creativity. Peters' heroes succeed in spite of those structures. Michael Hammer and James Champy have made their concept of **reengineering** the

corporation" into a bestseller. Hammer and Champy urge managers to rethink the very processes by which organizations function and to be courageous about replacing processes that get in the way of organizational efficiency.

CULTURES AND MULTICULTURALISM (Chapter 7)

Managers who embrace the dynamic engagement approach recognize that the various perspectives and values that people of different cultural backgrounds bring to their organizations are not only a fact of life but a significant source of contributions.

Joanne Martin has pioneered the cultural analysis of organizations. She explains how differences create unprecedented challenges for modem managers. Charles Taylor is a prominent proponent of the so called "communitarian" movement. Taylor claims that people can preserve their sense of uniqueness--their authenticity—only by valuing what they hold in common and seeking to extend what they hold in common in the organizations and communities in which they live. Cornel West grabs our attention to different cultures with the very title of his book, *Race Matters*. Martin, Taylor, and West all want us to see the benefits that come from welcoming and understanding differences among people. Still, none of them say that acceptance of different cultures will be easy. Multiculturalism is a moving target as more and more people become conscious of their particular cultural traditions and ties. Here is where both "dynamic" and "engagement" clearly come together as we envision the organizations of the twenty-first century.

QUALITY (Chapter 8)

By the dynamic engagement approach, Total Quality Management (TQM) should be in every manager's vocabulary. All managers should be thinking about how every organizational process can be conducted to provide products and services that are responsible to tougher and tougher customer and competitive standards. Strong and lasting relationships can be fruitful byproducts of a "quality" frame of mind and action, by this view. Total Quality Management adds one more dynamic dimension to management, because quality, too, is always a moving target.

Dynamic engagement is an example of the changing face of management theory. Not everyone we have mentioned in this overview of the dynamic engagement approach calls himself or herself a management theorist. Some are philosophers and some are political scientists. As we bring this chapter to a close, we want to point out an important lesson in this lineup of dynamic engagement theorists. The dynamic engagement approach challenges us to see organizations and management as integral parts of modem global society. This was not always a tenet of management theory. Once the door is opened between organizations and the larger world, however, many new influences can come to bear on questions about management theory and relationships.

REMEMBER TO CHANGE WITH THE TIMES

We have discussed two basic things in this chapter. First, theorists, whatever their fields of endeavor, tend to be people and products of their times. Second, management theories, like theories in all fields, tend to *evolve* to reflect everyday realities and changing circumstances. By the same token,

managers must be sensitive to changing circumstances and equally willing to change. If they do not, they must be surpassed by more flexible competitors.

Both of these ideas apply to Henry Ford, the man who boldly braced the ideas of scientific management, revolutionizing the auto industry and society in the process.

Yet many of Ford's managerial practices were conservative or unresponsive to changing times, and his hold on the automotive market was eventually wrested from him by companies more farsighted in their managerial theories and practices. Hostile to the banking community, for example, Ford refused outside investments in his company throughout his lifetime, borrowing capital only when absolutely necessary and preferring to finance corporate activities solely through the company's own income. He was also inclined to ignore the dynamics of the industry that he had largely founded. Although he opened up branch factories to cater to a growing European market, he long failed to follow managerial advice to retool for both the hydraulic brake and six- or eight cylinder engine; he also resisted management counsel regarding the advances in gearshift and transmission technology and even put off introducing color variety into his product line (Ford preferred his cars to be black). His disinterest in consumer demands for comfort and style ultimately cost him his industry's leadership, which passed to General Motors, a conglomerate assembled from over 20 divers firms by founder William Durant and a second generation of American industrial organizers.