

1.3: Management Theory

What you'll learn to do: summarize the development of management theory and the key functions of management today

Management theory got its start during the Industrial Revolution when companies were interested in maximizing the productivity and efficiency of their workers in a scientific way. In this section you'll learn about the major contributors to the field of management theory and how their ideas are used today.

learning objectives

- Summarize the contributions of Frank and Lillian Gilbreth to scientific management
- Summarize Henri Fayol's contributions to the field of management theory
- Summarize the key functions of management today

Scientific Management Theory

Just over one hundred years ago Frederick Taylor published *Principles of Scientific Management*, a work that forever changed the way organizations view their workers and their organization. At the time of Taylor's publication, managers believed that workers were lazy and worked slowly and inefficiently in order to protect their jobs. Taylor identified a revolutionary solution:

The remedy for this inefficiency lies in systematic management, rather than in searching for some unusual or extraordinary man.

You might think that a century-old theory wouldn't have any application in today's fast-paced, technology-driven world. You'd be wrong, though! In fact much of what you've already learned in this course is based on Taylor's work, and plenty of what you'll experience in the workplace will be indebted to him, too. If you recognize any of the following, you have already seen his principles of scientific management in action: organizational charts, performance evaluations, quality measurements and metrics, and sales and/or production goals.

Scientific management is a management theory that analyzes work flows to improve economic efficiency, especially labor productivity. This management theory, developed by Frederick Winslow Taylor, was popular in the 1880s and 1890s in U.S. manufacturing industries.

While the terms "scientific management" and "Taylorism" are often treated as synonymous, a more accurate view is that Taylorism is the first form of scientific management. Taylorism is sometimes called the "classical perspective," meaning that it is still observed for its influence but no longer practiced exclusively. Scientific management was best known from 1910 to 1920, but in the 1920s, competing management theories and methods emerged, rendering scientific management largely obsolete by the 1930s. However, many of the themes of scientific management are still seen in industrial engineering and management today.

Frederick Winslow Taylor



Frederick Winslow Taylor is considered the creator of scientific management.

Frederick Winslow Taylor was an American mechanical engineer who sought to improve industrial efficiency by determining the amount of time it takes workers to complete a specific task and determining ways to decrease this amount of time by eliminating any potential waste in the workers' process.

A significant part of Taylorism was time studies. Taylor was concerned with reducing process time and worked with factory managers on scientific time studies. At its most basic level, time studies involve breaking down each job into component parts, timing each element, and rearranging the parts into the most efficient method of working. By counting and calculating, Taylor sought to transform management into a set of calculated and written techniques..

Taylor proposed a "neat, understandable world in the factory, an organization of men whose acts would be planned, coordinated, and controlled under continuous expert direction." Factory production was to become a matter of efficient and scientific management—the planning and administration of workers and machines alike as components of one big machine.

One of Taylor's most famous studies was from his time at the Bethlehem Steel Corporation in the early 1900's. He noticed that workers used the same shovel for all materials, even though the various materials differed in weight. By observing the movements of the workers and breaking the movements down into their component elements, Taylor determined that the most efficient shovel

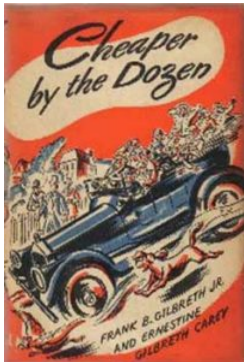
load was 21½ lb. Accordingly, he set about finding or designing different shovels to be used for each material that would scoop up that amount.

Taylor summed up his efficiency techniques in his 1911 book *The Principles of Scientific Management*. Important components of scientific management include analysis, synthesis, logic, rationality, empiricism, work ethic, efficiency, elimination of waste, and standardized best practices. All of these components focus on the efficiency of the worker and not on any specific behavioral qualities or variations among workers.

Taylor's scientific management consisted of four principles:

1. Replace rule-of-thumb work methods with methods based on a scientific study of the tasks.
2. Scientifically select, train, and develop each employee rather than passively leaving them to train themselves.
3. Provide detailed instruction and supervision of each worker in the performance of that worker's discrete task.
4. Divide work nearly equally between managers and workers, so that the managers apply scientific management principles to planning the work and the workers actually perform the tasks.

Frank and Lillian Gilbreth



Cheaper by the Dozen

While Taylor was conducting his time studies, Frank and Lillian Gilbreth were completing their own work in motion studies to further scientific management. The Gilbreth name may be familiar to anyone who has read the book *Cheaper By The Dozen*, a biographical novel about the Gilbreth family, their twelve children, and the often humorous attempts of the Gilbreths to apply their efficiency methods in their own household.

The Gilbreths made use of scientific insights to develop a study method based on the analysis of work motions, consisting in part of filming the details of a worker's activities while recording the time it took to complete those activities. The films helped to create a visual record of how work was completed, and emphasized areas for improvement. Secondly, the films also served the purpose of training workers about the best way to perform their work.

This method allowed the Gilbreths to build on the best elements of the work flows and create a standardized best practice. Time and motion studies are used together to achieve rational and reasonable results and find the best practice for implementing new work methods. While Taylor's work is often associated with that of the Gilbreths, there is a clear philosophical divide between the two scientific-management theories. Taylor was focused on reducing process time, while the Gilbreths tried to make the overall process more efficient by reducing the motions involved. They saw their approach as more concerned with workers' welfare than Taylorism, in which workers were less relevant than profit. This difference led to a personal rift between Taylor and the Gilbreths, which, after Taylor's death, turned into a feud between the Gilbreths and Taylor's followers.

Even though scientific management was pioneered in the early 1900s, it continued to make significant contributions to management theory throughout the rest of the twentieth century. With the advancement of statistical methods used in scientific management, quality assurance and quality control began in the 1920s and 1930s. During the 1940s and 1950s, scientific management evolved into operations management, operations research, and management cybernetics. In the 1980s, total quality management became widely popular, and in the 1990s "re-engineering" became increasingly popular. One could validly argue that Taylorism laid the groundwork for these large and influential fields that we still practice today.

Field of Management Theory

Henri Fayol, ca. 1900

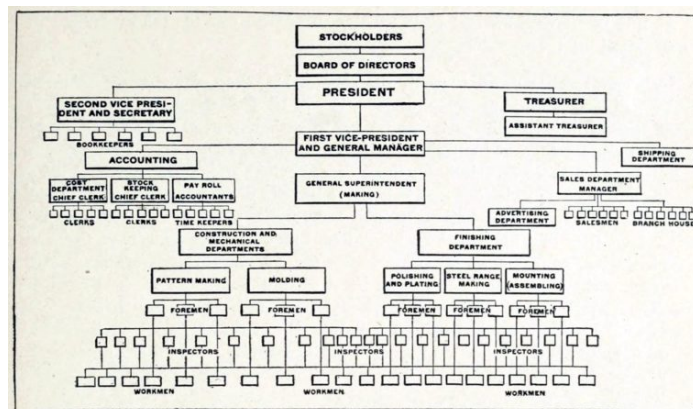
Managers in the early 1900s had very few resources at their disposal to study or systematize their management practices. Henri Fayol, who was a French mining engineer and author, saw the need for this kind of study and, using the mines as the basis for his studies, developed what is now regarded as the foundation of modern management theory. In 1914 he published *Administration industrielle et générale*, which included his now-famous "fourteen principles of management." Fayol's practical list of principles guided early twentieth-century managers to efficiently organize and interact with employees.

Fayol recognized that management is fundamentally a process involving people. He saw that work could be managed more efficiently and smoothly by supporting the workers doing the tasks. He proposed that if managers could instill a sense of team spirit (*esprit de corps*) and encourage employees to contribute their own ideas, the problem of high turnover and instability in the



workforce might be solved. At the time, working conditions in much of the industrialized world were terrible, and many of Fayol's principles ran counter to conventional ways of thinking about and treating workers. For instance, Fayol said that it's essential to pay a fair wage for a fair day's labor, and he claimed that productivity would actually increase if managers treated workers fairly and kindly. These were radical ideas at the time. Fayol argued that that discipline, while important to organizational success, ought to come from effective leadership—not from dictatorial or harsh management practices. Fayol recognized that a company's people, not its structure, determine success or failure.

Fayol also addressed the role of structure in building an efficient organization. Several of his management principles deal with the framework in which managers operate, touching on aspects of what we would today call "organizational structure." He encouraged companies to arrange men, machines, and materials systematically in order to maximize efficiency. In short, he applied the adage "a place for everything and everything in its place" to the operations of a business. He believed that managers ought to communicate to employees about their roles and responsibilities in a clear and compelling manner, thereby reducing uncertainty and waste. He also brought to the business environment a concept that had been used in military strategy for centuries: the chain of command. Fayol's "scalar chain" was, in effect, an organization chart of the type seen today (and below), showing the lines of communication and chain of command from the top of a company to the bottom. He believed that by means of such hierarchies, firms could achieve unity of direction and command.



Organization Chart of a Large Stove-Manufacturing Company, 1914.

The notion of unity of direction and command meant that "for any action whatsoever an employee should receive orders from one superior only," a concept Fayol adapted from the biblical teaching that "no man can serve two masters." He proposed that organizational activities having the same objective should be directed by a single manager using a unified plan to attain a single common goal. At the same time, that single manager oversees one group of workers all working together to reach the goal. By adhering to these principles of unity, organizations can avoid duplicating efforts and realize efficiencies instead.

These efficiencies were not possible without what Fayol established as his first and perhaps most profound principle—the division of labor or division of work. Fayol recommended that jobs be broken down to the individual tasks that comprise the whole and workers be assigned to those individual tasks or series of tasks. He believed that when someone performs the same task over and over, he acquires speed and accuracy. Fayol observed: "The worker always on the same post, the manager always concerned with the same matters, acquires an ability, sureness, and accuracy which increases their output."^[1]

Fayol also made an enormous contribution to management theory through his scientific study of the work of management. He made a clear distinction between operational activities—manufacturing, sales, etc.—and managerial activities, which he viewed as being fundamentally concerned with human interaction. From there, he systematically examined the different aspects of the management process and spelled out the functions that managers perform.

In the following excerpt from *General and Industrial Management*, Fayol identifies five functions of management:

"To manage is to forecast and **plan**, to **organize**, to **command**, to **coordinate**, and to **control**. To foresee and provide means examining the future and drawing up the plan of

action. To organize means building up the dual structure, material and human, of the undertaking. To command means maintaining activity among the personnel. To coordinate means binding together, unifying, and harmonizing all activity and effort. To control means seeing that everything occurs in conformity with established rule and expressed command. [Emphasis added.]^[2]"

Over the years, management theorists have built upon and refined Fayol's original work and, more recently, have combined the "command" and "coordinate" functions into one function: leading. Today, the key functions of management are considered to be the following: **planning**, **organizing**, **leading**, and **controlling**. All levels of management perform these functions; however, as with the skills required for effective management, the amount of time a manager spends on each function depends on the level of management and the needs of the organization. In the next readings we will explore each of these functions in greater depth.

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1. Fayol, H. (1949). General and Industrial Management (C. Storrs, Trans.). London: Sir Isaac Pitman & Sons. ↵
 2. Fayol, H. (1949). General and Industrial Management (C. Storrs, Trans.). London: Sir Isaac Pitman & Sons. ↵
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