A HISTORY OF TWENTIETH CENTURY

MANAGEMENT THOUGHT

DISSERTATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

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* * * * * *

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Concepts have been used to state and to express the principles and the philosophies of management. In the past, as in the present, the concepts pertaining to management as a distinct and identifiable mental process have been the symbols for the development and the understanding of management thought. Although some of the present concepts of management may now seem to be simple and obvious, their origins probably required a great effort in reflective thinking by someone at some time. The history of management thought indicates that all progress in management has been related to these intellectual discoveries of basic concepts and conceptual relationships. Without management concepts, any research, teaching, or practice in the field of management would be limited to absorptive or retentive thinking. With precise concepts, management knowledge and understanding can expand at an accelerated rate. Both reasoning and creative thought can be exercised in far greater degree when concepts are available for the brain to use. Without concepts, communication is a subject area becomes limited to descriptions of things and activities.

The concepts may be verbal, physical, schematic, or symbolic. The developments in model building in the field of economic theory have been related to such abstract types of concepts. Developments in management thought have followed in the wake of developments in economic thought. Both disciplines have used similar methods and similar conceptual models.

The concept of management by incentive and initiative differs from the concept of scientific management; the concept of management by
objectives results in a different reaction than the concept of managing to "muddle through." The concept of organization and management is different from the concept of the management process, just as the concept of power through people results in a different image from a concept of power over people. The concept of centralized control with decentralized administration enlarges the scope of management thought concerning organization. The concept of countervailing power differs from one of integrated power. The former may continue to maintain a situation of conflict and waste; the latter could lead to a situation of mutual interests and waste elimination.

This study of a twentieth century history of management thought is the result of the student's mental explorations into the literature of management over the past twenty years. Probably, because of basic training in the discipline of psychology, the student developed an intellectual curiosity about the mental process involved in the management function. Study and research of the literature of management disclosed the concepts that emerged from the intellectual discoveries of past and present authorities in the field. It was discovered that management thought has developed along an identifiable thought stream during the twentieth century. Consequently, management thought has a short history. Present prospects indicate that it will have a greater history in the future.

In this dissertation, the student has undertaken the research task of analyzing, identifying, illustrating, and recording the basic concepts of management as they appeared in the literature of management from the
time that a literature of management was created to the present. The thought stream of the concepts is presented in a chronological manner. An integration of the concepts is made to provide a conceptual model of a modern management process and a framework for progress in management philosophy. Thus, a twentieth century history of management thought has been prepared for scholars interested in the historical development of concepts in the field of management.

Without the encouragement, the assistance, and the helpful criticism of the members of the committee, this dissertation would not have been possible. Consequently, the candidate wishes to acknowledge his debt of gratitude and his appreciation to his doctoral dissertation committee. Professor Ralph C. Davis inspired the candidate's initial interest in the historical development of management thought. In addition, he guided the candidate's research efforts toward the appropriate sources of information. He also provided many helpful suggestions for identifying and presenting the proper concepts required to illustrate the chronological development of management thought during the twentieth century. Professor Robert D. Patton constructively criticized the presentation of the research findings; he also contributed valuable suggestions which were used in the final draft of the dissertation. Professor Elvin F. Donaldson gave helpful guidance regarding the language and the style of the text of the manuscript. His instructions improved the communication of the basic concepts in the finished dissertation. Professor Charles A. Dice made useful suggestions in relation to the points of view which should be considered in the collection of data from the research sources in the
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CHAPTER I
INTRODUCTION
NATURE OF THE STUDY

The nature of this study of the development of management thought in the twentieth century will be explained by discussing in turn the problem, the methodology used in the study, the limitations of the methodology, and the significance of the findings.

The Problem

The purpose of this dissertation is to (1) identify and illustrate the significant developments in management thought during the twentieth century; (2) record the chronological development of management concepts; (3) indicate any relationship of economic and industrial developments to the development of management thought; and (4) identify any stages of management thought that have occurred. The problem at hand is to select, analyze, integrate, and record the significant intellectual discoveries and concepts pertaining to management as they evolved in the twentieth century and illustrate their relationships to established modern management philosophy or theory.

The study, teaching, and thinking of management as a separate and distinct subject did not become apparent until the twentieth century. During the past half century, there has been a great deal of literature on the subject of management. Professional societies have been organized to further research and education in the field of management. Colleges and universities have initiated various types of curricula for the offering
of management courses of study and research. Established educational foundations have allocated financial grants for research projects in the field of management. Universities and business concerns have installed management development programs to provide extended and advanced educational offerings to practitioners of management in business and governmental organizations. There is increasing evidence to support the acceptance of management as a definite and identifiable subject for research, study, and practice.

The development of management thought in the twentieth century began about the turn of the century with the concept of scientific management. Prior to 1930, there is continual reference to the "Management Movement" throughout the literature of management. After 1930, management seemingly had moved into a position of acceptance as a definite and an identifiable discipline for experimentation, teaching, and practice.

If a reference point is desired to mark the beginning of the so-called "Management Movement," the presentation of Henry R. Towne's classic paper, "The Engineer as Economist," could be used. Henry R. Towne, President of the Yale and Towne Manufacturing Company, presented this paper in 1886 at a meeting of the American Society of Mechanical Engineers. His comments stimulated actions toward the recognition and development of management as a science. Pertinent statements from Towne's paper were as follows:

The matter of shop management is of equal importance with that of engineering. . . .

The management of works is unorganized, is almost without literature, has no organ or medium for the interchange of experience, and is without association or organization of any kind. . . .
The remedy must not be looked for from those who are "business men" or clerks or accountants only; it should come from those whose training and experience has given them an understanding of both sides (the mechanical and the clerical) of the important questions involved. It should originate from engineers.¹

Frederick W. Taylor had joined the American Society of Mechanical Engineers in 1885. His attitude toward management corresponded with Towne's concepts. Subsequently, he was instrumental in the initiation of actions, attitudes, and thought processes that materialized the plea in Towne's paper.

Frederick W. Taylor defined management in the following words:

The art of Management has been defined, "as knowing exactly what you want men to do, and then seeing that they do it in the best and cheapest way." No concise definition can fully describe an art, but the relations between employers and men form without question the most important part of this art. In considering the subject, therefore, until this part of the problem has been fully discussed, the other phases of the art may be left in the background.²

In order to practice the art of management scientifically, Taylor advocated a sequence of actions, which were (1) experimentation; (2) setting standards; (3) planning work; and (4) maintaining the standards. Therefore, early in the twentieth century, there existed a definition of management and an established sequence of actions for the practice of scientific management. Almost fifty years later, management educators, researchers, and philosophers are striving for a more dependable definition of management and an accurate concept of the functions or processes involved in management as a basis for teaching and professional practice.


In the nineteen fifties, management authorities have defined management and the process of managing in somewhat different ways; however, the basic concept of Taylor concerning the definition of management and the work of management has stood the test of time and experimentation. For purposes of comparison with the concept of Frederick W. Taylor, definitions of management and the process of management are shown from selected modern management authorities, viz., Ralph C. Davis, William H. Newman, George R. Terry, Harold F. Smiddy, and Harold Koonts and Cyril O’Donnell.

Management is the function of executive leadership. Its organic subfunctions are the creative planning, organizing, and controlling of the organizational activities for which the executive is responsible. They have to do with the accomplishment of the group and project objectives of the organization.\(^3\)

Administration is the guidance, leadership, and control of the efforts of a group of individuals toward some common goal. Clearly, the good administrator is one who enables the group to achieve its objectives with a minimum expenditure of resources and effort and the least interference with other worthwhile activities.\(^4\)

Management is the activity which plans, organizes and controls the operations of the basic elements of men, materials, machines, methods, money, and markets, providing direction and co-ordination, and giving leadership to human efforts, so as to achieve the sought objectives of the enterprise.\(^5\)

Managing, as a distinct and a professional kind of work, is leading through planning, organizing, integrating, and measuring—as the elements in this work of a professional manager.\(^6\)

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The coordination of human effort is the essence of all grouped activities, whether the objectives are business, military, religious, charitable, educational, or social. The fundamental component of this association is management—the function of getting things done through others. In bringing about this coordination of group activity, the manager plans, organizes, staffs, directs, and controls the activities of subordinates.  

An analysis of the management definitions and the management process by modern management authorities indicates that management as a distinct discipline has three basic elements: (1) an objective must exist for attainment by group effort; (2) a process or general approach based on the logic of effective thinking must be followed to attain the objective; and (3) human effort or people must be utilized through the process or ways and means to attain the objective that has been set.

During the past half century of management progress, authorities in the field of management have worked through methods of experimentation, observation, conceptual models, and philosophical speculations to resolve the problems that interfere with the formation of a universally acceptable philosophy of management or a true science of management—if such can be found. The search for a universally acceptable philosophy or perhaps theory of management has more widespread interest and effort in 1959 than at the turn of the twentieth century. During the intervening years, a literature of management has come into being that records the thinking of recognized authorities in management about the nature, the work, the mission, the techniques, and the functions or elements of management. Management

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thought has developed and progressed in an evolutionary manner as the result of study, research, and education. Management thought has also been influenced by changes in the economic and industrial climate of the economy.

Methodology

The methodology followed in attaining the purpose of the dissertation and the resolving of the problem is one of analysis, classification, and identification. An analysis of significant management concepts and management thought during the twentieth century has been made from original sources that appear in the literature of management.

The first step in the approach to the problem involved the careful selection of the sources to be used for analysis and classification. From the professional journals in the field of management and the contributions to management thought in book form, a selection was made of articles and books written by recognized authorities in management. Little difficulty ensued concerning the sample selected because a personal reading and examination was accomplished for virtually all of the publications concerning management that appeared during the twentieth century. The bibliography lists the items of literature selected for analysis and classification; most of the publications in management during the present century appear in the list.

Following the selection of the publications representative of the literature of management, a reading and an analysis was made to identify the significant contributions to management thought from each source. In order to follow a standard for the selection, identification, and recording
of significant contributions to management thought, the conceptual model shown in Figure 1 was used.

**FIGURE 1**

CONCEPTUAL MODEL FOR MANAGEMENT PROCESS

- **Objectives or desired results**
  to be achieved by the management process

- **Elements in the management process**
  - Policies that guide thought before taking action
  - Ethics that influence executive conduct
  - Leadership, which is the dynamic force
  - Planning actions necessary to achieve objectives
  - Organizing to put plans into effect
  - Directing, or motivating people in the organization to carry out plans
  - Co-ordinating actions in conformance to plans
  - Controlling performance in accordance with plans

- **Group effort utilized by management process in achievement of objectives or desired results**

- **Results from operative performance**

Management was assumed to be the process or ways and means for achieving objectives or desired results through the intelligent utilization of human effort and resources. The process of management was assumed to be any
functions or activities concerned with policies, ethics, leadership, planning, organization, control, co-ordination, direction, or motivation that were applied to group effort to achieve an objective. Each contribution to management thought during the twentieth century that had a bearing on any phase of the conceptual model for management as an identifiable subject was recorded and illustrated. After the selection, analysis, identification, classification, and recording of the significant contributions to management thought were accomplished, they were illustrated and presented in a chronological manner to present the evolutionary development of management thought in the twentieth century. Concurrently with the analysis of management thought, consideration was given to the key economic and social forces that existed at the time the contribution to management thought was made. It was assumed that the development of management thought had a relationship to the contemporary environmental factors and forces. Following the chronological presentation of the development of management thought, a synthesis was made of the various management thought streams as they appeared and became integrated into modern management philosophy or management theory.

Inasmuch as many significant contributions to management thought have been made by numerous management scholars and philosophers, it is believed that a contribution to knowledge can be made by an analysis, classification, and chronological recording of existing contributions to provide a consolidated basis for further research and development in the area of management philosophy or management theory.
Limitations

The methodology used in resolving the problem to attain the purpose of the dissertation has certain limitations. Only recorded contributions to management thought that appeared in authoritative books and in the professional management journals were taken into consideration. It is conceivable that there were personal influence contributions and verbal contributions that escaped detection because they were not recorded.

The analysis, identification, classification, and recording of management concepts were limited to the conceptual model established as a standard to select the examples used in illustrating the developments in management thought. For this reason, the development of management thought described pertains primarily to the area of general management or the discipline of management proper. Developments in the applied areas such as personnel management, office management, production management, or marketing management were eliminated from consideration. It was assumed that the conceptual model, if valid, would serve to identify the development of management thought toward a universally acceptable philosophy of management or management theory that could be applied to any operating function. Consideration of the applied areas of management would have entailed more consideration of techniques and practices than the intellectual level of management thought.

Finally, the methodology used was limited to the subjective value judgments of the student. There was no way to measure quantitatively the criteria for selecting, analysing, and classifying the management concepts used in the study against the conceptual model established as the standard.
In addition, the changing terminology in the field of management and the lack of a uniform terminology for use among the various authorities in their writings resulted in the necessity for interpretations of meaning with respect to the contributions to management thought.

Throughout the study, the limitations were constantly considered and every measure was taken to maintain an objective approach insofar as intellectual competence and integrity could compensate for the limitations existing in the methodology.

PRESENTATION OF THE STUDY

A short prelude to twentieth-century management thought is given as a background for the chronological development of management concepts that follow the turn of the century. A brief summary of the economic, social, and technological events is presented to establish the environmental situation that preceded the time of scientific management.

During the period from 1900 to 1920, scientific management emerged as a novel approach to the practice, study, and teaching of management. The philosophies and concepts of the pioneering authorities in the field of management are identified, analyzed, and described. During this period, most of the contributions to management literature came from professional engineers and businessmen. Few college professors wrote textbooks for management courses or submitted articles to the professional journals. The early writings of the pioneering authorities have become the classics in the literature of management and are well known as such. The work of each pioneering authority is analyzed and illustrated.
From 1920 to 1950, the literature of management became oriented around its contribution to management education. Competent textbooks were written for use in management courses in schools of engineering and colleges of commerce. Collected papers of past management articles were edited in response to demands for authoritative information about scientific management. Some books and articles were prepared on the philosophical and theoretical aspects of management. National studies of the economy involving management and its effect on the economy were undertaken. An analysis of the management concepts and the trend of management thought is made and illustrated chronologically for this period.

From 1930 to 1940, management thought evolved into concepts of management functions as compared with inquiries limited to organizational framework and systems for work performance. Elements of management and the basic factors of business began to challenge the intellects of scholars and practitioners in management. Attention is given to identifying the functions or elements of management that emerged during this period.

The area of general management and the management process became popular between 1940 and 1950. More interest was shown in the general management approach to the achievement of desired results in business and industrial enterprises. Contributions to management literature began to reflect interest in the management process for the efficient practice of management in the applied functional areas. A chronological analysis and presentation is made of the management concepts as they were combined into a more integrated philosophy of management.
From 1950 to 1959, the first contributions to management literature appeared bearing titles of "Principles of Management." Courses in the schools were offered with the title of "Principles of Management," in addition to courses in industrial organization and management, factory management, and business organization. Management as a distinct and identifiable subject was accepted as a discipline for research, teaching, and study. The management process was being augmented by contributions to the literature of management from the behavioral scientists and those interested in developing quantitative techniques for decision-making and problem-solving. Professional management associations became interested in management philosophies and creeds as a basis for corporate personalities and corporate images. During this period, important progress was made in quantitative research and measurement for the functions in the management process. Creative thinking, in relation to the planning function and the setting of objectives, became a subject for contributions to the literature of management. An analysis is made of the contributions to management literature from the new sources of contributors as well as those in the field of management proper. The thought streams from the new sources are identified and related to basic management thought and concepts.

A summary chapter is used to illustrate the development of management thought from the beginning of scientific management to modern concepts of management philosophy or theory. The most significant contributions to management thought are identified. An attempt is made to integrate the contributions to management thought from the behavioral scientists and the mathematical scientists.
SIGNIFICANCE OF THE STUDY

Although a rich and valuable literature of management has been compiled during the twentieth century, there has been no previous attempt to analyze, integrate, and classify it in a chronological manner. A search of the literature disclosed three previous studies having relation to a history of management. All of them were limited mainly to the early developments of scientific management and the management concepts of the pioneers in the field.

In 1915, Horace B. Drury, an instructor in Economics and Sociology at the Ohio State University, published his doctoral dissertation entitled *Scientific Management: A History and Criticism*. In 1946, George Filipetti, a professor of Economics and Business Administration at the University of Minnesota published a short book under the name of *Industrial Management in Transition*. In 1953, Henry P. Dutton published an article in *Advanced Management* entitled "A History of Scientific Management in the United States of America." The article was based in part on the paper "History of Scientific Management in America," which had been prepared for the 1938 International Management Congress. These studies pertaining to the history of scientific management are excellent portrayals of the management movement during the first part of the century. Little effort has been given to an analysis and an appraisal of management thought during the past twenty-five years.

This study is significant because it is the first attempt to search out and develop the trend of management thought from its inception as scientific management to its present acceptance as a management process.
or management philosophy that can be applied to all functions of business activities. The presentation of a chronological development of management thought can contribute to the teaching of management and to the stimulation of further research on the subject of management as a basis for the logic of effective thinking in the solution of business problems.
CHAPTER II
PREFLUDI TO TWENTIETH CvErvY MANAGEMENT THOUGHT

Management thought germinated during the nineteenth century. Although there had been contributions to the literature of management thought in England during the eighteen thirties, the contributions were so few and so little heeded that they had no noticeable influence until they were rediscovered in the twentieth century. Not until the eighteen eighties did the literature of management have a firm foundation. Interest in management and management thought did not occur until the economy became industrialized; with economic and industrial development came the inquiry and study into the nature and methods of management.

ECONOMIC AND INDUSTRIAL CLIMATE

In the latter part of the nineteenth century, the forces of an expanding population and technological advances increased the size and complexity of business enterprises. The factory system became established. Improvements in transportation and communication facilitated the growth of industries and manufacturing establishments.

Population

In 1850, the Americas had but one-twentieth of the population of the world with one-third of the world's land area. This ratio of population to land area encouraged Europeans to immigrate to the United States. Between 1820 and 1870, the immigration of farmers and artisans from Northern
Europe to the United States was a major factor in the nation's population increase from 10 million to 40 million. Between 1870 and 1914, many unskilled laborers emigrating from Europe expanded the available labor force. By 1900, the population had increased to 76 million. The labor force was adequate for an industrial economy.

**Industrialization**

The factory system evolved from the combination of inventions, improvements in power, and the increasing labor supply. Technological developments permitted manufacturing to progress from unit production to mass production methods. Mass production methods required changes in organization to better utilize workers in the factory system. Between 1870 and 1914, there were significant improvements in transportation and communication facilities. New sources of natural resources were discovered, investment and financial institutions were organized to support an industrial economy, and foreign capital became available for industrial uses. Large-scale production emerged in the basic industries, especially in the iron and steel and the petroleum industries. By 1890, the United States had become a major manufacturing nation with capacities and abilities to produce goods for a low-cost market. The geographic and population expansions extended the market for products from the factories.

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Transportation and Communication

Industrial investment enabled the railroads to expand and facilitate the movement of population and markets westward. This increased the need for better communication.

The telegraph system was developed in the eighteen forties. Between 1860 and 1915, it increased from 50,000 to 1,600,000 miles of wire.\(^2\) Telephone exchanges were established in almost every state and territory within three years after the telephone was patented by A. Graham Bell in 1876.\(^3\) After 1860, the postal service was constantly improved by the expansion of the railroads. In 1866, the service was initiated for transatlantic cable messages. By 1901, it was possible to communicate halfway around the world by "wireless" or radio.\(^4\)

The factors, forces, and effects of population, power, inventions, communication system, transportation systems, factories, financial institutions, markets, and labor supply developed an industrial economy in which more efficient management methods were required. The situation was ready for contributions to management thought concerning improved management techniques and methods for the industrialized economy.

REFLECTIONS OF INDUSTRIAL DEVELOPMENT IN THE LITERATURE

Industrial development, accompanied by a changing social order, created interest in group efforts and group objectives in manufacturing.


\(^3\)Ibid., p. 426.

\(^4\)Ibid., pp. 641-50.
Recognition of the effects of industrialization and a changing social order was given in the writings of a mathematician, a physicist, a theologian, and a militarist. Their names were Charles Babbage, Andrew Ure, Pope Leo XIII, and Carl von Clausewitz. The first treatment of manufacturing (manufactures) as a separate subject for study came from Charles Babbage in 1832 with his book entitled *On the Economy of Machinery and Manufactures*. Andrew Ure published *The Philosophy of Manufactures* in 1835.

**Charles Babbage**

An examination of the literature of management establishes the Babbage contribution as the first book written in the field of industrial management. Charles Babbage, who was a professor of mathematics, investigated the effects and advantages that arise from the use of tools and machines. He also was interested in tracing the causes and consequences of applying machinery to supersede the skill and power of the human arm. Babbage presented a study of the economy and efficiency derived from substituting mechanical power for manual labor with the consequent advantages of the division of labor, greater speed and power, and economies in time. He referred to Adam Smith as an influence on his thinking in connection with the principles of manufacturing.

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Babbage recognized the concept of the service objective with the following statement:

The first object of every person who attempts to make any article for consumption is, or ought to be, to produce it in perfect form; but in order to secure to himself the greatest and most permanent profit, he must endeavour, by whatever means in his power, to render the new luxury or want which he has created, cheap to those who consume it. The larger number of purchasers thus obtained will, in some measure, secure him from the caprices of fashion, whilst it furnishes a far greater amount of profit, although the contribution of each individual is diminished.7

He also discussed incentive payments, profit sharing, and the mental as well as the physical division of labor. He believed that competition resulting from machinery and the division of labor required each producer to make a constant effort to reduce costs. His suggestions for cost reduction were: (1) discovery of improved methods; (2) knowledge of the precise expense of every process; and (3) knowledge of which processes offer the greatest possibility of cost reduction through study. This concept was very similar to the approach used for scientific management almost a century later.

Babbage discussed advanced concepts of organization and organizational planning with his statement to the effect

... that the master manufacturer, by dividing the work to be executed into different processes, each requiring different degrees of skill or of force, can purchase exactly that precise quantity of both which is necessary for each process; whereas, if the whole work were executed by one workman, that person must possess sufficient skill to perform the most difficult, and sufficient strength to execute the most laborious, of the operations into which the art is divided.8

8 Ibid., pp. 175-76.
Although Babbage conceived and wrote about the separation of the planning from the execution of work and about the scientific approach to the methods of work, there seems to be no indication of his influence on the management thought of the pioneers in scientific management. The economic and industrial climate of his time was not favorable to the acceptance or the application of his concepts. He thought and wrote ahead of his time.

In the middle of the twentieth century, however, he began to be acclaimed as the patron saint of those interested in operations research. The following quotation from Herbert A. Simon and Allen Newell is indicative of his later recognition.

But for the patron saint of our profession\footnote{Herbert A. Simon and Allen Newell, "Heuristic Problem Solving: The Next Advance in Operations Research," \textit{Operations Research}, VI (January-February, 1958), p. 1.}, we can most appropriately look back a full half century before Taylor to the remarkable figure of Charles Babbage. Perhaps more than any man since Leonardo da Vinci he exemplified in his life and work the powerful ways in which fundamental science could contribute to practical affairs, and practical affairs to science.\footnote{9}

\textbf{Andrew Ure}

Andrew Ure, a physicist, wrote about the area of personnel management in his book \textit{The Philosophy of Manufactures}. He conceived of the factory system in the following conceptual framework. There were three organic systems or principles of action to be considered, the mechanical, the moral, and the commercial. These organic systems or principles were actions that led to the present-day concepts of service, social, and
profit objectives of industry. The mechanical, the moral, and the commercial principles of action were considered subservient to and in harmony with the interests of the operatives, the master, and the state. All three used the powers of labor, science, and capital. He stated that "when the whole are in harmony, they form a body qualified to discharge its manifold functions by an intrinsic self-governing agency, like those of organic life." This concept was similar to Taylor's belief in harmony rather than discord as a principle of scientific management.

Ure discussed incentive piece rates and combinations of masters and men. He had an interest in developing principles on which productive industry should be conducted by self-acting machines. Twentieth-century management scholars have not sufficiently recognized his early contributions to management thought.

Carl von Clausewitz

Prior to the time that Babbage and Ure were writing on the subject of management in relation to manufacturing, a Prussian general, Carl von Clausewitz derived some principles of management that could be applied to the conduct of war. He was interested in the proper employment of resources in the attainment of a military objective. While serving as an instructor to the Crown Prince of Prussia, he wrote a significant memorandum bearing on the principles of war. His outline of the basic principles of

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\(^{10}\) Ure, op. cit., p. 55.

\(^{11}\) Carl von Clausewitz, "The Most Important Principles for the Conduct of War" (1812, first published as an appendix to the third volume of Vom Kriege, 1832). It was reprinted as Carl von Clausewitz, Principles of War, Hans W. Gatzke, trans. (Harrisburg: Military Service Publishing Co., 1942).
tactics, or the art of defeating an opponent on the battlefield, and strategy, or the combination of individual engagements to attain the goal of a campaign, contributed to management thought for military purposes. Some of the principles of management that were later applied to business operations in the twentieth century were comparable to his principles of war, viz., the principle of the objective and the principle of the economy of force.

Pope Leo XIII

The new forces influencing the social and industrial climate were the subjects of some pronouncements by Pope Leo XIII in Rerum Novarum 12 entitled "Of the Condition of the Working Class." Rerum Novarum was an answer to Das Kapital by Karl Marx. The former was noted for its influence in bringing a new awareness of the labor problems of the time. It also represented an example of the influence of the church on social education.

Pope Leo XIII upheld the right of every man to hold private property. He commented that the primary motive for engaging in remunerative labor was to gain private property; this showed approval of the profit motive. He further commented that service to others should be the important objective after one's immediate needs for security and comfort have been met; this concept identified the social responsibility objective. Pope Leo XIII recognised that the principle of division of labor enabled each man to

choose his part in life according to his capacities. He believed that it was a mistaken notion that capital and labor were intended to live in mutual conflict. The concept of harmony and not discord is evident in such a belief. He argued that neither labor nor capital could prosper without the other, and stated that it was the moral duty of employers to pay fair wages, limit working hours, and not tax workers beyond their strength. Exploitation was condemned by both human and divine law. The concept of government control of business appeared in *Rerum Novarum*. It was pointed out that the well-being of the workers was morally imperative and that only through them could the state become prosperous. Therefore, the public authorities should safeguard their interests. Social legislation in later years followed the principle established in that concept.

Thus, the first contributions to management thought were from a mathematician, a physicist, a militarist, and a theologian. Engineers and industrialists did not study or write about management until almost the close of the nineteenth century.

**SOME SEEDS OF MANAGEMENT THOUGHT**

The technical achievements and the development of the factory system started a trend that changed the empirical and "rule of thumb" approach of typical owner-managers of industry. Problems developed that could not be solved without planning systematic relationships of work methods and effective organization. Improvements were begun by engineers and industrial managers in methods of work and wage payments.
The men who initiated the movement later named "scientific management" were engineers by profession. They were organized into several engineering societies. The civil engineers were organized in 1853, and the American Society of Civil Engineers was established in 1890. The American Institute of Mining Engineers was formed in 1872, the American Society of Mechanical Engineers in 1881, and the American Institute of Electrical Engineers in 1885. There were also several national railroad and electrical associations.  

The major contributions to management thought in the nineteenth century came from a group of engineers and shop managers who were members of the American Society of Mechanical Engineers. Their papers concerning management concepts were published in the Transactions of the Society. Their contributions to the scientific approach to management were in the following areas:

1. Methods of incentive wage payments to effect increased output and cooperation from workers. Profit sharing had been a subject of discussion prior to 1880; however, the problem of generating harmony between managers and workers was receiving more interest and study.  

2. Cost control techniques. Early emphasis was in the area of stores accounting.

3. A constant search and striving for technical improvements.

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13 Oberlin Smith, "Who is an Engineer?" Engineering Magazine, II (February, 1892), p. 681.

The desire of the mechanical engineers and the shop managers was to produce a greater output at lower cost through the control of waste and with increased efficiency.

**Henry R. Towne**

The genesis of the "scientific management movement" has been accredited to the address of Henry R. Towne, President of the Yale and Towne Manufacturing Company of Stamford, Connecticut, in 1886, before the American Society of Mechanical Engineers. In his paper entitled, "The Engineer as Economist," he stated that engineers should concern themselves not only with the technical aspects, but also the financial and profit-making phases of management. He commented that to be an economist, a man must effect economies. (A more detailed treatment of Henry R. Towne's contribution to management thought was given in Chapter I.)

**Captain Henry Metcalfe**

Captain Henry Metcalfe published in 1885 a book that discussed ordering and cost accounting methods in arsenal work. Although he was concerned mainly with the matter of costs, he introduced his book with a chapter on the art of administration. His comments dealt with the causes and effects of good administration. He advocated systems of accounting and routing. He also discussed the need for records to facilitate effective administration.

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Methods of Wage Payment

Henry R. Towne also provided a stimulus to improved methods of wage payment. He developed a form of profit sharing that differentiated the items affecting the costs of production over which the workers had some control. He sought to isolate the gains in efficiency that could be attributed to different departments and provide suitable rewards.17

F. A. Halsey outlined a method for wage payment in 1891. In an address before the American Society of Mechanical Engineers, he discussed the merits of day-work, piece-work, and profit-sharing plans. He advocated wage payment on the basis of hourly premium rates for time gained, this to be determined by the nature of the work. He tried to provide a basis upon which gains in efficiency could be measured and the gain distributed in part as a bonus to the individual worker.18

Frederick W. Taylor became interested in closing the gap between the actual and the potential output of the workers that he supervised at the Midvale Steel Company. He experimented with wage payments and developed the differential piece-rate system, which he explained in a paper before the American Society of Mechanical Engineers. Taylor's paper was reprinted in the *Engineering Magazine*; the editor of this magazine commented

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that it was "one of the most valuable contributions that have ever been given to technical literature." Taylor's paper was presented in 1895; he had been using his differential piece rate system since 1894. It consisted of the following elements:

1. An elementary rate-setting department in which the work was planned and divided into elements and a rate established for each element by time study methods.

2. The differential rate principle, which resulted in a low rate of pay for production below a predetermined standard or a much higher rate of pay if the standard was attained.

3. The payment of men rather than positions, according to the skill and energy used to perform the tasks set for them.

There has been some discussion as to whether this paper consisted of a presentation of the detailed methods of a piece-rate system or whether it contained the origin of Taylor's later ideas about management philosophy. The paper certainly provided a vehicle for some of Taylor's early concepts of management, and the seeds of later management thought were planted. By means of a specialized technique, Taylor was moving toward the fundamental basis of the managerial problem pertaining to the achievement of desired results through the intelligent use of human effort.

The interest of the engineers during the eighteen nineties encompassed more than the determination of standards of performance and wage payment systems. They were interested also in the investigation of detailed

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processes, the proper use of equipment, and improved methods. Taylor's "Notes on Belting" in 1894 was an indication of his broader interests.\textsuperscript{21}

One of the major outlets, in addition to Transactions, for the early contributions to management thought was the Engineering Magazine, established in April, 1891. Although the articles in the Engineering Magazine were devoted generally to economical methods of production, cost reduction, and mechanical improvements, there were some articles published that were of interest to general management. In 1894, an article appeared by W. H. Waksman entitled "The Management of Men in Mills and Factories."\textsuperscript{22} In 1896, Horace L. Arnold published "Modern Machine Shop Economies."\textsuperscript{23} In 1889, H. F. L. Orcutt wrote "Machine Shop Management in Europe and America."\textsuperscript{24}

In addition to articles on the technical principles of design and engineering, the literature began to contain contributions to management thought in the area of general management concepts. The seeds of management thought began to germinate during the last decade of the nineteenth century. By the start of the twentieth century, the economic and educational climates were prepared for the emergence of the concepts of the "scientific management movement."


CHAPTER III

EMERGENCE OF SCIENTIFIC MANAGEMENT (1900-1920)

Management thought underwent some revolutionary developments early in the twentieth century. The situation had been developing for several years in preparation for the differentiation of engineering as a function from management as a function. Growth in many areas necessitated new approaches and new concepts regarding the work of management. The extensive domestic market made possible the increase in size of business firms. Factories doubled and tripled in size, and large-scale industrial operations experienced problems in waste and inefficiency. As the rise of the corporation rapidly created a distinction between ownership and management, the work of the capitalist was separated from the work of the administrator. Many technological advances were in evidence, and the population of the nation was expanding rapidly. Management was challenged to keep pace with innovations and engineering developments.

ECONOMIC AND INDUSTRIAL CLIMATE

In 1900, the national population was almost 76 million people; there were approximately 27 million people in the work force. The average work week in industry was 61 hours. Both the population and the work force had been expanding rapidly. The growing population created an ever-increasing domestic market. Factories grew into large-scale enterprises to support the ever-increasing markets. The basic industries expanded, and the transportation and communication systems developed throughout the nation.
Seemingly, the situation was conducive to prosperity and plenty. The innovators, the inventors, and the engineers had made important contributions to the economy.

But, in spite of the many favorable factors in the situation, the economy suffered from low productivity and low wages. The per capita income was about $205 a year as measured in 1957 prices. Management had not developed sufficiently to utilize the fruits of technology for the proper benefits of society. Industrial operations, which were characterized by craft traditions of work, were crude and wasteful as compared with scientific methods of work. Little was known about the effects of fatigue, the sequence of work, and the tempo of work upon employees. Employees were placed in jobs for which they were poorly suited. Little was known about methods for determining the efficiency or standards of operations.

Thus, here was an opportunity to apply some of the known methods of science to the function of management to eliminate the inefficiency from human effort and thereby realize greater worker productivity. A small group of engineers began to inquire about the reasons for inefficiency in shop operations. They began a series of experiments with the hope of finding better methods of employing labor. The results of the experiments dealt with better machining of metals, enlightened understanding of the effects of fatigue on human work, and how to approach equitable wage systems. These experiments led to scientific methods for planning work and establishing control procedures to maintain the standards. Better methods were found for establishing the relationship among work, employees, and the work environment. From the basic experiments in operative methods, a system of management thought began to develop.
According to Horace B. Drury, "The roots of scientific management are to be found in the life and thought of the late Frederick W. Taylor." Although Taylor has always been identified with the origin of scientific management, consideration should be given to the personal influence that some progressive manufacturing executives may have had on his management thinking. Henry Towne, James Mapes Dodge, and William Sellers had recognized the importance of finding more logical and rational approaches to the industrial problems of the time. It is possible also that the ideas of some of Taylor's associates and contemporaries influenced him.

For the purpose of illustrating the emergence of scientific management as the foundation for the development of management thought in the twentieth century, the contributions of the following pioneers in the field are presented: Frederick W. Taylor, Harrington Emerson, A. Hamilton Church, Frank B. Gilbreth, Lillian Gilbreth, Henri Fayol, and Henry L. Gantt.

Scientific management had its origin in the minds of men who were engaged in industrial enterprises. The academic men in the universities followed the creative thinking of practicing engineers and executives. Although the college professors were quick to recognize the importance of the developments in management thought, they wrote descriptive and speculative contributions to the field after the basic ideas had emerged.

The contributions of the pioneers in scientific management have been studied, quoted, discussed, and reworked many times in the literature of management. Their concepts and contributions are better known than those of the later authorities. Consequently, only a brief digest of their publications will be used in this study to establish the basis for the origin of management thought.

**Frederick W. Taylor**

Frederick W. Taylor's major contributions were "A Piece-Rate System" in 1895, *Shop Management* in 1903, and *The Principles of Scientific Management* in 1911. Extracts from his testimony at the hearings before the special committee of the House of Representatives in 1912 also provide an insight into his concepts of scientific management. The key points in Taylor's management philosophy from his publications are given in sequence.

Taylor did not attempt a statement of principles in his paper, "A Piece-Rate System." He explained his differential piece-rate scheme, and he compared it with ordinary piece rates, gain-sharing, and profit-sharing schemes. He placed emphasis on the necessity for research and the standardization of conditions in the development of piece rates. In summary, the conclusions drawn in Taylor's paper were: (1) wages should be paid to men and not to positions; (2) rate-fixing should be based on accurate knowledge and not by guessing; (3) rates based on exact observation are more uniform and just; (4) with rates properly established, products are

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produced cheaper and workmen can earn higher wages that are usually paid; and (5) wages based on exact knowledge develop better workmen, remove motives for soldiering, permit the earning of higher wages, and create the basis for cooperation between management and men because of common interests.

Later management thought differed from Taylor's concept of paying wages to men and not to positions. Subsequent practices in job analysis and job evaluation advocated pricing the value of the job. Taylor, however, did have in mind some of the factors used in job analysis and job evaluation. He stated:

The men are paid according to the position which they fill, and not according to their individual character, energy, skill, and reliability. The effect of this system is distinctly demoralizing and leveling; even the ambitious men soon conclude that since there is no profit to them in working hard, the best thing for them to do is to work just as little as they can and still keep their position. And under these conditions the inevitable tendency is to drag them all down even below the level of the medium. 3

The criterion for both Taylor's concept and the fundamental base of job evaluation lies in the setting of standards of performance for the job. The acceptance into management thinking of the basic concepts of piece-rate systems, or Henry Towne's gain-sharing plan, or Frederick A. Halsey's premium plan provided the means for a more equitable and fair payment of wages. This in turn generated higher wages and increased worker productivity. Such plans helped to eliminate some of the inefficiency from human effort. All of the wage plans mentioned were based on standards

3Ibid., p. 861.
obtained from motion and time studies. Therefore, the first step in scientific management, as conceived by Taylor, involved the determination of what constituted a day's work and the differential piece rate for worker incentive.

*Shop Management*[^4] was written by Taylor for the purpose of advocating that the best management rested on a foundation of high wages and low costs. In order to achieve higher wages and low costs, Taylor stated that the aims of each business establishment should be that: (1) each workman should be given, insofar as possible, the highest grade of work for which he is qualified by ability and strength; (2) each workman should be called upon to turn out the maximum amount of work which a first-rate man of his class can do; and (3) each workman, when he works at the best pace of a first-class man, should be paid 30 per cent to 100 per cent, according to the nature of the work which he does, beyond the average of his class.[^5]

Taylor reported that the chief causes of loss to employers and men were: (1) the profound ignorance of employers and their foremen relative to the time in which various kinds of work should be done; (2) the indifference of employers and their ignorance as to the proper system of management to adopt and the method of applying it, and also their indifference as to the individual character, worth, and welfare of their men. These causes of

[^4]: Frederick W. Taylor, *Shop Management* (New York: Harper & Brothers, 1919). It was first published in 1903 under the auspices of the American Society of Mechanical Engineers. Taylor had read it at a meeting of that society in June, 1903 at Saratoga Springs, New York.

[^5]: Ibid., pp. 28-29.
loss to employers and workers resulted in the natural soldiering and the systematic soldiering of employees.

Taylor disliked the Towne gain-sharing plan and the Halsey premium plan for wage payment because they used the quickest time in which a job was done and fixed that time as the standard. He stated that these plans shared with ordinary piece-rate plans the greatest evil of the latter. He thought that they were based on deceit and injustice. He held to his convictions concerning the merits of his differential piece-rate system as the best means to realize high pay and low costs.⁶

An interesting prediction of Taylor's was his statement that management would become an art and that it would be studied as an art. He believed that management would eventually rest upon well-recognized, clearly defined, and fixed principles. He defined the art of management as "knowing exactly what you want men to do, and then seeing that they do it in the best and cheapest way."⁷ The practice of management as an art with the object of uniting high wages with low costs rested upon the success of the application of the following principles: (1) a large daily task for each workman; (2) standard conditions of work with the necessary appliances to enable workman to accomplish their tasks with certainty; (3) high pay for success in accomplishing the task; and (4) low pay for failure to accomplish the task. A fifth principle was added for firms in advanced stages of organization; it was that the task should be made so

⁶Taylor, Shop Management, pp. 40-41.
⁷Ibid., p. 21.
difficult that it could be accomplished only by a first-class man. Taylor believed that these principles could be best applied through task work with either a bonus or a differential piece-rate system. (The task work with a bonus wage plan was invented by H. L. Gantt, one of his associates.)

Because of the difficulty in obtaining men who have all of the attributes desired, Taylor recommended the separation of all planning and clerical work from operative work. This necessitated the substitution of the functional type of organization for the military type. He is quoted as follows:

(a) As far as possible the workmen, as well as the gang bosses and foremen, should be entirely relieved of the work of planning and of all work which is more or less clerical in nature.

(b) Throughout the whole field of management the military type of organization should be abandoned, and what may be called the 'functional type' substituted in its place. 'Functional management' consists in so dividing the work of management that each man from the assistant superintendent down shall have as few functions as possible to perform. If practicable the work of each man in management should be confined to the performance of a single leading function.\(^8\)

These recommendations influenced both contemporary and later management thought. The divisionalized organizations that became popular forty years later adhered to those basic concepts and recommendations. Although the divisionalized organizations differed in several respects, they contained the concepts of functional authority to better utilize executive talent.

Taylor's functional-type organization was unique. There were four types of functional executive bosses engaged in the active or operating

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work in the shop: the gang bosses, the speed bosses, the inspectors, and the repair bosses. The four functional bosses who were engaged in the planning room were the order-of-work clerk, the instruction card clerk, the time-and-cost clerk, and the shop disciplinarian. Thus the work that, under the military type of organization, was done by a single gang boss became subdivided among eight men. Although this concept violated the principle of single accountability, it proved to be successful for Taylor and for others much later who used the functional authority concept in the divisionalized organizations of very large corporations. Its use necessitated management training programs to insure proper executive understanding of its nature and benefits.

The problems of dealing with union men and the proper methods of discipline were recognized by Taylor. In order to safeguard his principles and practices for attaining higher pay with low costs, he devoted considerable attention to maintaining satisfactory working relationships between the managers and the workers.

The basic management concepts in Shop Management were the techniques for stimulating the initiative of workers, the techniques for improving methods of work, and functional type of organization. Devices were described for determining maximum output and stimulating men to work to their full capacity. The differential piece rate was an important technique for the control of labor costs. Techniques for improving methods of work were described throughout the book; examples of such techniques were the standardization of tools and equipment, instruction cards, routing and scheduling, motion study, and the intelligent selection of workmen. In
his Shop Management, Taylor developed his concepts beyond task setting and concerned himself with methods and techniques to improve work efficiency. Furthermore, the concept of the functional type of organization was a major contribution to management thought. Not only was there a differentiation between the planning and operating functions, but also a specialization of the managerial abilities of the planning and directing executives. Shop Management served to explain the fundamentals of scientific management to the general public. Prior to its publication, only a few practicing engineers and business executives had been thinking along such logical and scientific lines.

The Principles of Scientific Management was written by Taylor for the following purposes: (1) to point out, through illustrations, the great loss that the country was suffering through inefficiency in most daily acts; (2) to try to convince the readers that the remedy for the inefficiency lay in systematic management, rather than in searching for some unusual or extraordinary man; and (3) to prove that management was a true science, founded upon clearly defined laws, rules, and principles. In addition, he proposed to show that the fundamental principles of scientific management were applicable to all kinds of human activities, from the simplest individual acts to the work of the great corporations, which call for the most elaborate cooperation.\(^9\)

In establishing the fundamentals of scientific management, Taylor started with the statement that "The principal object of management should be to secure maximum prosperity for the employer, coupled with the maximum prosperity for each employee."\(^{10}\) He laid the foundation for the basic concept that the true interests of the employer and the employee are the same. This fundamental concept in scientific management illustrates the belief that it is possible to give the worker what he most wants—high wages—and the employer what he wants—a low labor cost—for his manufactures. This contribution to management thought was reworked and popularized years later by James Lincoln through his concept of "intelligent selfishness." It expressed the principle of mutuality of interests of employers and employees in a common business purpose.

Taylor, in his second book, continued to deplore the soldiering of workers. His principles and philosophy of scientific management aimed at the mutual prosperity of management and workers. This could be accomplished by the training and development of each individual so that all would operate with maximum economy and effectiveness insofar as natural abilities permitted. Management development programs in the universities and companies forty years later were initiated to apply this same concept to executive training activities.

In the process of explaining scientific management, Taylor discussed answers to three pertinent questions: (1) Wherein do the principles of scientific management differ essentially from those of ordinary management?

\(^{10}\)Ibid., p. 9.
(2) Can better results be attained under scientific management than under other types? and (3) Is not the most important problem getting the right man at the head of the company? The answers to the questions involved the relationship of initiative and incentive to management. He compared management of initiative and incentive with scientific management or task management. The basic concept involved the means of stimulating the initiative of workers through special incentives. This idea was somewhat similar to later management thought, which included motivating as one of the functions in the management process.

The new duties for management as conceived by Taylor were: (1) to develop a science for each element of a man's work, which replaces the old rule-of-thumb method; (2) to scientifically select and then train, teach, and develop the workman, whereas in the past he chose his own work and trained himself as best he could; (3) to heartily cooperate with the man so as to insure that all is done in accordance with the principles of the science which has been developed; and (4) to understand that there is an almost equal division of work and the responsibility between the management and the workmen. It was the initiative of the workmen combined with the new duties discharged by the management that made scientific management more efficient than under prior management practices. Under scientific management concepts, fully one-half of the problem for securing desired results rested with the management. This concept of a division of work between management and operative workers

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facilitated management thought toward a distinct and identifiable function of management as a process. If management was to be responsible for results along with the operative employees, then the work of management should be known and understood.

Since Taylor considered the task idea the most prominent single element in the practice of scientific management, he illustrated the benefits to be derived from the planning of work in advance. Illustrations of the advantages of scientific management were made for the experiment in handling pig iron, the experiment in the science of shoveling, the experiment in the inspection of ball bearings, the experiment in cutting metals, and the Gilbreth experiment in bricklaying. Taylor's use of illustrations enabled him to communicate his concepts and management philosophy to others in an interesting and vivid manner. He first illustrated the principles by example. He then advanced the underlying philosophy or the principles that were derived from the examples. With reference to the classic experiments cited previously, Taylor stated that the successful results hinged mainly upon the substitution of a science for the individual judgment of the workmen, the scientific selection and development of the workmen, the training and development of the workmen, and the intimate cooperation of the management with the workmen. These statements comprised Taylor's four great underlying principles of management; combined, they constituted the philosophy of scientific management.

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13 The principles were restated by Taylor as follows: First, the development of a true science. Second, the scientific selection of workmen. Third, his scientific education and development. Fourth, intimate friendly cooperation between management and the men. The Principles of Scientific Management, p. 130.
Concerning the development of scientific management, Taylor warned against mistaking the mechanism of management for its essence or philosophy. He knew about the possibilities of scientific management's being confused with techniques or mechanisms for operative procedures. Since men had searched for the philosopher's touchstone without success, it was probable that men would search also for mechanisms or techniques in the hope of achieving desired results the easy way. Taylor itemized the elements or details of the mechanism of management and stated that their uses could be disastrous unless accompanied by the true philosophy of management. He stated that the really great problem involved in a change to scientific management consisted of a complete revolution in the mental attitudes and habits of all management as well as the workmen.

Thus, scientific management emerged through the development of management thought as an intellectual process that could be studied, taught, learned, and practiced. Scientific management was summarized as: (1) science, not rule-of-thumb; (2) harmony, not discord; (3) cooperation, not individualism; (4) maximum output, not restricted output; (5) the development of each man to his greatest efficiency and prosperity. Scientific management emerged as the means for greater productivity, greater purchasing power, and a higher standard of living. Management thought continued to be developed for similar goals.

Although the term "scientific management" has been generally applied to the body of principles and the philosophy pertaining to management that

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emerged from Taylor's experiments, work, and writings, he did not originate the term. The management practices that the engineers introduced in the first ten years of the twentieth century were called many names, such as efficiency engineering, Taylorism, rationalism, and science of management. It is reported that the term "scientific management" originated at a meeting of engineers at the home of H. L. Gantt in 1910. The meeting had been called by Louis D. Brandeis, who was an attorney for the shippers in the Eastern Rate Case hearings. Taylor was not present.

The publicity from the Eastern Rate Case hearings stimulated interest in general about the nature and content of scientific management. In the hearings before the special committee of the House of Representatives in 1912, Taylor gave the following explanation of the meaning of scientific management.

Scientific management is not any efficiency device, not a device of any kind for securing efficiency; nor is it any bunch or group of efficiency devices. It is not a new system of figuring costs; it is not a new scheme of paying men; it is not a piece-work system; it is not a bonus system; it is not a premium system; it is no scheme for paying men; it is not holding a stop watch on a man and writing things down about him; it is not time study; it is not motion study nor an analysis of the movement of men; it is not the printing and ruling and unloading of a ton or two of blanks on a set of men and saying, "Here's your system; go use it." It is not divided foremanship or functional foremanship, it is not any of the devices which the average man calls to mind when scientific management is spoken of. The average man thinks of one or more of these things when he hears the words "scientific management" mentioned, but scientific management is not any of these devices. I am not sneering at cost-keeping systems, at time study, at functional foremanship, nor at any new and improved scheme of paying men, nor at any efficiency devices, if they are really devices that make for efficiency. I believe in them; but what I am emphasizing is that these devices in whole or in part are not scientific management; they are useful adjuncts to scientific management, so are they also useful adjuncts of other systems of management.
Now, in its essence, scientific management involves a complete mental revolution on the part of the workingman engaged in any particular establishment or industry—a complete mental revolution on the part of these men as to their duties toward their work, toward their fellow men, and toward their employers. And it involves the equally complete mental revolution on the part of those on the management's side—the foreman, the superintendent, the owner of the business, the board of directors—a complete mental revolution on their part as to their duties toward their fellow workers in the management, toward their workmen, and toward all of their daily problems. And without this complete mental revolution on both sides scientific management does not exist.

The substitution of this new outlook—this new viewpoint—is of the very essence of scientific management, and scientific management exists nowhere until after this has become the central idea of both sides; until this new idea of cooperation and peace has been substituted for the old idea of discord and war.\(^{15}\)

The developments in management thought contributed by the pioneers in management philosophy came into prominence with the hearings before the Interstate Commerce Commission in the winter of 1910-11. Scientific management was analysed and reasons were found by organized labor for opposition. The opposition subsided during World War I when the principles of scientific management were put to good use in production operations. Experience and observation of the results realized from scientific management served to diminish still further the opposition of organized labor.

**Harrington Emerson**

Harrington Emerson contributed two books to the literature of management. They were *Efficiency as a Basis for Operation and Wages*\(^{16}\) in 1911 and *The Twelve Principles of Efficiency* in 1913. Although Emerson was a

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\(^{15}\) Reprinted in *Bulletin of the Taylor Society*, X (June-August, 1926), pp. 102-104.

contemporary of Taylor and his associates, he worked independently and
made his own contributions to the field of management thought. His
management thought was oriented around the concept of efficiency, and he
used the term efficiency instead of management. His best-known work was
The Twelve Principles of Efficiency. Emerson stated that the purpose
and the justification of his book was:

. . . to forward the new morality, to extend the dominion of man
over uncarnate energy and its use, to substitute highly
paid thinkers and supervisors for devitalized toilers, to help
each individual, each corporation, each government to meet its
part of the obligation, above all to inspire those executives
on whose skill all progress and all wise performance depends

His purpose was to be realized through the proper use of his principles
of efficiency in a proper organizational setting. He stressed the
importance of an industrial system for the creation of wealth. His
principles of efficiency were aimed at waste elimination in the process of
creating wealth; for him, the prime instruments for efficiency were not
men, materials, money, machines, or methods, but theories of organization
and principles. Many historical examples were used to illustrate his
beliefs and point of view.

Emerson believed the line and staff form of organization structure
to be the most efficient type of organization. He stated that the line
and staff must replace the straight line organization. He discussed the
idea that each higher grade in the organization should exist for the

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18 *Id.*, p. *xii.*
benefit of what exists below it. He believed that the employer's sole function was to make effective the totally different function of the employee. For emphasis he stated that "the industrial book-worm disease is defective organization."\textsuperscript{19}

The major portion of Emerson's book was devoted to a description and illustration of his principles of efficiency, which were:

1. A clearly defined ideal
2. Common sense
3. Competent counsel
4. Discipline
5. The fair deal
6. Reliable, immediate, adequate, and permanent records
7. Dispatching
8. Standards and schedules
9. Standardised conditions
10. Standardised operations
11. Written standard-practice instructions
12. Efficiency reward

Emerson did not put his faith in systems or mechanisms. He believed in basic principles and a logical approach to the mission of management. He gave examples of how efficiency principles could be applied to the measurement and elimination of wastes.

Emerson made a contribution to the foundations for management thought and the establishment of scientific management even though he did not use the term. It is significant that he developed a system of management thought that gave a logical approach to the performance of the managerial function in industry. His twelve principles of efficiency provided further evidence that a management function can be identified, described, and differentiated from operative activities, systems, or techniques.

\textsuperscript{19}Emerson, \textit{The Twelve Principles of Efficiency}, p. 29.
Emerson believed that any group of individuals, in a co-ordinated effort and brought together in a proper organizational structure, was capable of great productivity when led by wise leadership and guided by moral ideals and principles of efficiency. He discussed the importance of leadership and the leader's responsibility for harmonizing all activities to generate all forces in the same direction.

Some of Emerson's principles of efficiency were concerned with altruistic relationships between employer and employee. Others were concerned with methods of work. His altruistic principles dealt with ideals, common sense, competent counsel, discipline, and the fair deal. Ideals were visualized as lofty goals. He held that every principle of efficiency was based upon ideals of benefiting humanity and not selfish gain. Employers were advised to define ideals and post them for the information of employees.

Common sense required that every problem be viewed from a lofty instead of a near view and without prejudice and ignorance.

Competent counsel was not to be sought in one man. Organizations were advised to seek counsel from several sources such as engineers, chemists, accountants, and psychologists. Staff and consulting services were advocated to advise on particular problems.

 Discipline was realized from the spirit of the organization, and was best infused in employees by examples set by managers.

The principles of the fair deal rested upon the qualities of sympathy, imagination, and a sense of justice in the employer.
Emerson's altruistic principles were very moral and philosophical. They served to influence the mental attitudes of employers toward a greater understanding of the human element in organizations. The concept of providing the means for listening to the recommendations of employees to ascertain their needs and wishes was injected into management thinking. Emerson combined the efficiency principles concerning the improvement of methods with the efficiency principles dealing with a humane mental attitude in employers. In a sense, some Christian concepts of religion were mingled with scientific management concepts.

A. Hamilton Church

A. Hamilton Church hoped to help create a true science of management by stating some fundamental facts and some regulative principles. He was interested in ascertaining the fundamental facts of production from the viewpoint of management and not from the viewpoint of costs. Consequently, his concepts of management pertain primarily to the area of production. Church commented on the works of Taylor and Emerson. He gave credit to Taylor for his influence in elevating the function of management to a stage where things could be reasoned about instead of guessed at. Emerson was credited with emphasizing the human element in management and the mental qualifications of management essential for efficiency.

Church, at the time of his writing in 1914, believed that no new developments in scientific management had occurred during the ten years that followed the introduction of Taylor's Shop Management into the management literature. He was of the opinion that the art of management
had arrived at a stage of development that permitted a study of its fundamental facts and underlying principles. Consequently, he advanced the idea that management could be based on the existence of specific organic functions, with each organic function being devoted to a special purpose. His book, *The Science and Practice of Management*\(^{20}\) expounded his basic idea.

Church believed that there were two elements present in any industrial undertaking. One was the determinative element, which settled the manufacturing and the distributive policy of a business. These policies determined what product would be made and where and by what means it would be sold. The second was the administrative element, which took the policies of production and distribution and gave them practical expression in buying, making, and selling.

Management or administration (eliminating the determinative element) was considered to be an organic affair.\(^{21}\) A major portion of Church's discussion of management deals with its organic functions.

The problem of management was stated to be the practical application of two great intellectual processes, viz., analysis and synthesis. Analysis was used to distinguish things, eliminate the unessential, and provide accurate knowledge. Synthesis combined functions to produce distinct and useful results. The art of managing an industrial plant rested on the proper use of analysis and synthesis. Church gave an analysis of the

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different activities involved in manufacturing and then made a synthesis of manufacturing organic functions. His five organic functions were:
(1) design, (2) equipment, (3) control, (4) comparison, and (5) operation. He wrote that "no form of activity exists in a manufacturing plant for the purposes of production that does not come under one or the other of these functional divisions."22

Church held that every administrative act arises from an aim or desire to do something. The aims in manufacturing were realized from the performance of the following organic functions:

1. Design, which originates
2. Equipment, which provides physical conditions
3. Control, which specifies duties, and which orders
4. Comparison, which measures, records, and compares
5. Operation, which makes23

The above listing was not presented by Church for purposes of classification. He contended that these functions were essential to establish an efficient organization if his analysis was correct. He stated that they form natural lines of organization to which all manufacturing organizations must conform.

Church explained that his five organic functions represented different varieties of effort; effort was applied in five different ways to achieve five different kinds of results. He conceived of effort as "man trying to do something," and the effort could be mental or physical. Since men

22 Church, op. cit., p. 29.
23 Ibid., p. 37.
or groups of men strived to do different kinds of things, some regulative principles of effort were found to be important aids to practical administration. A full statement of the laws of effort that Church formulated follows:

1. Experience must be systematically accumulated, standardized, and applied.

2. Effort must be economically regulated:
   2a. It must be Divided.
   2b. It must be Co-ordinated.
   2c. It must be Conserved.
   2d. It must be Remunerated.

3. Personal effectiveness must be promoted:
   3a. Good physical conditions and environment must be maintained.
   3b. The vocation, task, or duty should be analyzed to determine the special human faculty concerned.
   3c. Tests should be applied to determine in what degree candidates possess special faculty.
   3d. Habit should be formed on standardized bases, old or new.
   3e. Esprit de corps must be fostered.
   3f. Incentive must be proportioned to effort expected.  

Church made some interesting observations about planning. He defined it as the exercise of foresight, which consisted in adjusting the relations of things before they happen. He believed that every business step entailed planning in some degree. He argued for the simplicity of plans and warned

24 Church, op. cit., p. 111.
that planning systems should be staffs and not crutches. His description of planning showed more analysis and consideration of this subject than that of most of his contemporaries.

Church contributed to management thought the following concepts:

(1) The determinative element of management was separate from the administrative element. Creative planning and policy formation were distinguished from operations in manufacturing; (2) Management was considered to be an intellectual activity that used the instruments of analysis and synthesis; (3) Manufacturing activities could be analyzed and synthesized into definite organic functions; (4) Human effort was subject to some regulative principles, which were formulated as laws of effort. However, Church's treatment of management was restricted to manufacturing. His "organic" functions were staff and not line functions; furthermore, they dealt with the management function of control rather than technical staff planning with the exception of some phases of "design" and "operation." These limitations should be kept in mind when using his concepts.

Frank B. Gilbreth and Lillian M. Gilbreth

Frank B. Gilbreth was interested in the most economical use of effort, the conservation and fostering of the human element, and motion as the better part of method. His outstanding contributions to management were in the area of motion study. He devised a system of dividing work into its most elementary subdivisions, which were called "therbligs." Gilbreth pioneered in the study of fundamental units of motion by using the laboratory method. He made his test and experiments in such a manner as to evolve standard methods for doing work. Work units were measured separately and

than in relation to one another. Gilbreth's methods for studying work laid 
the foundation for the later "method of synthetic standards." His studies 
resulted in his design of devices for determining the best elements of a 
motion cycle. He developed the cyclograph, micro-motion studies that 
necessitated a special chronometer, and sets of standardization data. Like 
the other pioneers in scientific management, he was devoted to building 
up methods of least waste.

Lillian M. Gilbreth, his wife, was a psychologist who pioneered with 
him in the time and motion study of fatigue and the psychology of manage­
ment. Her interests were in the areas of fatigue and monotony, but she 
was also interested in determining the best available methods of performing 
the functions of industry, which she classified as management, organisa­
tion, and operations.

Frank Gilbreth's contributions to management were more in the nature 
of a general approach to the scientific "method" for the analysis of work. 
He experimented in "methods" to determine the best method of performance. 
However, he did not regard any best method as rigid or inflexible. Emphasis 
was on the method and not on the procedure derived from it and his concept 
of planning was oriented around the planning of methods for motion relation­
ships. He did not delve into organization and control; he limited his 
work to system and motion study.

Gilbreth's first publications were in the area of system, viz., 
Field System, Concrete System and Bricklaying System. 26 These 

26 Frank B. Gilbreth, Concrete System (New York: The Engineering 

27 Frank B. Gilbreth, Bricklaying System (New York: The Myron C. 
publications consisted mainly of statements of general rules and methods of operation.

In 1914, Gilbreth published the *Primer of Scientific Management*. His contribution to scientific management was a simple explanation of scientific management. The text material was presented in a series of questions and answers about scientific management on such subjects as time study, motion study, task, functional foremen, standards, and wage payment plans.

In 1911, Gilbreth published *Motion Study* and in 1917, *Applied Motion Study* with his wife as coauthor. The well-known three-position plan of promotion was described in *Applied Motion Study*. It involved the concept that each man occupied three positions. The first position was the one the man last occupied in the organization, the second position was the one in which the man was working, and the third position was the one the man would next occupy. This concept put a man in the roles of teacher, worker, and learner at the same time. Personnel management textbooks made wide use of this concept in later years.

Lillian M. Gilbreth published *The Psychology of Management* in 1914. It was one of the first contributions of its kind to the literature.

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of management. It treated the psychological aspects of scientific management under the divisions of: (1) individuality; (2) functionalization; (3) measurement; (4) analysis and synthesis; (5) standardization; (6) records and programmes; (7) teaching; (8) incentives; and (9) welfare. Her conclusions were that scientific management would aid the cause of industrial peace and serve to educate workers so that they would be better fitted to work and live.

The Gilbrethes recognized the close relationship of management to the social sciences and advocated cross-fertilization of management ideas with those from economists, psychologists, sociologists, and psychiatrists. 32

Henri Fayol

*Administration Industrielle et Generale* 33 was published by Henri Fayol in 1916; the first English edition appeared in 1929. He intended to prepare a book in four parts as follows: Part I. Necessity and possibility of teaching management; Part II. Principles and elements of management; Part III. Personal observations and experience; Part IV. Lessons of war. Parts III and IV were never published.

Fayol and Taylor are credited with making the greatest contributions to the development of management as a science. Whereas Taylor approached

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32 The contributions of Frank B. and Lillian Gilbreth to management were extracted from their reprinted publications in the following source book. William R. Sprigol and Clark E. Myers, (eds.), *The Writings of the Gilbrethes* (Homewood, Ill.: Richard D. Irwin, Inc., 1953).

33 The appraisal of Fayol's contribution to management in this study was made from the following source. Henri Fayol, *General and Industrial Management* (translated from the French edition by Constance Storrs; London: Pitman Publishing Corporation, 1949).
the study of management from the operative level, Fayol approached the subject from the viewpoint of general management. He wrote from a position as managing director of a large organization, while Taylor wrote from the viewpoint of a shop foreman. Fayol has been highly respected and admired by academic personnel because he was the first authority in the field to consider the teaching of management important.

In defining management, Fayol wrote that all activities in industrial undertakings can be divided into six groups. The six groups are as follows:

1. Technical activities (production, manufacture, adaptation)
2. Commercial activities (buying, selling, exchange)
3. Financial activities (search for and optimum use of capital)
4. Security activities (protection of property and persons)
5. Accounting activities (stocktaking, balance sheet, costs, statistics)
6. Managerial activities (planning, organizing, command, coordination, control)

According to Fayol, these six groups of activities or essential functions are always present in any undertaking. He commented that the first five were well known but that the sixth, the managerial group, required explanation. His comment was understandable because he was the first authority to identify and describe the functions of management in the nature of a process. His concept was very advanced but logical. Many later management authorities followed his reasoning and developed similar functions of management as a part of management philosophies. Even today, many company and university management development programs use his concept.

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34 Fayol, op. cit., p. 3.
of management functions as a basis for managerial training. Fayol has been an influence on management thought since the time of his contribution in 1916.

Fayol declared that there was a difference in the abilities required of personnel for various duties. He summarised with the following statement: "In businesses of all kinds the essential ability of the lower ranks is the technical ability characteristic of the business and the essential ability of the higher ranks is managerial ability." He made a definite distinction between the operating activities (technical, commercial, financial, security, accounting) and managerial activities.

Planning to Fayol meant looking ahead, and it included forecasting. It consisted of studying the future and arranging a plan of operations. It visualised the desired end, the line of action to be followed, the stages to be followed in sequence, and the methods that would be used.

Organising provided a business with everything useful for proper functioning such as tools, capital, personnel, raw materials, and equipment. Organising was divided into the human organisation and the material organisation. Provision for the material resources enabled the personnel to perform the six essential activities and carry out the work of the business. Fayol commented that Taylor's concept of functional foremanship negated the principle of unity of command. He considered it unsound and dangerous. Fayol's examples of organization favored the line type. However, he commented favorably on staff assistance to managers.

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Fayol, op. cit., p. 8.
Command encompassed the art of leadership and had the mission of putting the organization into motion after it had been formed. Its purpose was to realize the optimum productivity of all employees in the interests of the firm.

Co-ordination served to facilitate the working and success of the business by harmonising all of the activities. Liaison officers and conferences were considered helpful to co-ordination. Although Fayol did not use the term, communication also describes the activities he discussed in co-ordination.

Control for Fayol consisted of "verifying whether everything occurs in conformity with the plan adopted, the instructions issued and principles established." It affected everything, including people, actions, and things. Control assumed a plan, and Fayol used control in relation to a plan. Some American authorities used control in relation to standards.

In order to guide the managerial function, Fayol formulated some general principles of management. They are listed and explained as follows:

1. Division of work. This led to specialisation and delegation of authority.
2. Authority. This was the right to command and to make oneself obeyed.
3. Discipline. This developed obedience, diligence, energy, and respect.
4. Unity of Command. This provided for orders from only one superior.
5. Unity of Management. This consisted of one manager and one plan for all operations with the same objective.

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Fayol, op. cit., p. 107.
6. Subordination of individual interests to the general interest. This provided for the reconciling of conflicting interests.
7. Remuneration. The reward for work done should be fair and satisfactory.
8. Centralization. This involved finding the proper degree of centralization for each concern.
9. Scalar Chain. This referred to the line of authority by all communications to and from the highest authority.
10. Order. This required a place for everything and everything in its place.
11. Equity. This dealt with uniform treatment and fairness for all.
12. Stability of tenure for personnel. This provided for success by tenure of managerial personnel.
13. Initiative. This meant the freedom and power to conceive and execute activities.
14. Esprit de Corps. This led to organizational strength through harmony and unity.

Henri Fayol, in his attempt to provide a discipline for the teaching of management, developed a logical management philosophy. He was the first authority to relate the functions of a business to the functions of management; and then to provide principles for the guidance of the management function in the conduct of business activities. His concepts of the elements of management (planning, organizing, command, co-ordination, and control) have had great influence on the development of management thought. He made his contributions to management thought independently in France at about the same time that scientific management was developing in the United States.

Henry L. Gantt

The major contributions of Henry L. Gantt to management thought were the principle of the Gantt Chart, the task and bonus plan, and some concepts of industrial leadership, including the psychological aspects of employee relations. Gantt was an associate of Taylor who
had an influence on him. Gantt, however, made his own independent contributions to the literature of management; his best known books were *Work, Wages, and Profits* and *Industrial Leadership*.

Of the pioneers in management thought, he was one of the most discerning about the importance of leadership in relation to success in business. He emphasized industrial leadership over all other elements that make for industrial progress. Gantt stated that the most important principle in promoting the success of an organization was: "The authority to issue an order involves the responsibility to see that it is properly executed." His system of management was based on that principle for the reason that a man can accept the responsibility for proper performance only when he knows how to perform the task himself and can teach someone else to do it. He also believed that a wise policy contributed more to the success of a business than good management, a large plant, or perfect equipment.

An intimate knowledge of the workman was advocated by Gantt. He opposed the autocratic manner of industrialists and predicted a more democratic relationship between employers and employees. He commented that the general practice had been to drive men, but that driving by force would be replaced by leading and teaching workers. He discussed

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39 Ibid., p. 1.

40 Ibid., p. 8.
the design of proper industrial methods and stated that managers should consider the fact that "the men produced by them are far more important to the life and prosperity of a nation than the wealth and luxury by which we set so much store." Gantt's management concepts were characterised by his recognition of the importance of the human factor in management and the belief that men were influenced by certain incentives in addition to financial ones. He believed that workmen could be trained in proper work habits so that they would find enjoyment in their work as well as a livelihood.

The key to the concept of employees' finding pleasure in their work was the idea of working for an objective or the accomplishment of a task. He stated that "the idea of setting for each worker a task with a bonus for its accomplishment seems, then, to be in accord with human nature, and hence the proper foundation for a system of management." The problem involved was to determine the method for setting this proper task and finding the suitable reward for its accomplishment. Gantt invented the task and bonus plan; it was his opinion that a task system made a man interested in his work and had beneficial effects far out of proportion to the financial incentives. He argued that the development of a task system on the basis of democracy would yield as good or better results than the autocratic system used in industry. His ideal community was the one in which a man would do the work for which he was best fitted and then receive a commensurate reward.

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41 Gantt, Industrial Leadership, p. 37.
42 Ibid., p. 50.
The foundation of Gantt's concept of task work was the substitution of fact for opinion. He stated that "the attempt to substitute scientific knowledge for opinion in the administration of human affairs is what is known as 'scientific management' which might better be called the 'scientific method of management.'" Gantt claimed to be interested more in proper methods than in results because proper results would follow proper methods.

In Gantt's opinion, the great problem of industrial leadership was to solve the labor problem. He said that the financier had assumed that task in the past, but that he had failed with deplorable conditions as a result. To solve the labor problem, Gantt said "you must study all the elements entering into it, of which the human element is the most important." He believed that it was a fallacy to consider it necessary to have low wages in order to have low costs. To him, successful manufacturers were successful because they hired good men at high wages; this was more influential in producing low costs than any other device.

Gantt concluded that proper work habits led to greater productivity and that management must create conditions that provide favorable psychological effects upon the workers. Industrial training provided a basis for developing the proper work habits. His respect for the human element in industry led him to enlarge his concepts of management from production operations, a system, and a task to the mission of general management in relation to production.

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43 Gantt, Industrial Leadership, p. 59.
44 Ibid., p. 62.
Probably Gantt's best-known management concept was the principle of the Gantt Chart. This principle was illustrated by a chart showing by equal divisions of space on a single horizontal line at the same time the following: (1) equal divisions of time; (2) varying amounts of work scheduled; and (3) varying amounts of work done. (In Chapter V, a description of the Gantt Chart is given in connection with the contributions of Wallace Clark in his book entitled *The Gantt Chart*.)

The pioneers in management thought who developed scientific management actually initiated a philosophy of management. Scientific management consisted of a mental attitude on the part of those performing management functions. The following principles were established as guides for a general approach to the solution of management problems.

1. Work activities must be reduced to measurable units to permit scientific observation and experimentation. Motion and time study were developed for this purpose.

2. Standard times for operations must be determined and used as incentives for workmen. Task or standard times were used as standards for performance.

3. Workmen must be trained in the proper methods to be used for achieving the standards. Functional foremanship was used for this purpose.

4. Workmen must have their work planned for them. When relieved of this responsibility, they can concentrate on performance. Planning and routing devices developed to separate planning from doing.
5. Workmen must be inspired to accept new methods and improve their skills in performing tasks. Differential wage systems were devised for this purpose.

The first contributions to management thought resulted in what was termed a mental revolution concerning the attitudes of managers toward their responsibilities. An approach to management problems that utilized the scientific method replaced the methods of conventional or systematic management. Tradition gave way to research and experimentation. The American authorities began their scientific studies of work in the shop at the place of operative performance. Gradually they evolved concepts of organization, control, planning, and leadership to facilitate productivity and achieve high wages and low costs. Management developed into a mental activity or intellectual process. Principles were formulated to guide managers as they performed the functions of management as a differentiated activity from operative performance. Consideration developed for the human element in production. Leadership began to replace the driving of men to achieve production objectives.

Despite the benefits experienced from scientific management, there were criticisms from the labor unions. Harlow S. Person has summarized the criticisms. His main points are as follows:

1. The taking of time studies and the setting of tasks reflected unfavorably upon the good faith of labor.

2. The removal from the workman of his responsibility for determining the methods of his operations stunts him intellectually and makes his work uninteresting.
3. Scientific management speeds up the workman, wears him out, and casts him aside.

4. Scientific management is inapplicable because of the mobility of labor. Training is lost because of labor's movements from plant to plant.

5. Scientific management results in a spying system among workers, which results in mutual distrust.

6. Workmen have had a bitter experience with piece-rate systems because of rate cuts.

7. The increase in efficiency that results from scientific management will result in unemployment.

8. Labor is not allowed to help fix the rate of compensation.

9. Scientific management will impair the solidarity of labor by breaking down unionism and encouraging individual bargaining.

FIRST CONFERENCES ON SCIENTIFIC MANAGEMENT

The first conference on scientific management was held at the Amos Tuck School of Administration and Finance in October, 1911. At the Congress of Technology in Boston in April, 1911, a section of the Congress was devoted to the areas of administration and management.

Amos Tuck Conference

Recognition was given to the emerging scientific management approach to the management of industrial activities by the Amos Tuck School of

45Scientific Management (Hanover, N. H.: Dartmouth College, 1912).
Administration and Finance at Dartmouth College. Papers were presented by most of the pioneers in management thought. The influence of the conference itself and the published proceedings served to establish some of the early management concepts in the thinking of the industrialists of the period.

Frederick W. Taylor presented a paper entitled "The Principles of Scientific Management." His discussion covered some of the concepts and illustrations that appear in his book that bears the same title.

Henry L. Gantt's paper was named "The Task and The Day's Work." He gave a description of the task idea along with examples for setting tasks.

Harrington Emerson spoke on "The Opportunity of Labor Under Scientific Management." He stated that it was the greatest opportunity that ever came to labor because "strenuousness and efficiency are not only not identical but usually opposites." Inasmuch as strenuousness was not one of the aims or ideals of efficiency, he gave the following three aims of efficiency: (1) the recovery of hidden resources; (2) the elimination of waste; and (3) the equitable distribution of the gain. He encouraged workers to apply the principles of scientific management to their own lives.

Henry P. Kendall gave an address on "Unsystematized, Systematized, and Scientific Management." His comments were described by the title.

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46 Scientific Management. Hanover, N. H.: Dartmouth College, 1912. This publication consists of the proceedings of the addresses and discussions at the Conference on Scientific Management held October 12, 13, 14, 1911 at the Amos Tuck School of Administration and Finance.

47 Ibid., p. 95.
James Mapes Dodge's paper had the title of "The Spirit in which Scientific Management Should be Approached." He gave the following approach for learning about scientific management.

1. Obtain knowledge of the subject by reading about it in the papers published on the subject.

2. Have discussion periods with those interested in the subject.

3. "Then comes the period of incubation of the best plan to pursue in beginning the actual work of the introduction of scientific management."\(^{48}\)

4. "As soon as this is done two forms of activity manifest themselves."\(^{49}\) These were the improvements in the methods in the mind and the conflicts with other portions of the system.

5. Give care and thought to all details when changes are made.

James Mapes Dodge gave his address in 1911; Graham Wallas wrote *The Art of Thought* in 1926. The steps presented by Dodge are very similar to the steps presented by Wallas for creating a new thought. Although Graham Wallas has been recognized as being the first person to outline the steps used in creating a new idea, perhaps some recognition should be given to Dodge, who described the creative thinking process 15 years earlier.

In the conference symposium, the following persons participated:

Morris L. Cooke, Henry K. Hathaway, Sanford E. Thompson, Carl J. Barth,

\(^{48}\) *Scientific Management*, p. 150.

\(^{49}\) Ibid.
Frank B. Gilbreth, Lillian M. Gilbreth, and Frederick W. Taylor. All of these names were prominently associated with early contributions to scientific management.

Congress of Technology

The Congress of Technology opened in Boston on April 10, 1911 in celebration of the fiftieth anniversary of the granting of a charter to the Massachusetts Institute of Technology. Although most of the papers were on engineering subjects, there was a section on administration and management. Several papers were read on subjects of scientific management; the most significant one was presented by Wilfred Lewis, President of The Tabor Manufacturing Company, on "An Object Lesson in Efficiency." He related the details of the establishment of scientific management in his company—it was a testimonial for the work of Frederick W. Taylor. He stated that his company had been in financial trouble. Taylor gave him a loan with the understanding that his system of management would be installed in the Tabor Manufacturing Company. The results were a 250 per cent increase in the value of finished product. He concluded with the statement that

... the scientific habit of thought as applied by Mr. Taylor ... has resulted in speeding up machine shops about three to one, and I think it is not unreasonable to expect that the same habit of thought as applied by him to everyday hand work of men will eventually result in doubling the average output of labor with comparatively little increase in the physical effort required.50

The statement of Wilfred Lewis lends evidence to the acceptance of management as a mental activity rather than a method or a system of work. Furthermore, the conduct of management conferences at the Amos Tuck School and the Massachusetts Institute of Technology in 1911 stimulated interest in management concepts and practices.

**Congress of Human Engineering**

Educational institutions were instrumental in providing the means for disseminating information and knowledge having relation to the progress in management thought. Since the professional management associations were just getting started, congresses and conferences sponsored by universities were the main educational media for the spreading of management thought among students, professors, engineers, and industrialists. A typical example was the Congress of Human Engineering held at The Ohio State University in October, 1916.

In the introduction to the Congress of Human Engineering at The Ohio State University, there appears an interesting statement regarding the degree of acceptance of the scientific management attitude that existed at that time.

The amazing progress of science in all branches of engineering within the span of a short lifetime has brought into commonplace experience achievements which a few decades ago were either undreamed of or were regarded as marvels to be brought about only under special conditions and by extraordinary effort. Yet a great triumph of engineering, a new invention or a great structure is soon relegated to the scrap heap to make way for something which does the same work more efficiently. Fine

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51 The Society to Promote the Science of Management was established in 1914. It was reorganized in 1916 and named the Taylor Society.
structures and wonderful machines are ruthlessly demolished in order to take full advantage of the most efficient way of doing things. "Efficiency" has come to be the watchword of industry.\textsuperscript{52}

The theme of the Congress was the importance of recognizing the human element in industry. Typical subjects of the papers read were the new emphasis on the human factor in industry, the handling of men, the human side of the worker, and human engineering in welfare work. Such events indicated the influence on management thought of the social sciences as well as the physical sciences. The early conferences and congresses conducted by the universities laid the foundation for the subsequent "Management Weeks," which combined the efforts of professional associations, business firms, and universities for the purpose of providing opportunities to learn about the new ideas in management.

**FIRST TEXTBOOKS IN MANAGEMENT**

The origins of the creative concepts in management thought were first published in the classic books of the pioneers in management thought and in the publications of the engineering societies. As soon as management developed a discipline sufficient to justify it for inclusion in college courses, college professors began the preparation of textbooks in the area. College professors contributed little to the creation of the basic management concepts; they contributed greatly to the descriptions, the explanations, the integration, and the media for teaching the management

\textsuperscript{52}Quoted in *The Ohio State University Bulletin, XLI* (January, 1917). This Congress was sponsored by the College of Engineering.
concepts to students in the schools of engineering and commerce. The beginning stages of management education were around 1910, and within a period of fifteen years, management education had been established and was flourishing in the universities.

Among the first textbooks written for the teaching of management in schools of engineering and business, two were outstanding and often referred to in later books and professional publications. They were *Principles of Industrial Organization* by Dexter S. Kimball, a professor of industrial engineering at Cornell University and *Business Administration* by Edward D. Jones, a professor of commerce and industry at the University of Michigan.

**Dexter S. Kimball**

Kimball's book was written for college students preparing themselves for careers in industrial management. In the preface, he indicated that a new evaluation of industry brought new and higher ideals regarding service to humanity. He argued that scientific management could not bring changes on the basis or plea of increased production alone. He said "The spectre of distribution of profit, the bugbear of our industrial system stands constantly in the background, and the question that it ever

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raises—what will be the effect of these changes on humanity?—can no longer be ignored."  

Kimball's textbook was mainly descriptive in nature. He described the operative methods in the industrial processes. However, one chapter was devoted to principles of organization and one chapter to co-ordination and executive control. The general organization of the arrangement of management topics in his book was followed by the textbook writers in the nineteen twenties. He followed the concept of organization, system, and executive control in explaining the work of management and administration. His concepts of these subject areas served to influence the management thought of later textbook authors.

Management was defined as including:

... all activities incident to initiating an enterprise, financing it; establishing the major policies; providing the necessary equipment and personnel; organizing the enterprise so that all its parts will function properly, and directing or administering it after it is in operation.

His concept of management included the basic subfunctions of management that exist today, viz., planning, organizing, and controlling.

Organization was described as the mechanism of management; later authors used this concept. He differentiated between organization and departmentation. A department consisted of an enlarged individual; it represented a function in the same way that an individual did. Organization determined the relationship of departments and the relationships between individuals within the departments.

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55 Kimball, op. cit., p. 111.
56 Ibid., p. 90.
Administration, which Kimball used as a synonym for direction, was a subfunction of management which executed or carried out the objectives of the organization.

System was considered as the mechanism of administration; it was used to co-ordinate the efforts of departments and individuals. System provided for a division of labor and regulated the activities of production.

Co-ordination and executive control functioned within the system of the plant, and were accomplished by means of organization charts, organization records, standard procedure instructions, records of performance, orders, administrative reports, and committees.

Kimball applied his concepts of management to the field of production. He attempted to develop a science in management and a science in production. His textbook contributed greatly to the education of many college students in management concepts and practices. It was revised three times by Kimball himself and then three times more with the assistance of his son, Dexter S. Kimball, Jr. It has been an influence longer than any other textbook in management, viz., from 1913 to the present.

Edward D. Jones

The first book written by Edward D. Jones, Business Administration, was an optimistic attempt to establish the administration of manufacturing and operating companies as a new profession. He presented the administrator as a general, a scientist, and a diplomat. The book contributed little to management thought, but it did contribute to the evidence that management involved an intellectual process. The following
principles of mental efficiency were described: (1) economy of means; (2)
thoroughness; (3) methods are more valuable than results; (4) follow
the lead of the subject matter; and (5) exceptions and failures reveal
new laws. These principles indicate the influence of Henry L. Gantt.
Some administrative principles were established and explained concerning
decision, initiative, preliminary planning, subordination of detail,
discipline, and concentration to insure success. He used the same approach
to gain acceptance of the concept of a professional administrator that
H. W. Prentis used in 1952. Both men traced the stages in management
from the owner-manager through the captains of industry and corporate
exploiter stages to that of the professional manager or administrator.

The second book by Jones in 1916 had the title of *The Administration
of Industrial Enterprises*. It contained a detailed description of
factory practices that made it far more suitable as a textbook than
the first one. Jones tried to trace the application of the scientific
method in industry and "to point out the efficiency and the charm of an
economic policy based upon welfare and service." He explained the
contributions to management thought of most of the other authorities,
but he contributed little of an original nature himself. In his efforts
to summarize the management thought of his time, he presented the

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57 See H. W. Prentis, Jr., "Liberal Education for Business and
Industry," *Bulletin of the American Association of University Professors*,
XXXVIII (Autumn, 1952).

following points of what he called a creed:

1. The management must be responsible for all managerial functions.
2. An increased administrative staff must be provided to perform the wide range of functions connected with planning and the supervision of performance.
3. Planning should be carried out in advance of, and distinct from, performance.
4. A new group of standards should be formulated for the control of the condition of equipment, and the regulation of the time, place, and manner of performance.
5. Select persons who possess special aptitude for the task assigned to them.
6. Individualize records of performance, and furnish prompt information as to results.
7. Remuneration should be in accordance with individual performance.59

Probably the greatest contribution that Jones made to management education and the history of management was the compilation of excellent chapter bibliographies of the management literature of his time.

Other Textbooks in Management

After the contributions to management thought and practices by the pioneers in management thought and scientific management between 1900 and 1910, college professors began writing textbooks for college courses in management and for correspondence study. The most successful ones were authored by Kimball and Jones. Several others are mentioned here to indicate their nature and contents; they contributed few if any creative concepts. They did provide the impetus for the advancement of management education in the nineteen twenties. The college professors contributed to the management literature from backgrounds of economics, political science, accounting, commerce, and engineering.

59Jones, The Administration of Industrial Enterprises, pp. 135-36.
Horace B. Drury reported in 1915 that some of the leading universities had introduced courses in scientific management into their curricula. He mentioned five—Harvard, Columbia, New York University, Syracuse, and Pennsylvania State. He added that portions of the literature and some of the principles of scientific management were introduced very generally into courses in economics and engineering. Although the increasing number of college textbooks did not contribute to the creative development of management thought, they were needed to teach management. Thus, they were an important influence in spreading the understanding of scientific management and its principles.

Correspondence courses in management followed closely after the first publications of the pioneers in management thought. From 1910 to 1920, correspondence courses in management probably influenced more individuals than residence college courses. Lee Galloway prepared

Organisation and Management in 1910 for the Alexander Hamilton Institute, George S. Armstrong wrote Planning and Time Studies in 1918 for the Industrial Extension Institute, and Dexter S. Kimball authored Plant Management for the Alexander Hamilton Institute in 1919.

**Early Psychology Textbooks**

Because of the emphasis on the human element in scientific management, psychologists began to show interest in applied or industrial psychology. Their early textbooks appeared along with the textbooks in management.

Hugo Munsterberg is credited with writing the first textbook in industrial psychology in 1913 under the title of Psychology and Industrial Efficiency. He applied the experimental scientific methods of psychology to the task of solving management problems in the areas of monotony, attention and fatigue, and the economy of movement. He extended his interest beyond production and invaded the fields of economic demands, advertising, buying and selling, and display.

Although it was not accepted as a textbook in industrial psychology, Walter D. Scott wrote Increasing Efficiency in Business in 1911. He did not apply the scientific methods of experimental psychology to business, but he did write about the psychological aspects in business of concentration, loyalty, competition, imitation, and pleasure. He attempted to show how these factors could be used as a means for increasing human efficiency.

Ordway Tead published a study of the working-class psychology in 1918. Its title was Instincts in Industry. He proposed to show that an understanding of the instinctive mainsprings of human action enabled better
control of human conduct. He used the following instincts to explain working class conduct: (1) parental instinct; (2) sex instinct; (3) instinct of workmanship; (4) instinct of possession; (5) instinct of self-assertion; (6) instinct of submissiveness; (7) instinct of the herd; and (8) instinct of curiosity.

The early writings of the psychologists contributed to management thought in the areas of proper utilization of human effort in industrial enterprises. Their basic contributions developed into the field of the behavioral scientists in later years.

FIRST DISSERTATION AND PAPERS IN MANAGEMENT

Doctoral Dissertation

Horace B. Drury made the first study of scientific management in 1915 for purposes of a doctoral dissertation. Its title was "Scientific Management: A History and Criticism." He presented a description of scientific management in which the early attempts to solve the wages problem were discussed, and the principles of scientific management were listed. A brief biography of each of the leaders in scientific management was given, and a report was prepared on the trades and plants in which scientific management had been introduced. As a conclusion, a critical review was made of the productivity of scientific management and whether or not it would solve the labor problem, particularly the human side of it.

In Drury's conclusions, he made the following statement about the future of scientific management.
In view of these practical considerations, it would be very strange indeed if the scientific management which we have discussed is not in the future greatly transformed and differentiated. One may say that this or that thing seems good and that the indications are that it will come into wide use; but to maintain that scientific management, as it is now known, will one day dominate the industry of America or of the world, would be to make a hazardous prediction.

The preceding record of the forecast of a scholar about the future of scientific management in 1915 is most interesting. He would have had difficulty in visualizing today's missions of the Council for International Progress in Management and The International Cooperation Administration in their efforts to educate the management personnel of the underdeveloped countries in American management concepts.

Articles and Lectures

Clarence B. Thompson served as editor for the first collection of articles that described the Taylor System of Management. The collection was named Scientific Management and was published in 1914. Thompson collected the most significant articles published about scientific management prior to 1914. He included papers from the first management conference at the Amos Tuck School and the Congress of Technology. His other main sources were the American Society of Mechanical Engineers and Industrial Engineering. This first collection of articles had a significant influence on disseminating the management concepts of the early leaders.


in the field such as Frederick W. Taylor, James M. Dodge, Carl G. Barth, H. L. Gantt, and H. K. Hathaway.

Russell Robb had published three lectures that he had given in 1910 in the course on industrial organization in the Graduate School of Business Administration of Harvard University. His summary comment about the limits of organization is quoted:

*Organization is but a means to an end; it provides a method. It can never take the place of business judgment, or intuitive sense of what is wise to do, or vigorous initiative that sets things in motion; but it can help these by relieving from detail those who must exercise judgment, and by bringing to them the premises they need; and it can help the execution by providing orderly procedure for carrying out the action that is determined upon.*

This concept softened the idea that organization was merely a mechanism of management and put organization into its proper perspective in relation to leadership.

In *The Works Manager Today*, published in 1918, Sidney Webb made some astute observations about the function of management. He believed that management was involved in the avoidance of any waste of human effort. He stated that the profession of the manager would always continue to exist, whatever the form and government of the social order. Management to him was the profession of organizing men—"of so arranging and directing activities of a band of producers, including both brain workers and manual workers, as to create among them the most effective cooperation of their energies in achieving the common purpose."
Webb advocated payment by results to avoid waste of time in the shop, and he predicted that public opinion would itself demand a systematic "speeding-up" of production. He stated that the best feature of scientific management lay in its psychological influence on management itself. Scientific management, wrote Webb

... emphasises the importance of (a) discovering, and (b) applying universally the best process and the best way of doing each job, instead of letting each little establishment and even each workman, blunder along on 'rule of thumb.'

Webb's book was the published version of an address prepared for a series of private gatherings of works managers. His endorsement of scientific management methods, and the mental attitude required, served to influence the management thought of those who could most benefit from his concepts.

Summary

1. Growth was the major characteristic of the economic and social environment during the beginning years of the twentieth century. The population and work force were expanding. Inventions and innovations had made possible more efficient power and large-scale industrial operations. Markets were expanding. Management skills and methods had lagged behind the progress in engineering and financing, so the situation was ready for improved management concepts and practices. Subsequently, a more scientific approach to the practice of management emerged.

66 Webb, op. cit., p. 133.
2. The methods of engineering and science were applied to the task of managing men for more efficient results and higher productivity with higher wages.

3. Frederick W. Taylor experimented with the methods of science to establish standards of performance, the planning of work, and maintenance of the standards of performance by task objectives and more equitable wage payments. The concept of management as a mental attitude and a mental activity developed. The intellectual approach to management was based on Taylor's principles of: (1) science, not rule of thumb; (2) harmony, not discord; (3) cooperation, not individualism; (4) maximum output in place of restricted output; and (5) the development of each man to his greatest efficiency and prosperity.

4. A small group of engineers who were pioneers in management thought demonstrated the effectiveness of Taylor's principles. By experimentation and scientific methods, proper standards of work performance were established by means of time and motion studies. Effective organization structures were devised. Wage payment plans were invented to pay workers on a task basis. Work was efficiently planned in advance of performance, and control methods were installed. Emphasis was placed on the elimination of waste through practices of efficiency. The human element increased in importance in the thinking of management.

5. Management thought embraced the concept that identifiable functions of production existed for proper combination into effective organizations. Laws of human effort and principles of efficiency were formulated to guide managerial efforts in utilizing human effort.
6. Management functions were first identified by Fayol, and the concept of a management process in relation to the work activities of a business emerged in 1916.

7. Concepts of leadership and the proper use of authority and delegation appeared in the literature and in practice.

8. The training of workers to perform efficiently in order to achieve standard tasks and rates became prevalent. Otherwise, the concepts of the task and bonus or the differential piece rate would have found disfavor.

9. Labor unions opposed the practices of scientific management. However, the effectiveness of the scientific approach to work was proved during World War I and opposition subsided.

10. The hearings before the Interstate Commerce Commission of the Eastern Rate Case gave scientific management an opportunity to be evaluated publicly. Support developed for the new management concepts.

11. Scientific management became recognized as a respectable discipline by the universities. Conferences were held to study its methods, and courses in management were introduced into the college curricula. The first formal conference on management was held in 1911 at the Amos Tuck School.

12. The first textbooks in management appeared between 1910 and 1915 for use in newly installed courses in management in schools of engineering and commerce. These media for management thought facilitated the teaching of management in both residence and correspondence schools.
13. The psychologists laid the foundation for contributions to management thought from the behavioral scientists. Industrial psychology textbooks appeared at the same time as the texts in management.

14. The first doctoral dissertation to describe and evaluate scientific management appeared in 1915. Lectures were published by recognized authorities to further management education.

15. Collected articles from the most significant sources were published in 1914 for the information of those interested in learning about scientific management methods.

16. From 1900 to 1920, management thought developed rapidly toward a mental attitude of seeking facts instead of opinions in every phase of managerial activity. The science of management became established as a basis for the practice of the art of management.
CHAPTER IV

INTRODUCTION OF MANAGEMENT EDUCATION (1921-1930)

The decade of the nineteen twenties was a period of consolidating and furthering the progress of management education. There was continued growth and development of the national economy, along with an incipient interest in social progress and waste elimination in industry. Professional management associations were reorganized and contributed to the development of management thought through publications and conferences. Schools of commerce and engineering became interested in the value and the content of courses in management. Significant contributions to the literature of management were made by academic men as well as industrialists for textbook use. A favorable climate prevailed for management education to assist in the training of men for industrial leadership for expanding business organizations and operations.

ECONOMIC AND INDUSTRIAL CLIMATE

Following the close of World War I, the business cycle was characterized by the depression of 1920-1921 and then an expansion to 1923. After some contraction of business activities in 1924, the economy expanded again until 1926. In 1927, there was a short contraction in the cycle after which expansion occurred until the latter part of 1929. This continuing economic growth and progress in the nation provided a situation in which improved management practices were accepted and their importance recognized. Acceleration rather than structural change was the
trend of economic developments from 1921 through 1929. Power increased in
supply and was used more widely. Mechanical energy multiplied the strength
and skill of workers. Production per man-hour of effort rose to new
heights because of a better division of work by improved organizational
practices and increased mechanization in industry. Capital formation
increased as the result of the surplus incomes of a great proportion of the
population. Progress was made toward more stable employment in the seasonal
industries. Some technological unemployment resulted from worker displace-
ment by improved machinery and work methods. The standard of living
reached its highest level in national history during this period. 1

During the prosperous period of the nineteen twenties, the attitudes
of business leaders were characterized by the terms, "back to normalcy"
and "less government in business." Most of the government emergency war
controls had been removed. Business firms were enjoying record levels of
attainment. However, agricultural activities were not sharing in the
prosperity, since rising costs and declining incomes were creating problems
for farmers. The federal government, in an attempt to aid farmers, enacted
the Agricultural Credit Act of 1923; the Cooperative Marketing Act of 1926;
and the Agricultural Marketing Act in 1929, which established the Farm
Board. Thus, the federal government began to play an expanding role in
economic activities, although the strong influence of the federal government
on business activities was yet to come.

1 Summarized from Report of the Committee in Recent Economic Changes,
H. V. Prentis, Jr. described the type of businessmen who characterized the decade of the nineteen twenties.

Generally speaking, they consisted of corporate speculators and plungers. This class followed more or less closely on the heels of the old captains of industry and in many instances endeavored to emulate their methods. There was this difference, however; they were usually merely business executives, not owners of their businesses. Hence, they made their fortunes by using the resources of their own concerns to help each other reciprocally in their various speculative ventures. In the field of finance, the difference between the old time banker who considered himself primarily the trustee of his stockholders' and depositors' money and the speculative banker whose chief object was to make quick profits by participating in as many syndicates and promotions as possible, was never so clear as during those years of riotous speculation in the late 1920's.2

The background for contributions to management thought and practices in the decade of the nineteen twenties was (1) an expanding economy with prosperous business activities following a victorious war for the Allies; (2) the inroad of the federal government in economic activities because of rising costs and declining incomes in agricultural activities; and (3) a typical business leadership consisting of nonowner business executives engaged in speculative pursuits for quick profits with little thought of social or economic consequences. It was during this period that constructive contributions to management thought and practices were made by professional management associations, schools of commerce and engineering, and academic personnel in the universities. Professional management associations and educational institutions had an opportunity to provide training for practicing business executives and for those in preparation for future management responsibilities.

PROFESSIONAL MANAGEMENT ASSOCIATIONS

Professional management associations came into existence with the Society to Promote the Science of Management in 1914. It was reorganized as the Taylor Society in 1916. Several associations and societies followed with memberships drawn from engineers and business managers. During the decade of the nineteen twenties, professional management associations became strongly established and, through the combining of the pioneering ones, were organized into those which exist today.

The Society for Advancement of Management was started in 1930 by the union of The Society of Industrial Engineers with The Taylor Society. Subsequently the Industrial Methods Society joined with the Society for Advancement of Management. This Society was the pioneer in management philosophy and has been dedicated to the promotion and advancement of the art and science of management. It publishes Advanced Management monthly, which is the successor to The Society for the Advancement of Management Journal, the Bulletin of The Taylor Society and of The Society of Industrial Engineers.

The American Management Association was established in 1923. It started from an association organized in 1922 as the National Personnel Association. The Industrial Relations Association and the National Association of Corporation Schools had first merged to form the National Personnel Association. The publications of the American Management Association were Personnel and Management Review, published on a monthly basis. Management News is published on a continuing basis, as are research reports and individually numbered series in the areas of general management, finance, insurance, marketing, personnel, production, packaging, and office management.
The memberships of the Society for Advancement of Management and the American Management Association were particularly interested in the areas of industrial engineering, personnel, and industrial relations. However, there were older engineering societies with strong interests in management. In 1920, the American Engineering Council was formed by the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers. The American Engineering Council served as the executive board of the Federated Engineering Societies. During the nineteen twenties this group contributed greatly to the development of improved management practices. Of special significance were their reports on *Waste in Industry, The Twelve Hour Shift, and Safety and Production*. The American Engineering Council lasted until the end of 1940.

During the nineteen twenties, the professional associations in management and in engineering contributed in many ways to the development of management thought and practices. "Management Weeks" were promoted and sponsored in the United States to encourage better management practices and waste elimination.³ Management congresses with international representatives

were organized and held in Prague, Brussels, Rome, Paris, and Amsterdam from 1924 to 1932. The American Committee at these International Management Congresses represented the American Association of Mechanical Engineers, the Society of Industrial Engineers, the Taylor Society, the American Management Association, and the National Association of Cost Accountants. This representation is indicative of the interest in management that some of the professional associations and societies had during this period. In addition, there was a management session at the World Engineering Congress in 1929 in Tokyo.

Contributions to the development of management thought and practices by the professional management societies involved conferences, meetings, and articles in their publications. Publications sponsored by the professional societies gave college professors and business executives the opportunity to further management education by providing the vehicle for articles concerning management philosophy, practices, and research projects. Conferences and meetings allowed practicing managers and management teachers to exchange views and develop the knowledge, skills, and attitudes of those in attendance about the art and science of management. Educators and businessmen found the means to learn about management and become motivated toward better management practices through the programs of the professional management societies.

SCHOOLS OF COMMERCE AND ENGINEERING

An important influence on the development of management thought was the curricula of schools of commerce or business. Although many schools
of commerce or business existed prior to 1921, it was following World War I and during the twenties that such schools came into prominence and flourished with their own professional identities.\(^4\) Their enrollments increased in the prosperous times of the nineteen twenties. In addition, graduate programs leading to master's and doctoral degrees were started. Competent faculty members were in demand for an increasing number of schools and increasing enrollments in the established schools. Management courses became more popular in the schools of commerce than in the engineering schools.

The American Association of Collegiate Schools of Business was organized at a conference of representatives of collegiate schools of business held at the University of Chicago, June 17, 1916; the first annual meeting was held at Harvard University in November, 1919. This association has been concerned with curricula in addition to other standards and has taken action to include the area of management in the basic curriculum as a requirement for membership.

A statement regarding curriculum requirements in the Standards of Membership in the American Association of Collegiate Schools of Business includes the field of management. The statement is:

As the foundation for training in administration, instruction shall be offered in the fields of economics, accounting, statistics, business law, finance, marketing, and production or industrial

\(^4\)Among the first schools of commerce or business were the Wharton School of Commerce and Finance (1881), the University of California (1898), the University of Chicago (1898), the Amos Tuck School at Dartmouth College (1900), and the University of Wisconsin (1900).
management. In general, candidates for the undergraduate degree shall receive basic instruction in each of these fields. Opportunities beyond the basic course shall be available in at least three of the above fields.5

The acceptance and encouragement of the field of management in the professional schools of business has resulted in opportunities for management education in their curricula in addition to the professional schools of engineering.

The growth and acceptance of management courses in the schools of engineering and commerce generated interest in the proper content of courses in management. On December 5, 1924, two college professors presented a paper on the subject at a meeting of teachers of management under the auspices of The Taylor Society in New York.6 The paper, "The Content of Courses in Management," was subtitled "An Important Educational Problem Considered from the Points of View of the School of Engineering and the School of Commerce." Joseph W. Roe, Professor of Industrial Engineering at New York University and Nathaniel G. Burleigh, Professor of Industrial Organization and Management at the Amos Tuck School, Dartmouth College, were the authors.

According to H. S. Person, Managing Director of the Taylor Society, the occasion for the preparation and presentation of the paper was the first time that teachers of management from schools of commerce and from engineering

5Standards of Membership in the American Association of Collegiate Schools of Business, a four-paged pamphlet published by the AACSB.

schools had ever joined in a discussion of a common educational problem, the content of courses in management.\textsuperscript{7}

Pertinent information disclosed by the paper was that various courses existed in the engineering schools and universities by such titles as Industrial Engineering, Engineering Administration, Industrial Management, and Business Administration, all with the object of preparing students for executive work in industry. The practice in the general field covered by the courses in management was developed chiefly by mechanical engineers and by business executives. The teachers made their contribution by presentation of the facts and the broadening of the principles involved. The engineers entered the field almost unconsciously; according to the authors, P. W. Taylor's early contribution illustrated this point.

Taylor, in his capacity as a young machine shop foreman, was interested in getting better output in some way other than by driving the workers. He started by substituting for guess methods an approach that could give precise knowledge of what should constitute a day's work. His investigation started at the point of the cutting tool to answer three detailed questions, all of them within the mechanical engineering field; namely, "What feed shall I use, what speed, and what depth of cut?" The answers to these questions forced him to widen his inquiries until a whole system of management evolved. His successors, in developing production methods, were compelled to take into consideration the sales program, business cycles, and finance, as well as the production program.

\textsuperscript{7}Ibid., p. 9.
The developments in the field of management caused a broadening of perspective in the field of engineering. For years engineering had been defined as "the science of utilizing the forces and materials of nature for the benefit of man." When the Federated American Engineering Societies was formed in 1920, a clause was added to broaden this definition: "and the art of organizing and of directing human activities in connection therewith." Along with the broadened perspective of engineers, business executives were starting to expand their concepts of the purpose of industry. In addition to the concept that the making of profits was an obvious and direct purpose of industry, some recognition was given to the concept that industry's ultimate and permanent purpose should be the efficient production of goods and services. This expanded concept drew business executives into a twilight zone of engineering. They became interested in the "art of organizing and directing human activities," and in the use of engineering methods such as analysis and testing. The foundation was laid for the concept of the service motive and what would eventually become the area of management science in the nineteen fifties.

The concept of the service motive was advanced by Howard Coonley in 1924. In an address at an annual meeting of the Taylor Society, he stated:

The justification for any undertaking whether great or small, individual or collective, is accomplishing a service to the community. Businesses may be created primarily for profit to the investor, but unless in accomplishing this selfish aim, they render service to the community as a whole, they cannot continue to exist.

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8 This definition of engineering was credited to the Institution of Civil Engineers when it was founded.

9 Bulletin of the Taylor Society, op. cit., p. 3. The service motive was the subject of an address at the annual dinner of the Taylor Society by Howard Coonley, President of the Walworth Manufacturing Company in New York, December 4, 1924.
Howard Coonley stated in his address that the Taylor Society, more than any other association, had given to business and the world a better understanding of sound management. He also gave credit to the schools of business administration for helping with the development of management towards a profession and for helping executives to use the tools of the scientist, "if they have proved their worth, whether for production, sales, or administration."

In their paper presented at the first meeting of the teachers of management, Professors Roe and Burleigh gave credit to the schools for advancing management education. They stated that:

Both the schools of commerce and the schools of engineering took up the teaching of management as soon as a science of management came to be recognized, the schools of commerce earlier perhaps than those of engineering. They too have been moving toward each other, at least in this field, and a comparison of their catalogues shows an overlapping of courses reflecting the conditions in industry.10

Professors Roe and Burleigh reported on the problems of establishing a college curriculum for management education. They stated that, for want of a better classification in the field of management, they used the "breakdown" of management in Management's Handbook, which had been recently published, with some additional elements.11 Table 1 shows the "breakdown" of the field of management with reference numbers at the right of the table to show how the various courses in Table 2 tie in with the elements listed in Table 1. Table 2 shows the various courses that were offered in schools of engineering and commerce which had a relationship to the elements in the "breakdown" in Management's Handbook.

10 Bulletin of The Taylor Society, op. cit., p. 5.
### TABLE 1

**BREAKDOWN OF THE FIELD OF MANAGEMENT**

<table>
<thead>
<tr>
<th>No.</th>
<th>Sections or Elements</th>
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<tbody>
<tr>
<td>1.</td>
<td>Tables and Statistics</td>
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<td>2.</td>
<td>Mathematics</td>
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<td>3.</td>
<td>Charts</td>
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<td>4.</td>
<td>Management Ratios</td>
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<td>5.</td>
<td>The Industrial Plant</td>
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<td>6.</td>
<td>Plant Layout</td>
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<td>7.</td>
<td>Office Management</td>
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<td>8.</td>
<td>Forms</td>
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<td>9.</td>
<td>Classification and Symbols</td>
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<td>10.</td>
<td>Purchasing and Storekeeping</td>
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<td>11.</td>
<td>Tool Storage and Issue</td>
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<td>12.</td>
<td>Production Control</td>
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<td>13.</td>
<td>Control of Quality</td>
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<td>14.</td>
<td>Materials Handling</td>
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<td>15.</td>
<td>Operation Study and Rate-Setting</td>
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<td>16.</td>
<td>Wage Payment and Timekeeping</td>
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<td>17.</td>
<td>Simplification and Standardization</td>
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<td>18.</td>
<td>Plant Maintenance</td>
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<td>19.</td>
<td>Conserving and Salvaging Materials</td>
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<td>20.</td>
<td>Packing for Shipment</td>
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<td>21.</td>
<td>Traffic and Shipping</td>
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<tr>
<td>22.</td>
<td>Economic Principles</td>
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<tr>
<td>23.</td>
<td>Organization for Ownership (Includes Finance)</td>
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<td>24.</td>
<td>Organization for Operation</td>
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<tr>
<td>25.</td>
<td>Budgetary Control</td>
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<tr>
<td>26.</td>
<td>Cost Accounting</td>
</tr>
<tr>
<td>27.</td>
<td>Cost and Profit Variation Formulas</td>
</tr>
<tr>
<td>28.</td>
<td>Banking Relations (Includes Finance)</td>
</tr>
<tr>
<td>29.</td>
<td>Insurance</td>
</tr>
<tr>
<td>30.</td>
<td>Market Analysis</td>
</tr>
<tr>
<td>31.</td>
<td>Labor Maintenance</td>
</tr>
<tr>
<td>32.</td>
<td>Information Filing System</td>
</tr>
<tr>
<td>33.</td>
<td>Sales Management</td>
</tr>
<tr>
<td>34.</td>
<td>Advertising</td>
</tr>
<tr>
<td>35.</td>
<td>Commercial Law</td>
</tr>
<tr>
<td>36.</td>
<td>General Accounting</td>
</tr>
<tr>
<td>37.</td>
<td>Credits</td>
</tr>
</tbody>
</table>

**Additional Elements**

- 33. Sales Management
- 34. Advertising
- 35. Commercial Law
- 36. General Accounting
- 37. Credits

TABLE 2

COURSE OF STUDIES IN THE MANAGEMENT FIELD

Group A. Fundamentals Common to both Engineering and Commerce Type of Curricula

1. English Composition and Literature
2. Mathematics, up to Calculus
3. Science, not less than one year of Physics or Chemistry, preferably a year of each
4. Elementary Economics
5. Industrial History
6. Psychology
7. Elementary Accounting
8. Political Science
9. Modern Language

Group B. Intermediate Courses

<table>
<thead>
<tr>
<th>Commerce Field</th>
<th>Engineering Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Business English</td>
<td>2. General Engineering Drawing</td>
</tr>
<tr>
<td>5. Advanced Economics</td>
<td>6. Shop Methods and Equipment</td>
</tr>
<tr>
<td>15. Industrial Relations</td>
<td>16. Hydraulics</td>
</tr>
<tr>
<td>19. Industrial Organisation and Management (Comprehensive course or group of courses which should include Production Control)</td>
<td>20. Cooperative Work in Industry</td>
</tr>
<tr>
<td>21. Cooperation in Business</td>
<td></td>
</tr>
</tbody>
</table>

Group C. Specialized Courses

<table>
<thead>
<tr>
<th>Commerce Field</th>
<th>Engineering Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Advertising</td>
<td>4. Electrical Engineering</td>
</tr>
<tr>
<td>5. Foreign Trade</td>
<td>6. Tool Design</td>
</tr>
<tr>
<td>7. Finance and Credit</td>
<td>8. Materials Handling</td>
</tr>
<tr>
<td>9. Banking and Investment</td>
<td>10. Advanced Plant Design</td>
</tr>
<tr>
<td>13. Budgets</td>
<td></td>
</tr>
<tr>
<td>15. Office Management</td>
<td></td>
</tr>
<tr>
<td>17. Traffic and Shipping</td>
<td></td>
</tr>
<tr>
<td>19. Personnel Management</td>
<td></td>
</tr>
</tbody>
</table>

The authors refrained from outlining specific curricula for management education; their purpose was merely to indicate the content of management courses that were being offered at that time. An analysis of the comments of the authors discloses some agreement and some disagreement on the courses that should be required in the commerce field and the engineering field. However, both authors agreed that a thorough and comprehensive course in industrial organization and management should be required in both commerce and engineering curricula, even though Table 2 lists the course in the commerce field. The authors indicated that such a course could be used to correlate a considerable number of the elements of management listed in Table 1 which do not justify separate courses.

Both Professors Roe and Burleigh were of the opinion that some form of cooperative work in industry, in addition to courses in management, was vital for the preparation of students for executive work. They also believed that outside lecturers should be used as far as possible for courses in management. The lecturers should be men with experience either in business or engineering. Textbooks were considered necessary in many courses for background purposes. However, a strong preference was shown for the problem method of teaching management.

In the discussion period that followed the paper, there was considerable disagreement among the teachers of management concerning the value of management courses in developing executive leadership, the degree of specialization desirable in management courses, and the merits of the cooperative method for management education. H. S. Person summarized the
presentation by stating that:

The following major functional activities seem to stand out as essential objectives of training for any course in management which aspires to be inclusive:

A. The discovery, design and improvement of the product

B. The design, improvement and maintenance of plant and equipment

C. The design and utilization of methods of processing—production engineering

D. The investigation and analysis of social need and use—industrial engineering—sales engineering

E. The distribution of the product to individual consumers—selling

F. Specialized activities auxiliary to the activities enumerated above, involving the utilization of social instruments or observation of social regulations with respect to credit and banking, transportation, tariffs and taxes, insurance, labor laws, technique of foreign and domestic commerce, accounting, social customs and prejudices

G. General administration or the coordination of all activities in an enterprise

An examination of the table of contents of Management's Handbook, of the college courses listed for studies in the management field, and of E. S. Parsons's summary of the paper entitled "The Content of Courses in Management" brings out the fact that management education at that time was oriented around production processes in a manufacturing environment. Courses in management were aimed at providing practical knowledge in functional areas. Emphasis was more on techniques and procedures than on fundamentals and broad principles. Consequently, textbooks and general books in the management

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field tended to be descriptive and to present surveys of current practices. Contributions to the literature of management were written from the author's experience or speculation rather than from research findings. However, there should be little if any criticism of those who were contributing to the literature of management at that time. The point of importance is that men were writing and thinking about better management practices to minimize waste, fatigue, and improper use of human effort. Through the efforts of professional management associations, college professors, enlightened businessmen, and engineers, a body of knowledge was being created in the field of management. It was natural that attention, thinking, and writing were centered around industries and management practices in manufacturing firms. Emphasis was on demonstrating the beneficial results that could be achieved from improved management techniques and practices. Attention and interest could be expected to develop later about general principles or fundamentals of management that might be applicable to all functions of business in all types of industry.

SIGNIFICANT NATIONAL RESEARCH STUDIES

During the nineteen twenties, there were two significant national research studies that generated interest in the management practices and objectives needed in the economy. Both studies were in the public interest with the encouragement of the federal government. In 1921, the Federated American Engineering Societies undertook a study of the restrictions and wastes in industry. In 1928, a survey of recent economic changes was
started under the auspices of the National Bureau of Economic Research, Inc., with the assistance of many governmental and private agencies.

In the foreword of the report entitled *Waste in Industry*, Herbert Hoover made the following comments about the purpose of the report:

It reveals facts which may serve as a foundation for an advance in American industry. It has a special message for governmental officials, financial, industrial and commercial leaders, labor organizations, economists, engineers and research groups, the general public and the press.13

The findings of the report attributed waste in industry to:

1. Low production caused by faulty management of materials, plant, equipment and men
2. Interrupted production, caused by idle men, idle materials, idle plants, and idle equipment
3. Restricted production intentionally caused by owners, management, or labor
4. Lost production caused by ill health, physical defects, and industrial accidents

On the basis of the results obtained from evaluation studies of engineers' field reports in several industries, the report concluded that "management has the greatest opportunity and hence responsibility for eliminating waste in industry."14 For purposes of clarification, the report defined both management and responsibility. The term management in the report refers to the agency (owners or managers) that exercises the management function in industry. The management function was defined as "the art and science of preparing, organizing and directing human effort applied to control the

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forces and to utilize the materials of nature for the benefit of man."

This definition was one that had been approved in 1921 by the Management Division of the American Society of Mechanical Engineers. The prominence given to this definition by such an important national report must have influenced the concept of management as a function among educators, public officials, economists, engineers, and business executives. The report gives detailed reasons for waste in industry caused by low production, interrupted production, restricted production, and lost production.

Suggestions for elimination of waste were presented with case examples for several selected industries.

Recommendations for the elimination of waste in industry involved the placing of responsibilities and opportunities for waste elimination on seven groups: management, labor, owners, the public, trade associations, governmental agencies, and engineers. The responsibility of management for waste elimination was outlined as follows:

1. Improvement of organization and executive control
2. Production control
3. Balancing productive capacity and demand
4. Development of purchasing schedules
5. Elimination of cancellations and curtailment of returns
6. Correlation of production schedules with sales policies
7. Inspection
8. Maintenance of plant and equipment
9. Uniform cost accounting
10. Methods of wage payment
Although these recommendations for the elimination of waste in industry were made in 1921, they can be applied properly in 1959. For example, the recommendation for management's responsibility to improve organization and executive control states,

Planning and control should be adopted as fundamentals of good management. For the most part they have not yet penetrated the mass of American industry.

Managerial control, when properly planned, extends its influence into every activity of an industrial organization and plant, reaching materials, design, equipment, personnel, production, costs and sales policies and coordinating these factors to a common objective. While this statement applies more particularly to large plants, still the smaller units can utilize the same principles and thus secure the advantage of modern methods.16

It is difficult to realize that these recommendations made almost forty years ago are as applicable to management's responsibility and opportunity today as at that time. Certainly this report did summarize and project the job of the manager at the beginning of the twenties. The managerial situation was portrayed as a basis for needed management

education in the schools, the professional management societies, and business firms. Some of the names signed to the report on *Waste in Industry* on June 21, 1921 were to remain well known a generation later, viz., Harrington Emerson, Morris L. Cooke, C. E. Knosyppal, George Babcock, L. P. Alford, and Herbert Hoover.

Another significant national report appeared at the end of the nineteen twenties under the title of *Recent Economic Changes in the United States*. As an outgrowth of the President's Conference on Unemployment of 1921, three national surveys were conducted to enlarge the understanding of the national economic system. The first of the surveys was a study of business cycles and unemployment made in 1922-23. The second was a study of seasonal operation in the construction industries made in 1923-24. The survey made and published under the name of *Recent Economic Changes* was begun in 1928 and completed in 1929. It entailed an analysis of postwar developments in American economic life following the recovery from the 1920-21 depression.

*Recent Economic Changes* was published in two volumes. The report started with characteristics of the years 1922-29 and then gave much detailed information on the major functional segments in the economy, along with data concerning basic industries. One chapter was devoted to the subject of management. It was prepared by Henry S. Dennison with the assistance of others, who included R. H. Lansburgh and E. H. Schell. In this chapter, the methods of management found in a survey of American manufacturing and marketing during the nineteen twenties were recorded. According to

The report disclosed that only 20 per cent of the companies included in the survey planned any betterment for the skill and morale of employees, as compared with the large majority that expressed their aim to work for progress through perfection of physical facilities. Scientific thinking of managers was more concerned with plant and process problems than with human problems. However, it was stated that the tendency toward the scientific rather than the opportunistic type of mind, and a growing belief that training for general business management was worth-while, would make it possible for human problems to get a larger share of attention in the future.

The 1921 report entitled Waste in Industry provided managers with recommendations for eliminating waste in industry through improved management practices. The 1929 report on Recent Economic Changes gave the trend of managerial practices and the progress made in many of the areas mentioned in the first report. Some of the significant statements concerning management practices in the management chapter of the 1929 report provide a digest

18 *Recent Economic Changes*, op. cit., p. 496.
of management thought in the nineteen twenties in the areas of organization, management of manufacturing, and management of marketing.

Pertinent comments in the report regarding organization were as follows:

1. Increasing attention was given to finding better forms of internal organization structure. The natural course of evolution was away from one-man management. The mere increase in the number of departments and divisions of a straight-line organization was not sufficient to meet the demands of increasing complexities of organization because too wide a range of knowledge was required of executives. The practice evolved of placing especially difficult or important functions under the responsibility of one man, who was expected to guide, direct, or supplement the actions of line executives in such functions.

2. Although the more fully developed line and staff type of organization had been experimented with and described for twenty years, its significant applications were not accepted until the nineteen twenties. By 1929, there was a definite trend toward the development of such staff departments as planning, materials control, personnel, methods, styling, sales promotion, and merchandising. Some advisory positions, such as economist and statistician, also came into being. According to the survey, the trend toward the line and staff type of organization resulted more from a broad change in the ideas of management than from the size of the organization or the nature of its operations. It was found that fuller use of the natural aptitudes of some executives could be realized by the practice of giving functional responsibilities to staff executives.
3. Better methods of co-ordination were sought because of the greater complexity of business problems and the need for organization to cope with the demands for co-ordinating plans with the work of specialists and line executives. The trend away from one-man control forced department heads into conferences so frequently that a system of operating committees became established.

Organization charts were maintained by relatively few companies and fewer still kept them up to date. These charts seemed to be used to picture the status of an organization at some time instead of showing its living relationships. There seemed to be more interest in the principles of organization than in the forms of organization. Job specifications and the beginnings of a description of the working relationships among jobs took the place of organization charts as aids to organization building. Although there were many mergers in the nineteen twenties, there was little interest in the structural organization aspects of mergers. The financial aspects of mergers held the center of attention.

4. The necessity for handling functional and research specialists brought into prominence a technique of consultation, persuasion, and inspiration instead of a technique of order-giving. The need in executive positions was for men who could lead rather than dominate. Some articles bearing on the qualities of creative leadership appeared in the professional journals.¹⁹

5. The planning of courses of action in advance on paper was not a common practice until the nineteen twenties. Instead, the form of organization and the quality of executives had to be the kind to meet emergencies as they arose. Planning in the factory changed from a production schedule based on orders to a schedule based on demand or prospective business. Accurate and detailed planning of sales effort began after improved planning practices for manufacturing were started. In addition, a plan for the whole organization, called the master plan or budget, became popular. Although budgets had been known for many years, the publication of *Budgetary Control* in 1922 by J. O. McKinsey caused their use to expand more rapidly than any other management device. It was estimated that 80 per cent of the companies that had budgets in 1929 had started their budgetary practices after 1921.

6. Forecasting services were many and varied. However, there was a question concerning the value and reliability of the forecasts and the methods of forecasting. Regardless of the questionable results of forecasting, its use developed the desire of managers to look ahead. Forecasting contributed to the guidance of general management and also to departmental budgeting, production planning, research, and the longer-range planning of capital expenditures.

Practices prevalent in the management of manufacturing during the nineteen twenties were:

1. A purchasing department with purchasing records was characteristic of most manufacturing companies. The purchasing function was always in close contact with manufacturing, but seldom subordinate to it.
2. An increase in the interest in and the concentration on inventory control resulted from the material shortages of World War I, and the excess of materials during the 1921 depression. Increased emphasis on planning and budgeting practices added to the interest shown in inventory control. One of the dramatic developments during 1928-29 was the ability of some automobile plants to reduce the average inventory to a three or four days' supply from a several months' supply.

3. Complete production planning included the routing of an order through a plant, the scheduling of the time required for each operation, and the dispatching of orders to the production agent for the next work to be done. Production planning was a staff function in the majority of plants.

4. After the publication of *Waste in Industry* in 1921, the subject of standards received increased interest and attention. Quality standards of materials were necessary for the use of automatic machines and incentive wage systems for workers. Maintenance standards for machinery, although essential for mass production, did not receive the same degree of attention as quality standards. It was common practice to have some kind of quantity standards and to work toward the continuous improvement of them.

5. The management of labor or personnel management received recognition because of the need during World War I to recruit large numbers of workers, train them, and hold them as a stable work force. Selection, placement, records, transfers, separations, and medical service were considered routine activities of personnel management. Psychological and trade tests for selection and placement were used during the war. During the 1921 depression, they were abandoned. Interest in training was aroused during the war.
A high-wage doctrine was popular by 1926; consequently, equitable incentive wage plans were receiving the attention of personnel and operating executives. The difficult problems of personnel management concerned the workers' need for security, and included regularization of employment, accident prevention, pensions, savings plans, and insurance plans. Employee representation plans had an uncertain future.

During the twenties, marketing and the creation of demand for products increased in importance and caused a widespread interest in marketing methods and marketing management. As early as 1920, articles about better marketing practices began to appear in the Taylor Society Bulletin and the Harvard Business Review.

The areas of management of marketing that caught the attention of business managers were:

1. The training of salesmen and the attempts to realize increased sales through better salesmanship, an analytical study of sales quotas, and the planning of sales territories.

2. Merchandising methods to support the invention and introduction of new consumers' goods involved techniques for a closer co-ordination among designing, engineering, manufacturing, and sales. Merchandising included the elimination and standardization of parts and items. The concept of simplification became established for marketing and manufacturing.

3. Department store managers gave most of their attention to the procurement of goods and the maintenance of qualified personnel after the war. Interest in stock control increased during the 1920-21 depression. During the nineteen twenties, there was a decided trend toward great
functionalization in department store organization. Departments were subdivided and buyers were given control over more limited and specialized lines. There was also a tendency to introduce new functional activities that required specialists such as color experts, traffic managers, display specialists, and stylists. Personnel work in department stores passed through the same developments as in manufacturing.

4. Chain store systems experienced a rapid growth, with resulting increases in the functionalization of work. Inventory control, accounting, window display, local advertising, store location, and store management comprised the earliest specialization for functionalization in organization. Purchasing was the first function to be subdivided.

According to Henry S. Dennison in the summary of his report in *Recent Economic Changes*, "the art of management, in almost all its aspects and activities, turned a corner in 1921." Whereas sheer power and drive could compete favorably with finesse in the work of management during the first twenty years of the twentieth century, the trend was definitely toward skillful understandings of successful management practices and concepts.

The following quotation from the management chapter in *Recent Economic Changes* gives a concise description of the management climate and situation during the nineteen twenties as conceived by a competent observer and authority.

All managers, however, did not turn the corner in 1921. A reorganization of thought has had first to be brought about. Under

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the new charter, to manage is not a vested right but the exercise of a special skill which, through temperament or through training, some have and some have not. An English article expresses it strongly:

'Nothing is more characteristic of modern business than the way in which control based on power and ownership is giving place to authority based on knowledge, qualifications, and skill. Management is no longer a preserve of the owners of capital, nor is it an hereditary right. Men of ability, without capital or family ties to assist them, are breaking into the hereditary ranks. Industrial conditions are in their favor . . . . The leveling forces of Nature have been at work, producing the average except in cases where systematic selection has been exercised. But the average man is not equal to the strain of a day when conditions are uncertain, when business is growing more complex, and when nothing but competent administration can enable a firm to survive.'

To cope with the growing complexities, the manager type, through slow processes akin to natural selection, is changing. More men are being brought within managerial responsibilities, and the co-ordinated group, each member of which has his own share in the total of responsibilities, is replacing the absolute 'big boss.' To release and utilize all the creative and managerial abilities which any of their members may possess or develop is the definite goal of organization. There is today not only more production per man, more wages per man, and more horsepower per man, but more management per man as well.

Reinforcing all the other influences which are pressing toward higher grade management is the present prevailing doctrine of high wages. Management is the planning and directing of human efforts, and the more one has to pay for these efforts, the more worth while is high grade direction. So long, then, as that doctrine prevails, it will continue to be a powerful influence toward progress in management. There are as yet no signs of its weakening.

The foundations of experience upon which management is built are broadening. No matter how rich it may be, the experience of one man or even of one company is seldom broad enough today. Associations, periodicals, committees, luncheons are all antennae through which companies become sensitive to current progress. To no small degree it is co-operative thinking which is to be credited with the present state of American prosperity. Freer and freer exchange of information, constantly improving lines of communication,
are keeping the body of the American business army marching behind its pioneers. 21

During the decade following 1920, there was great progress in the improvement of management practices and techniques in American industry. This progress was stimulated and furthered by the foundations of management thought laid by the pioneers in the field prior to 1920, and by the contributions to management thought during the post-World War I period. Improved management practices were preceded by the increased desire for knowledge, proficiencies, and attitudes of business managers to achieve certain desired results through a more efficient and effective utilization of workers and resources in industrial enterprises. Progress in improved management practices developed along with programs of effective management education provided by professional management societies and courses of instruction in schools of commerce and engineering.

During the twenties, the management literature for more enlightened management education was produced by college professors and practitioners. College textbooks were required for college courses. Specialised books on subjects of management philosophy, practices, and techniques contributed to more scientific thinking of operating executives. Articles in professional management journals advanced the thinking of business managers about better ways and means to realize their general or specific goals. Management education followed an evolutionary rather than a revolutionary course. Before business managers started to employ more efficient and

21 Recent Economic Changes, op. cit., p. 545.
economical management practices, they first had to conceive, understand, and believe in the results that could be obtained from them.

Credit should be given to those who contributed to advanced management thought and practices during the decade of the nineteen twenties. Although the nature of the contributions to management thought and education varied as to type and subject matter, all of them had some influence on later management philosophy and practices.

As mentioned earlier, serious interest developed around the content of management courses in the schools in the early nineteen twenties. Such interest would naturally stimulate the preparation of appropriate college textbooks. At the first meeting of the teachers of management in 1924, there was general agreement on the value of a college course in industrial organization and management. In the 1921 report on Waste in Industry, the recommendations to management for the elimination of waste in industry centered around the management practices treated in a course in industrial organization and management. Consequently, it is not surprising to note that the popular college textbooks written shortly after either or both of those events were on that subject.

TEXTBOOKS FOR COURSES IN MANAGEMENT

Four significant textbooks prepared for use in college courses in Industrial Organization and Management during the nineteen twenties were Industrial Management by Richard H. Lansburgh in 1923; Business Organization and Management by Henry P. Dutton in 1925; The Principles of Factory
Organisation and Management by Ralph C. Davis in 1928; and Industrial Organisation and Management by William B. Cornell in 1928. Those textbooks, along with the 1919 and 1925 revised editions of Principles of Industrial Organisation by Dexter S. Kimball, served as the basis for management education in the majority of the schools for the general or introductory courses in management. The management concepts and philosophies of thousands of future business managers were influenced by the contents of these college textbooks. All of these textbooks were oriented around manufacturing and production, with the exception of Dutton's, which had an approach similar to later introduction to business books. Hugo Dieser, Webster Robinson and Erwin Schell also wrote textbooks that achieved some recognition.

Richard H. Lansburgh

Industrial Management by Richard H. Lansburgh consisted of eight parts: Part I described the historical background of management and the management movement; Part II presented the fundamentals of organisation; Part III discussed and illustrated the plant and working conditions; Part IV dealt with standardization of the product, materials, equipment, and performance; Part V presented the techniques of job study, time and motion studies, and the setting of standard performance; Part VI described and illustrated various wage systems; Part VII explained the practices of personnel relations and the functions of personnel management; and Part VIII gave a detailed presentation of controlling operations, including the areas of budgeting, sales, inventory control, purchasing, production control, and cost control.

Lansburgh began his book with the concept that "Management, the unseen force which drives all that is physical within a factory, is by far the most important factor of the present industrial age." He considered management as a broad term that covered all the factors in the operation of an enterprise. For him, management involved all the elements in the control of business activities; it correlated all of the details of operation of an enterprise so that work as a harmonious whole toward the desired goal could be realized.

According to Lansburgh, "the goals of various enterprises may differ; but in the main, the goal of all manufacturing enterprises is the same—profits in greatest possible amount to the owners of the business." Although he discussed the modification of business goals by citing the statements of some manufacturers that they desired to pay living wages, savings wages, or high wages to provide consumer purchasing power, the conclusion was drawn that a business which does not make a profit cannot long survive. There is little doubt about his point of view concerning the goal of business when one reads this statement:

Business is organized for profit, and management methods that do not take this into account have proved of little value. Except in unusual circumstances, a manufacturing plant is not a laboratory for the trying out of certain management theories. Therefore, the first step that an executive takes in considering a management move is to ask, 'Is it profitable?' or 'Can it be made profitable?'

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23 Ibid., p. 1.
24 Ibid., p. 4.
25 Ibid., p. 4.
Lansburgh divided the field of management into three broad subdivisions: (1) "the establishment of major policies; (2) the planning for, and the setting up of, an organization to carry out these policies; and (3) the operation of the enterprise through this organization." He considered reorganization work to be subdivisions of the three areas listed above. He believed that management effort called for the utilization of different types of effort, such as creative abilities to establish policies or plan for an effective organization in contrast with executive ability to operate a plant.

Although the establishment of major policies was given as one of three broad subdivisions in management, no treatment was given to this subject in the book. After a description of the historical background of industrial management and the management movement, Lansburgh introduced the subject of organization. He contended that operation and operating methods depend entirely on the organization that has been built up. Organization to him meant the structure of the enterprise, especially from the standpoint of the development of the duties and the functions of the parts of the enterprise. To him, the primary fundamentals of organization were (1) regard for the aim of the enterprise; (2) the establishment of definite lines of supervision; (3) the placing of fixed responsibility; and (4) regard for the personal equation. In addition to the primary fundamentals, he advanced four operating fundamentals of organization: (1) the development of an adequate system or method of work; (2) the establishment of adequate records; (3) the laying down of proper operating

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26 Lansburgh, op. cit., p. 4.
rules and regulations; and (4) the exercise of executive leadership. The purpose of the operating fundamentals of management was to lay the groundwork for the third subdivision of the enterprise, which was that of operating the enterprise. The major portion of the Lansburgh textbook dealt, in a descriptive manner, with operating the enterprise. Numerous illustrations and examples of methods, practices, and procedures were given.

In summary, Lansburgh wrote that business is organised for profit and that the goal of all manufacturing enterprises is profits in the greatest possible amount to the owners of the business. Management for him consisted of (1) the establishment of major policies; (2) the planning for, and the setting up of, an organisation to carry out these policies; and (3) the operation of an enterprise through this organisation. Planning and control activities were described in the area of operation. The following quotation from Lansburgh provides some information of the development of management education.

In 1915 there were not five courses in management given in American Universities. Today practically every business and engineering school in the United States is offering courses in management. While this extremely rapid growth of management instruction has been in response to the demand from industry, yet in many cases it has led to demand, and has, through its graduates, called the attention of industry to the strides that have been made in management in other sections of the United States. This must be put down as one of the most important developments in management in recent years.27

Henry P. Dutton

Business Organisation and Management by Henry P. Dutton28 was written from the viewpoint of procedure rather than organisation theory.

27Lansburgh, op. cit., p. 29.

28H. P. Dutton had written Factory Management in 1924. It dealt with the area of manufacturing and was similar in content to the textbooks by Lansburgh, Davis, and Cornell.
He stated that:

The application of scientific management and of the scientific method to business in recent years has emphasized the extent to which one fundamental body of principles and methods of action underlies the successful conduct of business, and, indeed, in a broader sense, of all human activities.

Individual businesses of various sorts meet on another common ground, that of similarity of procedure. Problems of finance, of selling, and of production occur in some form in practically every business, and there is an established procedure or technique which is largely common to all. The principles which underlie purchasing, production control, or employment methods apply with little variation in all businesses.29

Dutton had the intent of showing the relations of business to society and of outlining the typical activities of the departments of a business with their relationships to each other and to the business as a whole. He departed from the viewpoint of orienting management concepts and practices solely around the production function and manufacturing. He established a broader basis for management philosophy by integrating the typical activities of a business into a balanced business firm and then illustrating that management procedures and fundamentals were common to all of the activities of a business. Dutton stated that the purpose of his book was:

... to undertake a description, as systematic as may be, of the various departments and activities such as finance, buying and selling, credit management, and production control which are met in some form in all businesses, to show these activities in relationship to each other, and to visualize as clearly as possible the work of management as an ensemble and correlation of the various factors of finance, selling, and production.30

30Ibid., p. 4.
The three primary functions of a manufacturing business as conceived by Dutton were production, distribution, and administration. Production and distribution were functions of performance. Administration was the planning and facilitating function which overlapped production and distribution activities. He acknowledged the influence of Church on his concept of production, which he subdivided into the elements of design, supply, control, and operation. He described distribution as the activities of selling, credit and collections, and delivery. He treated financial activities and financial management as a separate area from production, distribution, and administration, and did not integrate financing into the management activities of a business. He described the procedures of accounting, credits and collections, insurance and financial institutions. However, his concept of management centered around the production and distribution of goods and services through administration.

Although Dutton isolated the function of administration from the operating activities of a business, he did not present a clear description of what it involved. He emphasized policies and general plans in the administration area, and described control as detailed administration that brought design, materials, and men into an operating situation for production. Organization, like finance, was described as an area separate from administration. His concept of planning embraced the scientific method and decision-making. To him, decision was the key to the task of planning, which brought about the gathering of information, decision, dispatching, performance, and follow-up. The conception and accomplishment of any purpose necessitated the following steps: (1) securing of information;
decision; and (3) execution. His concept of planning centered around the activities of production planning and production control, in spite of his attempt to show the application of planning to all activities of a business.

To Dutton, business as an organization involved primarily problems of structure, the relationship of owners to the business, and the relationships of employees to the owners and managers. His treatment of organization was conventional and descriptive.

In summary, Dutton held that the task of the businessman and the executive is "that of organizing and directing the productive efforts of other men so that these are employed to a maximum advantage." The typical activities of business were described as production, distribution, and administration. Administration involved mainly policy formation and planning, although "detailed administration" covered the activities of control. Organization was treated separately from administration. Although Dutton's philosophy of management was fuzzy concerning the integration of all functions of management, he did make a significant contribution to management thought and management education by his attempt to differentiate administration as a function separate from the activities of a business. His attempt to illustrate the universality of management fundamentals and procedures to different types of businesses and different kinds of business activities broadened the concept of management. The later textbooks for "introduction to business courses" followed the pattern of his book.

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31 Dutton, op. cit., p. 4.
Ralph C. Davis

The Principles of Factory Organisation and Management by Ralph C. Davis (1928) was written for the use of students of industrial management and junior executives. The fundamental functions and principles of factory organisation and management and their relationships to one another were presented with the viewpoint that they were universal in their application to the field of factory management. The areas of distribution and finance were mentioned only as they related to factory management.

Davis presented and illustrated the managerial problems in the areas of plant location, plant equipment, lighting, heating, and ventilation. He integrated the general functions of the industrial organisation. He then treated the various activities essential to manufacturing such as engineering, production control, quality control, production standards, maintenance control, purchasing, material control, the personnel organisation and its related functions, office management, and cost control. Davis made a contribution to management education by providing students and junior manufacturing executives with a well-illustrated textbook presentation of advanced management practices in production and the important trends in modern management. His book served very well to develop and further educational interest in the college courses in industrial organisation and management.


33 Davis changed the title of his book to Industrial Organisation and Management at the time of the 1940 revision.
Two chapters in the Davis book contributed to later management philosophy and thought, viz., the chapters on organization and system. Davis advocated a clear distinction between organization and system. He conceived of organization as the machine of management and of system as the tool with which management continuously achieves results. Organization, as defined by Davis, was:

... a group of persons cooperating to a common end. In industry it refers to the relations of one component group of the personnel to another with regard to the proper functioning of the whole in the operation of the system. When certain departments are set up for the administration of certain management functions and lines of authority for their control are determined, organization is developed.34

In the development of an organization, Davis emphasized the need for regarding the following: (1) the fundamental functions to be performed and their relationship to one another; (2) the proper division of responsibility; (3) the definite location of responsibility; (4) the proper functioning of the system; (5) the flexibility of the organization; (6) provision for future growth; (7) personal characteristics and abilities; (8) the creation of an ideal; and (9) the quality of the leadership. He warned that failure to develop the organization with regard to functional relationships usually resulted in an illogical growth of organization units. The conventional types of organization were used as illustrations and included descriptions of line, line and staff, functional, departmental, and committee forms of organization.

34 Davis, op. cit., p. 41.
System, according to Davis, "is the normal routine by which the operations of the business are carried on and controlled. When methods are developed which will enable one at anytime to know how much of a given item of material is available for future orders, a system has been developed." He thought of system as a management tool for achieving results within the organization, and advocated that, as far as possible, the system should be the result of a steady, homogeneous growth of routine, developed through the consistent application of methods of scientific analysis. The development of system involved consideration of (1) control through sound policies; (2) regard for the proper performance of control functions; (3) the development of standards; (4) the use of definite written instructions; (5) the training of the organization; (6) the development of an adequate system of reports; (7) the development of records; (8) provision for proper administrative and executive control; and (9) the provision of adequate incentives.

In the chapter on system, Davis included most of the subject which later emerged into the functions of management and his basic business factors. He stated that "the field of administration includes the making of policies, the general guidance of the organization, the determination of its results as a whole, the placing of responsibility for such results, and the granting of proper rewards for accomplishment." Administration included the areas of objectives or purpose, policy formulation, and

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35 Davis, op. cit., p. 41.
36 Davis, op. cit., p. 74.
37 Davis, op. cit., p. 82.
general plans. Davis wrote that "the field of management has to do with the guidance and control of the organization in the performance of its various functions." Management included the areas of detailed plans, procedures, preparation, and performance. Administration and management were related through programs and projects. Both administration and management, as subject areas for definition, were introduced under the caption of proper administrative and executive control and supervision. In later publications, Davis used the terms "administrative management" and "operative management" for similar concepts.

Control was defined as "the instruction and guidance of the organization and the direction and regulation of its activities." Control encompassed the four fundamental steps of (1) the predetermination of reasonable accomplishment; (2) the issuance of definite and complete written instructions; (3) the analysis of reports and the comparison of actual and predetermined accomplishments to determine the causes of variations; and (4) the recognition of responsibility for final results. In dealing with production control, Davis stated:

In addition to the considerations underlying the development of good organization and system, there are certain fundamental principles of management which directly affect the control of production. The following statement of these principles is either taken directly or adapted from a statement by Mr. L. P. Alford.

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38 Davis, op. cit., p. 82.
39 Davis, op. cit., p. 84.
40 Davis, op. cit., p. 108.
A listing follows, which is either a direct or an adapted statement of L. P. Alford's paper, "Laws of Manufacturing Management," presented in 1926 to the American Society of Mechanical Engineers. The names of the Laws of Manufacturing Management were:

1. The Law of Simplification or Specialisation of Product
2. The Law of Standardisation
3. The Laws of Economic Production
4. The Laws of Mass Production
5. The Law of Production Control
6. The Law of Planning
7. The Law of Quality Control
8. The Law of Economic Lot Size
9. The Law of Material Control
10. The Law of Operating Standards

In summary, Davis advanced the ideas that administration involved the determination of purpose, policy formulation, and general plans while management dealt with the guidance and control of the organization in the performance of its various functions. Programs and projects related administration and management. Organization served as the machine of management. System made up the tool of management for the continuous achievement of results. Under the subject of system, Davis covered the areas that later evolved as functions of management and his "basic business factors." With regard to the objectives of management, he stated that "The work of management consists of the determination of policies, the
development of methods, the building of organisations, and the operation of these organisations for the economic production and distribution of goods and services. 41

William B. Cornell

*Industrial Organisation and Management* by William B. Cornell was written about the fundamental principles and practice of organisation and management. 42 Cornell wrote that "regardless of whether a business is large or small, industrial or commercial, there are certain elements which are essential to its operation. Chief among these is the proper application of the basic principles of organisation and management." 43 He was one of the first contributors to management literature who actually formulated principles of organisation and principles of manage- ment. He also recognized the executive function in business. His text­book contained chapters on executives, principles or organisation, types of organisation, and management before entering upon the conventional descriptions and illustrations of plant requirements concerning location, layout, types of construction, light, heat, ventilation, power, equipment, labor, and supervision. Discussion was also given to the activities of each major department of an industrial concern such as Sales, Engineering, Manufacturing, Purchasing, Industrial Relations, and Controllers Departments. The areas of production control and time study were covered in considerable detail.

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41 *Davis, op. cit.*, p. 10.


According to Cornell, "The word executive includes more than the
general manager and the various department heads. An executive is anyone
who is responsible for the direction and control of others and for the
execution of the work performed by them." He summarized executive work
as that of leadership and the co-ordination of activities. His concept
of executive work was similar to later concepts of management as a process
for achieving desired results.

Cornell conceived of organization as:

... the building and developing element, the structural
element; and management as the directing, controlling, and
coordinating element. Organization means the structure or
form of an enterprise and the arrangement of all parts thereof
in a suitable manner for use or service. It further includes
laying out the scope and functions of all parts, selecting
the proper individuals to carry on the work and determining
their duties, together with their relationships and contacts
with one another.

He stated that certain underlying principles of organization can be
given as guides to good organization. His principles of organization
were listed as follows.

1. First Principle—A thorough study should be made of the
product to be manufactured, or the merchandise or service to be
sold, the market and channels of distribution, the housing, the
machinery and equipment required, the labor, supervision,
management and all other requirements.

2. Second Principle—The organization should be built around
the main functions of the business and not around an individual
or group of individuals.

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44 Cornell, Industrial Organisation and Management, op. cit., p. 10.
3. Third Principle—The departments, divisions, and subdivisions of the enterprise and their functions should be clearly defined. The details of each department and its divisions should be logically and carefully co-ordinated so that each step of the work can be carried out to the best advantage in the shortest possible time.

4. Fourth Principle—There should be centralized executive control.

5. Fifth Principle—The personnel should be carefully selected.

In the application of the above principles in a going concern, Cornell warned that conditions will exist which can prevent the realization of an ideal organization. Company politics, incumbent personnel, traditions, or the influence of certain executives must be considered and provision made for them. The conventional types of organization were illustrated and discussed after the presentation of the principles of organization. These types included the line, line and staff, and functional. Cornell reworked and revised his principles of organization in subsequent revisions of his book at which time he gave names to the principles instead of numbers.

Cornell contended that organization and management were separate but interrelated. He believed that the object of organization was to develop a properly functionalized business structure. The work of management, he stated, "is to direct, control the operation of and weave together the various parts of the organization so that all factors will function properly and all persons cooperate—that is, work together economically and efficiently for a common good." Cornell advanced the idea that a manager must have organizing ability to be successful. Although he separated organization and management, his discussions led to the

47 Cornell, Industrial Organization and Management, op. cit., p. 43.
conclusion that management involved the functions of directing, organising, controlling. He also included system under the heading of management. System was considered to be one of the most valuable mechanisms or aids of management. System was described as a planned method of procedure, or the introduction of order and method wherever applicable. The difference between systematic management and scientific management was described and discussed. Most of the text materials concerning management dealt with a presentation of the methods of science or scientific management in business. (Cornell's principles of management were not formulated for the first edition of his book.)

*Business Organization* by Cornell, published in 1930, contained the first listing of the principles of management. This book by Cornell was mainly a revised digest of his *Industrial Organization and Management* text. It was prepared for correspondence course work in management in the Modern Business Course and Service of the Alexander Hamilton Institute. In his *Business Organization* textbook, Cornell stated that "the object of any business is to make a profit. This requires that the best possible article be produced at the lowest possible cost so that it may be placed within reach of the greatest number of persons at a price which will assure a fair profit." The point was emphasized that the first essential of a successful enterprise consisted of a useful article for manufacture or for sale. A principle of the objective was added to the principles

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of organization. It was stated as "prerequisite to the starting of any
business enterprise, or to the carrying on of any activity by the concern
as a whole or by any unit of it, a clear and complete statement must be
made of the objectives in view."\footnote{Cornell, Business Organisation, op. cit., p. 195.}

Cornell's first presentation of principles of management appeared
in the management chapter of the Business Organisation book. They were
included in the revision of his first book, which was retitled Organization
and Management when it was revised in 1936. Although some fundamentals of
management had been elaborated upon previously by authorities such as
Henri Fayol and L. P. Alford, it was Cornell who summarized their contribu-
tions towards the development of a body of management principles to be
applied in the conduct of business. The principles of management as stated
by Cornell were:

1. The Principle of Policy Making. Definite clear cut policies
are essential to effective management.

2. The Principle of Improvement and Adjustment. To be
successful a business must advance; it cannot remain dormant.

3. The Principle of Balance. To insure proper development of
a business, and high efficiency and low cost in its operation, a
company must be well balanced internally.

4. The Principle of Relationship of Task and Accomplishment.
A person works best and accomplishes most when he is given a
definite job to be completed in a given time, the work being of a
nature for which he is mentally and physically suited and of
sufficient difficulty of performance to demand the best that is
within him.

5. The Principle of Individual Effectiveness. Individual
effectiveness is increased through training and improved working
conditions.
6. The Principle of Simplicity. All elements which are not essential to successful operation should be eliminated and all those retained should be reduced to their simplest form.

7. The Principle of Specialization. Scientific distribution of work results in specialization of effort and specialization of task with the resultant advantages derived from concentration.

8. The Principle of Standardization. Whenever practicable best practice should be determined, expressed in terms of definite units or standards and adopted as a pattern for use in operation or performance and in planning and control.

9. The Principle of Financial Incentives. Remuneration should be in direct proportion to the value of the accomplishment.

10. The Principle of Planning. In order to satisfactorily accomplish anything of importance, there must be planning in advance of doing.

11. The Principle of Control. Planning is of little value unless there is subsequent control to make certain that the plans are carried out.

12. The Principle of Cooperation. The effort of two or more individuals working as a unit toward a common goal is greater than the sum of the effort of the individuals working as individuals.

13. The Principle of Leadership. Wise leadership is the most important single factor in successful operation.

14. The Principle of Responsibility and Authority. A person exercising authority should be held responsible for the carrying on of all activities within the scope of his authority.

15. The Principle of Decision. Decisions should be based upon accurate information.

16. The Principle of Utilization of Executive Ability. Executive ability can be utilized fully only when the executive is relieved of all matters that can be reduced to a routine, when standards of performance are set up and definite plans made and the executive devotes his attention only to variations which are materially good or bad, to further planning, and to those matters which cannot be made a matter of routine.51

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In summary, Cornell introduced the idea that the activities of manufacturing and the related departments or areas of a business had problems that could be solved by executives who considered and applied basic principles of organization and principles of management. He formulated and listed such principles, which he proceeded to apply to the conduct of activities and the solution of problems in the operating areas of business such as sales, engineering, manufacturing, and industrial relations. He treated organization and management as separate but interwoven areas for the work of executives which involved leadership and co-ordination. Organization had the object of developing a properly functionalized business structure. Management consisted of directing and controlling the operation of the various parts of the organization to achieve economical and efficient performance for the common good. Organizing was merely mentioned as an activity of a manager. System was considered as a mechanism of aid to management. Cornell contributed to management education a textbook which permitted descriptions and illustrations of industrial activities with a stated set of principles which could be applied to various kinds of business and departmental operations. His treatment of organization and management gave a preview of the management approach and concepts of the principles of management textbooks which appeared twenty-five years later. His explanation of executive work which involved directing, organizing, and controlling was close to the later concepts of distinct functions of management.
Hugo Diemer

_Industrial Organization and Management_ by Hugo Diemer was written for use in correspondence study courses in management. Diemer began his book with a presentation of the principles of organization, in which he differentiated among the subjects of organization, administration, and control.

Diemer said that organization:

... determines the scope and limits of activity of each individual or group of individuals in a business or industrial undertaking, together with their relations and connections with one another. Organization is the chief source of power in large corporations. It means that the experience, technical skill, tact, and abilities of all kinds of carefully selected men are directed in such a manner as to be most effective in the interests of the business.

He illustrated and described the conventional forms or types of organization, viz., line, line and staff, functional, and committee. His classification of industries for purposes of organization were producing, transporting, financing, and distributing.

Diemer conceived of management as the carrying out or the executing of the laws of the organization. He stated that "The act of managing or directing an organization is designated by the term 'administration.' The term is synonymous with management." Management was described as an art involving the knowledge and delicate treatment of human characteristics, prejudices, and affiliations of the individuals and groups composing

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52 Hugo Diemer, _Industrial Organization and Management_ (Chicago: LaSalle Extension University, 1921). Other significant books in management were published for correspondence study by the Alexander Hamilton Institute such as _Business Organization_ by William B. Cornell and _Factory Management_ by John B. Bangs.


54 Diemer, _op. cit._, p. 2.
the organization. Management served to bring all of the individuals into harmonious relationships and subservience to the laws of the organization.

The term control was used to designate "the methods by which the executive or managing heads of a business carry out their authority to regulate its affairs in accordance with the laws of the organization." He divided control into line control, line and staff control, functional control, and committee control. His types of control corresponded with the forms of organization described.

System was explained in relation to organization and management. It pertained to the methods by which the purposes of the organization are carried out in an orderly way. He wrote that "we organise to manage, and we manage largely through system."

After establishing the concepts of organization, administration, and control, Dimmer devoted the remainder of his book to descriptions and illustrations of business activities concerning industry location, manufacturing, buying, materials receiving and storing, costs, standardization, accounting, time and motion studies, wage systems, welfare work, employment, and reports to executives. A special chapter was devoted to planning, which recognised planning as a feature of management instead of a function. Planning activities were described as forecasting, shaping policies to make them coincide with the wishes of the directors, and the devising of improved methods. Examples of planning were shown for each of the

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56 Dimmer, op. cit., p. 11.
activities of a business; the planning of production, however, was the only activity treated in detail. Planning was explained as giving consideration to the following: (1) what work is to be done; (2) what materials are required; (3) where the work is to be done; (4) how the work is to be done, and (5) how long the work will take and when it shall be done.

In summary, Diemer wrote that the activities of a business are accomplished by organization, management, and control through system. Planning was a feature of management rather than a recognised function.

During the decade of the twenties, the textbooks prepared for industrial organization and management courses in colleges of commerce, schools of engineering, and correspondence study institutes followed a similar pattern of thought and presentation. Organization was described as the machine of management. System was described as the methods or routine through which management achieved the work of the organization. Management accomplished the ends of the organization through system by means of executive control or direction. After short presentations of organization fundamentals, types of organization, and system, the major content of the textbooks was concerned with descriptions or illustrations of the routines or methods used in the system for the various departments or activities of a business. Although the authors searched and strained

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57 Hugo Diemer wrote in 1927 a book entitled Foremanship Training. It was written for executives who had the responsibility for foremanship training, and explained both the need for foremanship training and the methods for training foremen, including the conference method so much in use a quarter of a century later. He had previously (1925) written Factory Organization and Administration. Both books were published by McGraw-Hill Book Co.
for basic fundamentals or principles of organization and management that could be applied generally to all businesses and departments of business, they actually described the operating routines, procedures, or systems as they were being practiced. Emphasis seemed to be on the perfection of techniques, and there was a general confusion concerning terminology and the job of management or administration. Two significant textbooks deviated from the popular and accepted ones in content and approach to the nature of organization and management. They were *Fundamentals of Business Organization* by Webster Robinson and *The Technique of Executive Control* by Erwin H. Schell.

**Webster Robinson**

*Fundamentals of Business Organization* by Webster Robinson proposed to show that "regardless of the size or character of a business there are certain basic factors and relationships which are essential for its organization." The fundamental factors and relationships of organization were formulated with reference to their general applicability, along with descriptions of the methods to be used in putting them into practice. Emphasis was given to the fundamentals of organization instead of system or routine procedures. The author stated that his intent in writing the book was to respond to the need for a more thorough consideration of business organization and its problems in the colleges of commerce and

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Robinson formulated eight fundamentals of business organization and explained them in eight chapters of his book. They included: (1) definite and stable policies; (2) functionalisation; (3) the right man in the right place; (4) direction; (5) supervision; (6) control; (7) delegation and co-ordination of authority and responsibility; and (8) incentive. With the exception of the subject of business objectives, his treatment of organization approached many of the management concepts prevalent a quarter of a century later—which indicates that his fundamentals were fundamental.

Robinson's first fundamental of business organization prescribed the importance of definite and stable policies. He defined a policy as "an accurately determined directive control which is based on definite and adequate knowledge and which designates the aims of the business and the approximate methods to be used in their accomplishment."59 His concept of policies embraced the objectives of a business and the formulation of business plans. He stated that "policies are fact-founded directives and controls, and should furnish not only a definite goal for the business, but also a definite plan for reaching that goal."60 Policies were classified into three types, viz., general, major, and departmental.

60 Robinson, op. cit., p. 2.
A general policy, as conceived by Robinson, included a definite statement of the ideal which acted as the animating force in the business. He described an ideal as a "big idea" which served as the root of every successful business and which provided the motivating force for its establishment and subsequent growth. In addition to stating the ideal, a general policy also included the principles that guided the management in the conduct of the business together with a statement of the purpose of the business, what the business was doing currently, and what the business planned to do in the future. The principles outlined the standards of conduct to which the business adhered in its operation. The purpose consisted of a statement of the real aim or the real reason for the existence of the business.

Robinson made a point of the following concept of purpose: "The statement that, 'we are in business to make a profit' means nothing. The kind of service that is to be rendered and the class of people to whom it is to be rendered are the important factors." He had an advanced concept of the importance of business objectives, which he considered as a part of general policies along with plans for realizing the objectives. Later authorities separated from general policies the areas of objectives and the planning process. Robinson, however, recognized their importance and described them.

Major policies were divided into internal and external policies. Internal policies dealt with the production of the commodity and were related to finance, production, purchasing, personnel et cetera. External

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61 Robinson, op. cit., p. 6.
policies were related to the elements of distribution such as sales, prices, advertising, collections, and credit.

Departmental policies designated the way in which the organization segregated and combined its functions as well as the methods and systems used to carry out the functions. They pertained to one department only but were required to be in harmony with the major and general policies.

Functionalization provided the basis for the second fundamental. Robinson defined functionalization as "that fundamental of organization which requires that all the proper functions of a business be recognized, granted existence, combined where similar or complementary, and placed under the direction, supervision, and control of properly qualified executives who have only one, or at most but a few, similar functions to perform."\(^62\) Functionalization meant the analysis, the subdivision, and the grouping of the logical and necessary units of activity of an organization so as to secure, by decentralised specialization, the greatest results from individual and combined effort. Functionalization assured that each separate function of a business would be clearly recognised and assigned to an individual for its performance. Robinson considered functionalization the cornerstone of scientific organization—many later authorities agreed with him.

Robinson described the process of functionalization as starting with the definite separation of administrative, executive, and staff functions. The administrative functions were those which dealt with the legislative

\(^62\)Robinson, op. cit., p. 36.
and judicial branches of the organization. They were performed by the board of directors, the president, or the managing director. The executive functions included the enforcement of the legislative and judicial edicts of the administrators. The staff functions involved the scientific advising of those responsible for making important decisions. Functionalization was described as a principle in the following terms: "The idea is first to determine the functions of the business, and then to find men who can fit them." (Cornell stated this principle of functionalization as his second principle of organization three years later in his 1928 edition of *Industrial Organization and Management*.)

Robinson gave the following reasons for the necessity for functionalization:

1. To facilitate large-scale organization
2. To get maximum results from division of labor through specialization of efforts and tasks
3. To make possible the issuance of definite written instructions
4. To provide a basis for the establishment of standards of performance
5. To maintain stability and balance in the organization
6. To give flexibility to the organization structure
7. To provide for a growing organization

A description of the steps in functionalization along with illustrations of functional and personnel organization charts were given in detail.

Many of Robinson's concepts concerning functionalization of organization appeared in the management literature of other authors in the nineteen thirties.

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63 Robinson, op. cit., p. 42.
The right man in the right place was the basis of the third fundamental. Robinson wrote that "it is an easy matter to decide that the right man should be put into the right place, but a difficult one to get him there." He commented that the necessity for matching the man and the job is a recognized fundamental in organizational analysis. Difficulties in following this fundamental involved individual and job differences. Individuals differed in physical skills, mental abilities, and educational qualifications. Jobs differed according to the structure of an organization. According to Robinson, functionalization was the most important factor in scientific selection and placement because job analysis was an outgrowth of it. His treatment of matching men and jobs covered job analysis, job specifications, interviews, physical examinations, psychological and trade tests, training, and vocational guidance.

Robinson held that the very existence of a business as well as its success depended upon direction, the fourth fundamental of organization. He defined direction thus:

The term 'direction' is definite in scope and significance. It includes all those factors which determine the type of action that the organization is to take. . . . All direction must originate with those who are in charge of the business, and in the last analysis, all the directive factors can be traced back to them or their subordinates.

He offered the criticism that "too much attention was given to doing,

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64 Robinson, op. cit., p. 95.
65 Robinson, op. cit., p. 108.
and too little to directive planning." 66 He further criticized those in charge of business for failing to direct the business toward definite objectives and to establish in advance clearly thought-out methods for reaching objectives. Under the subject of direction, he explained the necessity for decision-making and planning, and stressed the essentiality of a definite method for planning and decision-making by means of the scientific method. Direction was accomplished through policies, standard practices, scientific standards, written instructions, administrative and executive orders, and system. System was considered a factor of prime importance. Robinson believed that:

The ultimate success of direction, the effectiveness of all the directive factors, is to a great extent dependent upon the existence of system within the concern—upon the logical organization of detail so that it will flow smoothly in well cut channels, and will require attention only when a change is required or when some channel becomes obstructed. 67

He explained that system must be supplemented by planning which accompanies direction, and that system provides the medium through which planning is put into effect. Such emphasis on system by Robinson and others could have established the foundation for later mechanization and automation in business and industry.

Supervision, the fifth fundamental, constituted the indispensable complement of direction. The purpose of direction was realized through supervision. Direction supplied the motive force that stimulated into action all of the parts of the organization. Supervision served as a

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67 Ibid., p. 135.
governor and insured the application of the motive force of direction along predetermined lines.

Direction can plan the work; only supervision can insure its proper execution. Supervision is the factor which analyses and interprets direction, which sees that the policies, executive orders, standard practices, and written instructions are actually followed in operation.68

Supervision, according to Robinson, did not permit exact definition. It could become evident only after the organization began to function, but without supervision, the best methods would tend to die out. It was considered as the adjunct between direction and control. Robinson stated that "supervision must be exercised over every factor in the organization—over men, product, plant, and processes—and especially over the human element;"69 it could be either personal or impersonal and could be achieved by means of policies, standards, schedules of work, and written instructions.

Robinson conceived of control as the sixth fundamental of organization.67

Control involves the means of providing the manager and the executives of an organization with continuous, prompt, and accurate information concerning the efficiency of operation, what the business is doing, what it has done in the past, and what it can be expected to do in the future. A system of control collects the details of operation, segregates them, combines them, and classifies them into a form suitable for use.70

Control involved three principal elements—the forecasting of results, the recording of results, and the placement of responsibility for results. The

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68 Robinson, op. cit., p. 137.
69 Robinson, op. cit., p. 136.
70 Robinson, op. cit., p. 147.
control system was required first to establish the standard as a measure of the correctness of efficiency and then to record accurately all data concerning actual performance. Whenever standards of performance were estimated in the organization, the control system was expected to place responsibility for results. Robinson expected a control system to provide the means for the intelligent direction of decentralized execution, organization balance, predetermined profits, the detection of weak spots in operation, and an indication of the business trend.

Robinson's concept of the use of control to achieve the intelligent direction of executive execution was similar to the management philosophy of Alfred P. Sloan, Jr. who was credited with developing a unique philosophy concerning organization in the nineteen twenties. Harlow H. Curtice has stated the following with reference to Sloan's contribution:

When this General Motors philosophy was formulated in the early 1920's—and I might add that the credit for its formulation largely goes to one man, Alfred P. Sloan, Jr.—it was unique as applied to industry. That it is no longer unique is in itself evidence of its soundness.

The first element of this philosophy has to do with organizational structure, the second with our approach to problems. Both, of course, concern people — in fact, can only be put in practice by people. 71

After discussing the financial difficulties of General Motors in 1910 and 1920, Curtice said that, prior to 1921, no real concept of sound management existed in General Motors. He then credited Sloan with originating the concept of centralized policy control and decentralized

Even before the crisis of 1920 materialized, Mr. Sloan was very conscious of the need in General Motors for a new and clearly defined concept of management philosophy. He had observed that much time was being consumed in solving detailed administrative problems and in meeting the critical situations which were constantly arising. He recognized that too great a concentration of problems upon a small number of executives limited initiative, caused delay, increased expense, reduced efficiency and retarded development.

He realized that centralization, properly established, makes possible directional control, coordination, specialization, and resulting economies. He also realized that decentralization, properly established, develops initiative and responsibility; it makes possible a proper distribution of decisions at all levels of management, including the foreman—with resulting flexibility and cooperative effort, so necessary to a large-scale enterprise. His objective was to obtain the proper balance between these two apparently conflicting principles of centralization and decentralization in order to obtain the best elements of each in the combination. He concluded that, to achieve this balance so necessary for flexibility of operation, General Motors management should be established on a foundation of centralized policy and decentralized administration.

Mr. Sloan's concept of the management of a great industrial organization, expressed in his own words as he finally evolved it, is 'to divide it into as many parts as consistently as can be done, place in charge of each part the most capable executive that can be found, develop a system of coordination so that each part may strengthen and support each other part; thus not only welding all parts together in the common interests of a joint enterprise, but importantly developing ability and initiative through the instrumentalities of responsibility and ambition—developing men and giving them an opportunity to exercise their talents, both in their own interests as well as in that of the business.72

It appears that the basic thinking for organizational divisionalization that flourished in the nineteen fifties had its origin in the early nineteen twenties. Robinson was the first textbook author to mention the concept.

72 Curtice, op. cit., p. 8.
The Delegation and Co-ordination of Authority and Responsibility constituted the seventh fundamental of organization. Robinson stated that "over centralisation of authority and responsibility in the general manager is the principal factor contributing to the failure of many concerns." He explained that centralised execution existed mainly because of the force of tradition. He made a strong case for delegating authority and responsibility and advocated that they must be "coexistent" and "contemporary." Authority was defined as "the right to command that such orders as are issued be carried out; and the power to enforce their execution." Responsibility was defined as "being accountable for the performance of a duty, that is, being answerable for its discharge." Authority and responsibility were considered complementary. Neither one alone could result in the proper execution of work. Benefits from the delegation of authority with co-ordinate responsibility were listed as follows: (1) to secure executive cooperation; (2) to stimulate interest of workers; and (3) to provide a basis for measuring individual results. Functionalization was shown to be the means for the establishment of a logical plan for delegating authority and responsibility.

Incentive was presented as the eighth fundamental of business organization. Incentive was defined as "an impulse, a motive, a stimulus; that which incites or tends to incite to action." Morale was described as

73 Robinson, op. cit., p. 182.
74 Robinson, op. cit., p. 185.
75 Robinson, op. cit., p. 198.
the product of incentives. Robinson's treatment of incentives corresponded
to conventional writings on the subject of morale factors and the ways and
means to affect employee morale.

*Fundamentals of Business Organization* by Webster Robinson in 1923
was a significant and an important contribution to management thought. His
book was often quoted by other writers. His approach to business organisa-
tion and his concepts of management were followed by later authors in
textbooks, first entitled "Business Organization" and later named "Principles
of Management."

**Erwin H. Schell**

*The Technique of Executive Control* by Erwin H. Schell was intended
as a manual or guide to executive straight-thinking when it was published
in 1924. The author suggested that his book would stimulate new avenues
of reflection and aid in the building of an executive method best suited to
the unique capacities of each personality. Schell's contribution to manage-
ment thought involved concepts that were personal rather than organisational.
Whereas other books on management were written about organisation and
system, Schell wrote about the personal art of executive behavior and the
personal, mental, and emotional traits of executives. Both operating
executives and students found his concepts popular because they were about
people.

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76 Erwin H. Schell, *The Technique of Executive Control* (New York:
McGraw-Hill Book Co., 1924). Revised in 1926, 1930, 1934, 1942, and
1946.
Schall attempted to describe the task of the executive and resorted to a definition of Dr. Edward D. Jones for his purpose, which was "the means by which you provide in a group of men for harmony of mood, harmony of attitude, or the desire of all to accomplish the same thing. This is what we call cooperation, or the right mental attitude toward the project in hand." According to Schall, this was the job of the executive. He continued by describing the traits of the executive and first mentioned the importance of executives having an "innate interest in, and affection for, people."

Executive tools were listed and described as being enthusiasm, cheerfulness, unselfishness, calmness, consistency, receptiveness, frankness, impressiveness, firmness, tact, tolerance and patience, dignity, courtesy, and friendliness. Schall gave examples of each and permitted his readers to identify themselves with all of the desirable traits.

In the chapter on executive control, Schall emphasized how to give orders when using authority. His concern was with human relations and communication in relation to orders issued from some authority and not the nature of authority or responsibility.

Under the subject of executive stimulation, Schall stated that one measure of executive success was to get employees to "work with a will." He said, "the task is to stimulate the driving force which is within the individual so that he faces his work with a self-inspired eagerness."

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77Schall, op. cit., p. 14.
78Schall, op. cit., p. 73.
He described the areas of human relations and industrial psychology which were later to become the research preserves of the behavioral scientists. Considerable discussion, with illustrations and examples, was given to the subjects of difficulties with superiors, subordinates, and associates.

Schell's contribution to management thought left no fundamentals, no principles, and little summary, but his writings were an influence on executive behavior at the time. Although he pioneered in the difficult area of human motivation, human relations, and the behavioral sciences, his contribution was more inspirational than scientific. His book was popular because it was a relief from procedural writings, and instructed readers about how to deal with people.79

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79Erwin H. Schell with Harold H. Thurlby in 1927 contributed a book of business problems suitable for use in college instruction. The areas of problems covered plant, building, equipment, materials, organization, scientific method, labor and management control. No text was included. In later years, the problems would have been called cases. Erwin H. Schell and Harold H. Thurlby, Problems in Industrial Management (Chicago: A. W. Shaw Company, 1927).
CHAPTER V
INTRODUCTION OF MANAGEMENT EDUCATION (Continued)

BOOKS CONCERNING MANAGEMENT IN GENERAL

The British Contributors: Sheldon, Wallas, and Lee

There were at least three British authors who made significant contributions to management thought and improved management practices during the nineteen twenties. These contributions were: (1) The Philosophy of Management by Oliver Sheldon in 1923; (2) The Art of Thought by Graham Wallas in 1926; and (3) Management by John Lee in 1921. Mention should be made also of B. Seebohm Rowntree for his organization efforts concerning the Oxford Management Conferences and his book entitled The Human Factor in Business: Experiments in Industrial Democracy, published in 1921.

The Philosophy of Management\(^1\) by Sheldon became an authoritative book in management in both the United States and Great Britain. It was the first book published with a title that combined management and philosophy; subsequently, the concept of management philosophy became quite popular and generally used. Although Sheldon's book did not gain acceptance as a textbook in college courses, it served to influence the thinking of textbook writers as well as students, businessmen, and engineers.

During the nineteen twenties, most college textbooks were written for courses in industrial organization and management or factory organization

\(^1\) Oliver Sheldon, The Philosophy of Management (London: Sir Isaac Pitman and Sons, 1923).
and management. Sheldon's concept of management was far more general.

In his preface he stated:

It is in the belief that the direction of industry by that function broadly termed Management is a matter primarily of principles, both scientific and ethical, and only secondarily of the detail consequent upon the application of those principles that this book has come to be written. What follows, therefore, is not to be regarded as an exposition of any particular branch of Management, but rather as an attempt to define the purpose, the lines of growth, and the principles which shall govern the practice of Management as a whole.2

Sheldon's treatment of the subject of management provided a body of fundamentals. He had a philosophical approach to management, writing that:

.... philosophy is the postulation of a vast query, which dwarfs into comparative nothingness the problems of day-to-day things. It demands of us whether we are conducting our practice according to any principles or laws, or merely matching at the floating straws which pass. Whilst busying ourselves with the details of this expansion of Management, it would be fatal were none to query its purpose and inwardness.3

The chapter headings for the book cover the social and industrial background, the fundamentals of management, the social responsibility of management, the organisation of the factory, labor management, production management, and training for industrial management. Sheldon's major contributions to management thought were in his chapters on the fundamentals of management and the social responsibility of management. Sheldon believed that:

.... industry exists to provide the commodities and services which are necessary for the good life of the community, in whatever volume they are required. These commodities and services must be furnished at the lowest prices compatible

2 Ibid., p. x.
3 Ibid.
with an adequate standard of quality, and distributed in such a way as directly or indirectly to promote the highest ends of the community.  

He conceived of management as being primarily an art of directing human activities. He distinguished management from technology and compared it with the professions. Consequently, management acquired the social aspects of being related to the community and to those whom it directed. Sheldon made a strong argument for the service motive in industry and the social responsibility of management to both workers and the community. He thought that the ideal of service subordinated the creation and distribution of wealth to the highest necessity of well-being. The well-being was not for certain individuals but for all component parts of the community. In this respect, he stated:

... the value of the products of industry, therefore, is not wholly, as the economists declare, their value in exchange. It is conceivable that goods may possess an ethical value which is assessable in no ratio whatever to their economic value. The ethical value of goods produced under 'sweated' conditions, or of goods deleterious to the well-being of the community, may indeed be in inverse ratio to the economic value of those goods.  

Sheldon summarized his concept of the motive of service as follows:

1. In its present form, industry should value its policies and methods by ethical as well as economic standards.

2. Industry should aim at a structure wherein each individual gives of his best, and is called upon to express his personality, if not in the actual operation he carries out, at least in his relations with his fellow workers and the management.

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4 Sheldon, op. cit., p. 295.

5 Ibid., p. 78.
3. Industry should so conduct its business that all engaged in it have the opportunity to devote their highest faculties to what is communally "the highest."^6

Although Shaldon presented advanced concepts of the social responsibility of management and the motive of service with reference to the aims of business, he is best known for his description of the fundamentals of management. He believed that management was an art because it concerned the exercise of a special human faculty. He argued that management could have no human philosophy if it were a science alone. It was his opinion that the efforts of those furthering the cause of "scientific management" were trying to be more scientific so that the exercise of management could be based on a wider span of knowledge.

Shaldon differentiated among the terms administration, management, and organization as follows:

**Administration** is the function of industry concerned in the determination of the corporate policy, the co-ordination of finance, production, and distribution, the settlement of the compass of the organization, and the ultimate control of the executive.

**Management** proper is the function in industry concerned in the execution of policy, within the limits set up by administration, and the employment of the organization for the particular objects set before it.

**Organization** is the process of so combining the work which individuals or groups have to perform with the faculties necessary for its execution that the duties, so formed, provide the best channels for the efficient, systematic, positive, and co-ordinated application of the available effort.\(^7\)

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^6 Shaldon credited the above ideals of the motive of service to B. Seabolt Rowtree's book, *The Human Factor in Business*.

^7 Shaldon, *op. cit.*, p. 32.
In further describing the nature of these three terms, Sheldon conceived of organisation as the formulation of an effective machine; management as an effective executive; and administration as an effective direction. Administration determined the organisation and management used the organisation. Administration defined the goal for management to strive toward; organisation was the machine that management used in the achievement of the goals determined by administration.

After carefully defining all three terms, Sheldon stated that, in his book, these terms management would ordinarily be used to cover all three. System was neither defined nor discussed by Sheldon. In this respect his concepts differed from American authors. He thought that management could be described as a group of interdependent functions based upon fundamental divisions of the task of production. Knowledge of the fundamental divisions constituted the true basis for the development of an industrial enterprise. The two principles for determining the main functions of management were stated as follows:

1. The first principle lays down that industry is an organic growth, and that its functions are the outcome of a process of devolution from the original state wherein all functions were combined in one individual.

2. The second principle lays down that the division of the task of management shall be according to the relations existing between groups of activities, like being grouped with like.

In determining the main functions of management, it was essential that

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8 Sheldon, op. cit., p. 50.

9 Ibid., p. 51. The first principle was adapted from A. Hamilton Church in his book, The Science and Practice of Management.
the task of management be divided so that it was capable of direction by a single individual.

Shaldon illustrated the functions of management as he conceived them in the form of a diagram shown in Figure 10.

The function of finance was sharply differentiated from other functions, and was primarily concerned with the provision and allocation of capital. As such, it was outside the province of management proper and was described as the sole function of capital in industry. Management was concerned only with the use of capital and not its provision. The control of the finances of any business was regarded as a matter for the owners, the shareholders, or their representatives.

The function of administration was concerned with the co-ordination and organization of the corporate activities, the determination of business policy, and the ultimate control of the executive. With regard to administration, Shaldon stated:

... this function is divisible into two main parts; firstly, that part which is concerned in policy-forming; secondly, that part which is concerned in organization and control. The former may be called the 'determinative' element, the latter, the 'co-ordinating' element. The former is more closely allied to finance since the decisions taken upon broad business policy must normally be based upon financial considerations. The latter is more closely allied to management, since its business is the organization and control of management.

Following the function of administration, which Shaldon described as spreading into both the province of finance and the legitimate field

10Shaldon, op. cit., p. 53.
11Ibid., p. 52.
FIGURE 2

THE FUNCTIONS OF MANAGEMENT

FINANCE
Capital requirements, Final Accounts and Audit, Cash, Rating, Taxation, Insurance

ADMINISTRATION AND ORGANIZATION
Determination of business policy, co-ordination of execution of policy, the organizing of the business, control of the executive

PREPARATION
- DESIGN
- EQUIPMENT

PRODUCTION
- MANUFACTURE
- TRANSPORT
- PLANNING
- COMPARISON
- LABOR

FACILITATION
- DISTRIBUTION
- SALES PLANNING
- SALES EXECUTION

of management, there was the whole area of management proper. Management was divided into four main groups: (1) preparation; (2) production; (3) facilitation; and (4) distribution.

The preparation functions were design and equipment. These two groups of activities preceded the application of effort to the actual materials of production.

The production function involved the actual manufacture of the goods. It entailed the employment of the various machines, processes, operations, faculties, and methods involved in the making of a product.

The functions of facilitation (transport, planning, and comparison) were for the general purpose of facilitating the actual production of goods. Labor was listed as a facilitative function in order to assure proper treatment of the human element in industry.

The functions of distribution were described as sales planning and sales execution. Sales planning covered the devising of sales plans, the study of market conditions and of products, and the provision of data on all factors affecting the execution of sales policy. Sales execution was the actual execution of sales plans and the recording of sales and advertising results.

Organisation was considered to be the combination of work functions with human faculties. The nature of the faculties could be executive, advisory, or investigational. The division of faculties came about in the same manner as the division of functions. Each faculty was regarded as a devolution from that hypothetical condition of the "one-man" industry, where the functional divisions of faculty are concentrated in one individual.
The growth of the concern involved both a devolution of work and a devolution of the faculties to be exercised in its performance. The process of combining work and people for organization consisted of five fundamentals, which were:

1. Function—or, the work to be done.
2. Objectives—or, the ideal and the object.
3. Faculty—or, human capacity in work.
4. Relations—or, the relationships, administrative and physical, between the faculties employed.
5. Method—or, the way the work is done.

The basic idea upon which the process of organizing was developed was that of function. This idea of the principle of functionalization was later expounded by both Webster Robinson and William Cornell in their textbooks. The closest approach to the concept of system centered around the fifth fundamental, which was method.

In summary, Sheldon made a significant contribution to management thought by presenting a philosophy of the functions of management in relation to the fundamentals of organization. His concept of the devolution of work and the devolution of faculties influenced the thinking and writing of later authors in the field of management. His conceptual framework showed administration establishing goals and determining the organization. Management used the machine of organization to strive for the established goals. The fundamentals of organizing were function, objectives, faculty, relations, and method.

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12 Sheldon, op. cit., p. 104.
Sheldon's concept of the motive of service and the social responsibility of management were influenced by B. Seebohm Rowntree. He acknowledged throughout his book the influence that American authorities had on his philosophy, viz., F. W. Taylor, Hugo Diemer, A. Hamilton Church, Harrington Emerson, and C. E. Knoepfel. Sheldon made further contributions to management by assisting with Rowntree's Lecture Conferences in Oxford.

Sheldon wrote about the functions of management and the fundamentals of organization. Although he did not describe systems, routines, or procedures for production or manufacturing, he developed one of the first philosophies of management to approach management as an art of achievement or as a process that could be applied generally to industrial enterprises.

The Art of Thought by Graham Wallas (1926) was one of the first, if not the first, works to give a clear and authoritative exposition of the process of creative thinking. Later books dealing with the subjects of creative planning, creativity, and creative thinking made reference to Graham Wallas and built upon his basic concept of the stages essential for the formation of a new thought.

The stages in sequence for the formation of a new thought as described by Wallas were (1) preparation; (2) incubation; (3) illumination and (4) verification. In his chapter called "Stages of Control," Wallas described the stages and process of creative thinking as follows:

Helmholtz, for instance, the great German physicist, speaking in 1891 at a banquet on his seventieth birthday, described the way in which his most important new thoughts had come to him. He said that after previous investigation of the problem 'in all directions... happy ideas come unexpectedly without effort, like an inspiration. So far as I am concerned, they have never come to me when my mind was fatigued, or when I was at my working table...
They came particularly readily during the slow ascent of wooded hills on a sunny day.' Helmholtz here gives us three stages in the formation of a new thought. The first in time I shall call Preparation, the stage in which the problem was 'investigated in all directions'; the second is the stage during which he was not consciously thinking about the problem, which I shall call Incubation; the third, consisting of the appearance of the 'happy idea' together with the psychological events which immediately preceded and accompanies that appearance, I shall call Illumination.

And I shall add a fourth stage, of Verification, which Helmholtz does not have mention.13

Later authorities who wrote about creativity and creative thinking or creative planning made some modifications and expansions of the basic process described by Wallas. However, credit must be given him for first outlining the stages of creating a new thought and then describing the stages in detail with illustrations.

Management, a study of industrial organization, was written by John Lee and published in 1921. The book had its origin in lectures that Lee gave to those interested in problems of organization, among them the Telephone and Telegraph Society of London. Lee presented his concepts of management under the main titles of industrial control, functional management, co-ordinate managements, directive management, immediate supervision, training, promotion and discipline, theories of wages, welfare methods, and works committees and Whitley councils.14


Lee stated that management may be of two kinds. It may be divided into sections, each like the others, which is the territorial method of division. Or it may be divided into sections, each being different from the others, which is the functional method. With the functional method of dividing responsibilities, there will be much more cohesion of the whole than with the territorial method. Functional management focused attention and called for specialization that permitted the use of staff. Functional management could place the responsibility for certain results. According to Lee:

Executives should give their subordinates absolute authority to do things falling within their sphere. Employees should be held responsible for results rather than methods used; and if a policy of giving full credit is adopted by the highest officers the same policy will soon extend down and permeate the whole organization.15

This management concept expressed in 1921 was similar to the concept of "management by objectives" that became useful for divisionalized and decentralized organizations twenty-five years later.

Directive management was described by Lee as the man at the top. He pointed out that the practice of functional management would permit the top manager to devolve his responsibilities, not upon an individual, but upon an organized system. Consequently, many decisions could then be made by the organism, for it should be the task of the true organizer to build up an organism that will act spontaneously, not by the top manager's controlling or directing force, but by the combination of all the experience

and knowledge possessed by the organism as a whole. This idea was quite similar to Alfred Sloan's concept of centralized policy control with decentralised administration. Both emerged at about the same time in 1921.

Lee gave some interesting comments in relation to the British viewpoint of scientific management at the time of his writing. For instance, he said, "Englishmen generally think of Scientific Management as a means whereby a clever American decided which was the most convenient shovel for a gang of navvies to use. It is this—and very much more. It is really a minute system of detailed functional industrial process. It begins with planning and planning is carried out to rigorous details." Lee further stated that:

Scientific Management is hardly well-named. It is a theory of what might better be called Executive Management. It belongs to that section of management as a whole which is concerned with the immediate direction and control of staff. . . . It is curious that in America the more distant phases of management, as we may call them, the formulation of policy, the working out of the broad principles of production and of sales, are taken for granted. No one needs training or scientific method, apparently, to be at the head of half-a-dozen Trusts or to manage the financial interests of various huge corporations. It is understood that the more immediate managers need this training and it is for them that Scientific Management has been evolved.

The writings of Lee provide an understanding of what some of the English interpreted scientific management to mean in 1921. Furthermore, a comparison of his concepts of functional management and directive management indicate that management thought in Great Britain was evolving.

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17 Ibid., p. 60.
along the same lines at the same period of time as in the United States. However, Oliver Sheldon's management concepts were leading the development of management philosophy as compared with American authors in 1925, and certainly Graham Wallas wrote about creative thinking well ahead of any Americans.

Wallace Clark

Wallace Clark made possible the dissemination of H. L. Gantt's concepts and contributions to management with his book entitled, *The Gantt Chart*. The principle of the Gantt Chart was illustrated and stated in the beginning of the book as follows:

In the Gantt Chart a division of space represents both an amount of time and an amount of work to be done in that time. Lines drawn horizontally through that space show the relation of the amount of work actually done in that time to the amount scheduled. This is the feature which distinguishes the Gantt Chart from all other charts. Equal divisions of space on a single horizontal line represent at the same time: 1. Equal divisions of time. 2. Varying amounts of work scheduled. 3. Varying amounts of work done. 18

The Gantt Chart was designed to show the relation of time spent to work done. In addition, the principle of the Gantt Chart provided for dynamic records because it showed what had happened and when it happened. Such knowledge results in action and projections into the future.

Clark illustrated the advantages of the Gantt Chart by indicating that it was essential for the planning of work. In fact, the use of a Gantt Chart made it necessary to have a plan. Furthermore, any plan presented on a

Gantt Chart was presented so clearly that it could be understood easily by both managers and workers. It kept a manager advised of the progress made in the execution of a plan and the reasons why performance deviated from the plan.

Clark stated that the principle of the Gantt Chart could be applied to any human activity, but that it was used mainly for industrial production. He described and presented illustrations of the principle of the Gantt Chart in the following classifications:

1. Man and Machine Record Charts
2. Layout and Load Charts
3. Progress Charts

The Man and Machine Record Charts were used to show the relation between what is done and what could be done by a man or a machine. The Layout Chart was a mechanism for the planning of work so as to avoid idleness of men and equipment. The Load Chart showed the amount of work (in hours or days) ahead for a plant or department. The Progress Chart was a device to realize work objectives by showing a comparison of actual results with plans and the reasons for failure to follow the plan.

Wallace Clark stated in his book that "the Gantt Chart, because of its presentation of facts in their relation to time, is the most notable contribution to the art of management made in this generation."\(^{19}\) The principle of the Gantt Chart was widely and successfully used during and after World War I by American industrial firms and the Ordnance Department

\(^{19}\) *Idem.*, p. 3.
of the U.S. Army. It provided the means to plan intelligently for work and to measure the efficiency of performance. Clark's contribution to the literature of management was a full and complete description of the principle of the Gantt Chart with simple illustrations for its use in manufacturing.

H. L. Gantt died in 1919. Prior to his death, he had published illustrations of his charts in magazine articles and in his book entitled *Organizing for Work*. But had it not been for Wallace Clark, the managers and educators would have been without a complete explanation of the principle, the techniques of preparation, and the uses of the Gantt Chart. There can be little doubt concerning the influence of Clark's book about the Gantt Chart on industrial managers and teachers during the nineteen twenties. Although his contribution to management thought was not original, he did facilitate interest in the refinement of the functions of planning and control by his complete and graphic explanation of the uses and advantages of the type of chart designed by H. L. Gantt.

Leon Pratt Alford

Leon Pratt Alford believed that there were fundamental principles concerning manufacturing organization and management. In 1926, he presented a paper before the annual meeting of the American Society of Mechanical Engineers on the subject of "Laws of Manufacturing Management." His presentation resulted in the publication of a book entitled *Laws of Management Applied to Manufacturing*. He presented some fifty laws of manufacturing.

management with detailed examples and illustration of their application to specific manufacturing concerns. After a detailed discussion of the progress in manufacturing and progress in management, Alford stated and illustrated his laws under the following headings:

1. Laws of Manufacturing Management
2. Law of Leadership
3. Laws of Executive Work
4. Laws of Specialization and Standardization
5. Laws of Production Management
7. Laws of Individual Productivity
8. Laws of Wage Payment
9. Laws of Safety and Maintenance
10. Laws of Economy

As the title of his book indicates, Alford was interested mainly in the manufacturing and production areas. However, some of his laws could be applied to the field of management in general.

Alford emphasized the attempts of the pioneering authorities to state principles of management. He listed Taylor's four underlying principles of management, Emerson's principles of efficiency, and many other historical examples. He advanced the concept that progress in manufacturing had been the result of a conscious or unconscious application of definite principles. He concluded that management laws resulted from organic and societal evolution and that they possessed three characteristics. "They
are resistant to change. They are universal in application. They are imperative to the highest success."\(^{21}\)

Examples of laws expressed by Alford applicable to general management are:

1. **Law of Leadership:** Wise leadership is more essential to successful operation than extensive organization or perfect equipment.

2. **Law of Responsibility and Authority:** Responsibility for the execution of work must be accompanied by the authority to control and direct the means for doing the work.

3. **Law of Exceptions:** Managerial efficiency is greatly increased by concentrating managerial attention solely upon those executive matters that are variations from routine, plan, or standard.

Credit was given to H. L. Gantt for his phrasing of the concept concerning the law of leadership and the law of responsibility and authority. The law of exceptions was credited to F. W. Taylor.

Alford contributed both to management literature and to management thought with his compilation, expression, and illustration of the some fifty laws of management. He collected them from many sources for logical presentation and explanation. His efforts helped to formulate the growing body of management fundamentals and principles. This moved the orientation of management thought from descriptions of systems and routines toward functions and principles. At about the same period of time, Webster Robinson and William Cornall were thinking and writing in terms of fundamentals

\(^{21}\)Alford, *op. cit.*, p. 46.
of business organization and principles of management instead of placing so much emphasis on the descriptions of current production procedures and methods. Undoubtedly, this book on laws of management provided Alfords with the foundation for his later textbook entitled Principles of Industrial Management for Engineers.

COLLECTED PAPERS CONCERNING SCIENTIFIC MANAGEMENT

During the nineteen twenties, three significant books were published that served to summarize management thought and integrate the concepts of several management authorities. All three were published through the efforts of competent editors. Edward Byrd Hunt edited a collection of authoritative papers with the title Scientific Management Since Taylor (1924). Scientific Management in American Industry was published in 1929 by The Taylor Society; H. S. Person was the editor. In 1927, Business Management as a Profession was published with Henry C. Metcalf as the editor. Many scattered articles from the professional management journals were collected and made available in these books.

Edward Byrd Hunt

Scientific Management Since Taylor was organized into four parts: (1) Nature and Achievements of Scientific Management; (2) Scientific Management in General Management; (3) Stabilizing Operations and Employment; and (4) Ownership, Management and Workers.22 Morris L. Cooke in the

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Foreword stated that "The term 'scientific management,' used either as a slogan or as the terse expression of an industrial creed, has come to signify a complex of forces—mechanical, economic, social and human—which have developed very largely within the last 25 years out of the efforts to introduce scientific determinism into work." The collected papers in this publication were intended to impress the readers with the great advances in the management movement since the death of F. W. Taylor in 1915. The editor, E. E. Hunt, stated in the Introduction that Taylor had died a discouraged man because he felt that he and his work had been neglected after a flare of public interest in 1911 and 1912. However, World War I had resulted in a renewed interest in good management practices in the United States and Europe. The reconstruction period following the war offered even greater opportunity for improved management practices.

In 1914, Clarence B. Thompson served as editor for the collection of the major significant articles that described the Taylor system of management. The collection was published under the title of Scientific Management. The collection of articles by Hunt ten years later provided an interesting comparison to Thompson's compilation. Thompson's collection of articles emphasised the fundamental techniques and principles of production, while Hunt's collection emphasised achievements of management, general administration, and human aspects.

The first part of Hunt's edited collection of papers reviewed the nature and achievements of scientific management. H. S. Person believed

that management should not be confused with administration if a clear understanding of scientific management was desired.

Management characterizes the organization and procedure through which collective effort is effected; administration characterizes those considerations and decisions which establish the purposes which create the need for management and those broad governing policies under which the management proceeds.24

Since H. S. Person had previously written his article for the Encyclopedia Americana, his operative definitions, which differentiated management and administration, must have had wide influence on the concepts of others in connection with these two terms. Henry P. Kendall discussed the differences among unsystematized management, systematized management, and scientific management. Many of the later textbooks in industrial organization and management used his classification. His article had been previously published in the Proceedings of the Amos Tuck School Conference on Scientific Management in 1911. H. H. Farquhar's article, published in 1924 in the Bulletin of the Taylor Society, emphasized the human factor and the measurement of management.

The second part of Hunt's collected papers pertained to the manner in which scientific management had approached the problems of general management through refined and precise methods of budgeting and administrative control. Parts Three and Four dealt with stabilizing operations and employment and the relationship of owners to managers and managers to workers. Emphasis was given to demonstrating that scientific management was more involved with man as a human being than as a machine.

24Hunt (ed.), op. cit., p. 5.
Hunt's collection of papers indicated the great degree of interest in management that had been generated partially by the *Waste in Industry* report and Copley's book entitled *Frederick W. Taylor*. In the Introduction to the collected papers, Hunt stated:

The enlargement of the field of scientific management has resulted in enlarging its spirit. Taylor was no psychologist and he was not an economist. When he fought 'soldiering' on the part of workers, he fought it through an appeal to the wage motive. Today the management engineer is working with the psychologist and the economist. He has found that neither the wage motive nor the profit motive is enough. An appeal to the creative spirit and the spirit of service is also necessary.25

Hunt helped to summarize management thought in 1924 with his collected papers and introductory comments. Attention should be given to his mention of the spirit of service at about the same time that Howard Coonley wrote about the service motive and Oliver Sheldon wrote about the motive of service.

H. S. Person

*Scientific Management in American Industry* was prepared in response to demands upon the Taylor Society for a comprehensive treatise on scientific management.26 Its purpose was to give a perspective of scientific management, and to lay a foundation along fundamentally sound lines for subsequent books in greater detail on subjects relating to scientific management. Morris L. Cooke wrote in the Preface that more than a score of authors contributed to the text materials. The presentation on the treatise on scientific management was built around an outline of three elements: research,


standardization, and control through standards. These elements were adapted from Taylor's previous logical steps of experiment, standards, planning of work, and maintenance of standards.

H. S. Person contributed the basic chapter on the origin and nature of scientific management. He disclosed the events in Taylor's life and the key points of Taylor's work experiences that led to the development of The Taylor System, later called scientific management. For the Taylor Society's 1929 Statement of Principles underlying scientific management, the following were listed:

1. **Management Research.** Research investigation, and experiment (with the processes of analysis, measurement, comparison, etc.) constitute the only sound basis for the solution of managerial problems and for the determination of purpose, policy, program, project, product, machine, tool, type of ability or skill, method and other factors, and the co-ordination of these in purposeful effort.

2. **Management Standards.** If they are to be useful to an enterprise, the results of research, investigation, and experiment must be made available to the cooperating group in the form of defined and published standards that serve as common goals, facilities, and methods.

3. **Management Control.** A systematic procedure must be established, based on definite standards for the execution of work.

4. **Cooperation.** Durably effective management requires recognition of the natural laws of cooperation. This involves the integration of individual interests and desires with group interests and desires and of individual capacities with the requirements of group purposes.  

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27 Person (ed.), *op. cit.*, p. 10.
These principles of scientific management restated in 1929 have the concepts of planning and organizing along with the established ideas of system and control. The principles underlying management research, management standards, control, and cooperation were applied in turn to the functional areas of business. This application of fundamental principles to the various operating functions of business served to further the trend of developing functions of management as well as functions of the business enterprise. Management thought was beginning to be accepted in broader scope than organization and system.

The 1929 treatise of the Taylor Society described what was called the new attitude toward management. Several basic contrasts of the new attitude with the previous attitude toward management were listed as follows:

1. Conservation versus waste
2. Investigation versus imitation
3. Predetermination versus "the way open"
4. Design versus execution
5. Constants versus variables
6. Laws of the situation versus individual guess and arbitrary will
7. Functions versus persons
8. Adjustment versus maladjustment
9. Cooperation versus individualism
10. Freedom versus independence
11. Evolution versus revolution

Some of the new attitudes toward management had a direct relationship to the stated underlying principles. According to H. S. Person, the contrast
could be summarized by the general statement that:

... scientific management crystallized into a definite technique of management that urges toward a regimentation of managerial conduct which was being stimulated by a new environment which was less frontier and fluctuating, and more industrial and organised, than was the environment in which the dominant managerial habits of the time had been set.28

The exposition of scientific management as a project of the Taylor Society was published in the same year as the report Recent Economic Changes in the United States. Edward Eyre Hunt, who contributed to both publications, stated in the former that the practices of scientific management did much to influence high wages and low labor cost as a policy in 1929—this was 26 years after Taylor advocated such a policy as the best foundation for management.

Henry C. Metcalf

Business Management as a Profession was edited by Henry C. Metcalf and published in 1927. The collection of articles represented an unusual effort to analyze the fundamentals of business administration and help develop the professional status of business management.29 By 1927, the progress toward improved managerial practices had been sufficiently evident for some persons to think of business management as a profession. Oliver Sheldon had written previously, "If we elaborate a science of management in industry, the industrial manager of the future must inevitably become a

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28Person (ed.), op. cit., p. 23.

student first, and a professional man after." Metcalf brought together, for this publication, the writings of several management authorities on the subject of a profession and management. Some of the significant points and concepts follow.

Henry S. Dennison outlined the essentials of a profession and established four tests of professional activity, which were: (1) a trained intelligence from study and practice; (2) the free and open application of the methods and fruits of science; (3) the acceptance of a motive of service to mankind in greater degree than the motive of service to one's self; and (4) a fealty to a code of ethics. Dennison commented that the four tests of professional activity were considered to be applicable to business conduct.

Harlow S. Person inquired about whether or not business is a profession. He established the following criteria for a profession: (1) specialized, organised, recorded knowledge, and universally acknowledged principles; (2) concrete affairs to deal with; (3) specialised ability to know and to know how to utilize that certain body of knowledge; (4) a motive of service; and (5) an ethical ideal with regulations for its protection. Person concluded that business as yet possessed neither an organized body of knowledge nor a definite technique of transferable skill in its use, nor even formulated principles. Consequently, business did not meet the criteria of a profession.

Mary P. Follett

Mary P. Follett was a major contributor to the discussions about the relationship of business and a profession. She explored the following

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30Sheldon, op. cit.
subject areas: (1) How must business management develop in order to become a profession? (2) What does responsibility in business management mean? (3) How is the employee representation movement remolding the accepted type of business manager? and (4) What type of administrative leadership is essential to business management? It was in the conference series on Business Management as a Profession that Mary P. Follett made some of her most original public contributions to the art of business administration. She stated that she perceived signs of a scientific basis for business management. One clear indication of the advance of business toward a professional status was the capability of executive leadership for analysis and the training of men to occupy such positions. She pointed out that training was gaining in importance over mere personality for the preparation of men for business management. She also stated that business was increasingly recognized as a public service that carried with it a sense of responsibility for its efficient conduct. Miss Follett discussed the service motive and declared that the concept had been abused. She suggested the use of function instead of service. In this manner, a businessman would think of his work as one of the necessary functions of society. In her opinion, function implied not only the responsibility for serving one's community, but also a responsibility in part for there being any community to serve. She described signs for a scientific basis for business management in the application of the scientific method to managerial techniques, in the increasing trend toward functionalized management, in the decrease of arbitrary authority, and in the vitality of businessmen's thinking.

In the previous conference series entitled Scientific Foundations of Business Administration, Miss Follett had made her first contributions to
the philosophy of management. In that conference series during 1924-25, she presented papers on the subjects of: constructive conflict, the giving of orders, business as an integrative unity, and power. The subject matter of her papers showed evidence of her interest in the questions of What do you want men to do? and How can men's conduct be controlled and guided in work and social relations?

**Frank B. Copley**

In 1923, Frank B. Copley was the author of a two-volume book entitled *Frederick W. Taylor, subtitled Father of Scientific Management*[^31]. This biography described the continuous development of Taylor's career in great detail, and was received so enthusiastically that it generated others to think and write in the field of management. As a biography of Taylor, the book did not contribute directly to the development of management thought. It did, however, stimulate reviews, in the nature of essays and collected papers, on scientific management. Copley described the history of an epoch in American industrial history and summarized the origin and development of scientific management. *Scientific Management Since Taylor* edited by Hunt, *Scientific Management in American Industry* edited by Person, and *Business Management as a Profession*, edited by Metcalf, were all examples of essays, treatises, and collected papers that came about as a result of the interest generated in management by Copley's life of Taylor.

The February, 1925 *Bulletin of The Taylor Society* was published in two parts so that Part II could be devoted to a collection of articles.

inspired by Copley's book on the life of Taylor. Some of the greatest recognized authorities of the time had essays on management published in that issue of the Bulletin. Typical authors and articles were "Scientific Management Made Clear" by Irving Fisher; "Taylor the Creative Leader" by Oliver Sheldon; "Taylor's Intellectual Contribution" by Ordway Tead; "An Authentic Genius" by Stuart Chase; and "Scientist at Work" by E. S. Person.

NOTABLE EVENTS AFFECTING MANAGEMENT

Two notable events occurred during the nineteen twenties that had a great impact and influence on later management thought. Those events were the formulation of the General Motors Reorganization Plan by Alfred P. Sloan, Jr. in 1920 and the experimental studies in human relations that were conducted at the Hawthorne Works of the Western Electric Company in Chicago from 1927-32.

The General Motors Reorganization Plan

Alfred P. Sloan, Jr. was credited with the design of an administrative ideology that was a way of thinking about the administrative or management process. In essence, Sloan's concept was that the process of administration should be decentralized while the control process or review work should be centralized. His administrative process included the planning process, the administrative framework, and the administrative skills.\(^3^2\) Sloan

believed that central management should determine short- and long-range plans for the corporation as a whole as well as within the scope of the operating divisions. Such planning should take into account the ideas and suggestions of the divisions and accept them to the degree that central management predetermines their suitability to the over-all plans. Central management, in Sloan's ideology, should integrate all of the divisions into a pattern of operation, as determined by the over-all plan, and give each division goals and a role to follow. Staff assistance at various levels should be provided to help the divisions realize goals and measure the results of performance. Provision should be made for the integration of viewpoints and for training by frequent managerial conferences and field visitations. Control of operations through policies would come from the work of the finance committee and the executive committee, co-ordination from the work of the operations committee on which the heads of the operating divisions were represented.33

Inasmuch as Sloan's concept of organization and the administrative process was widely imitated and followed by many other companies and managers, there is little doubt concerning his influence on management thought and management philosophy. His managerial philosophy of centralized planning and centralized control with decentralized administration and operations enabled corporations to grow efficiently. His organizational

concepts provided the means for the intelligent use of executive talent as well as the methods for developing managers.

The Hawthorne Experiments

At the December, 1924 meetings of the Taylor Society, Dr. Elton Mayo gave an address on "The Basis of Industrial Psychology." A quotation from Mayo's address follows:

Taylor confined his attention, upon the whole, to the problem of irrelevant synthesis or mistaken coordination in our muscular apparatus; there is urgent need to extend this inquiry to discover what irrelevant synthesis of emotions and ideas are imposed upon workers by indifferent education and unsuitable conditions of work. I use the term 'worker' here to include proprietors and managers as well as machine operators.  

Mayo's address had a definite influence on management thought concerning the use of analysis and the scientific approach to the area of human relations. Subsequently, the experimental studies in human relations were started in 1927 at the Hawthorne Works of the Western Electric Company under the guidance of Mayo. At the start of the experimental inquiry, interest was centered around the relationship of conditions of work and the incidence of fatigue and monotony among workers. It was hoped that an experimental situation could be established in which such variables as humidity, temperature, and hours of sleep could be measured separately from experimentally imposed conditions of work. From an original group of five subjects, the investigation developed until studies of about 20,000 workers were included.

The illumination experiments eventually attracted national attention and interest. It was planned that a study would be made about the relation

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of quality and quantity of illumination to efficiency in industry. The experiments were to continue over a two-and-a-half year period. As the studies and experiments progressed, a discovery was made that increased efficiency was being realized from psychological effects rather than from increased illumination effects. The results of this study generated wide interest in industrial psychology and started many programs of experimentation. The experiments gave the following conclusion:

Although the results from these experiments on illumination fell short of the expectations of the Company in the sense that they failed to answer the specific question of the relation between illumination and efficiency, nevertheless, they provided a great stimulus for more research in the field of human relations. They contributed to the steadily growing realization that more knowledge concerning problems involving human factors was essential.35

The stimulus of the Hawthorne experiments opened the way for later psychologists and sociologists to experiment by analysis and quantitative measurements in the field of human emotions, attitudes, and reactions to environmental or organizational situations. Eventually, the behavioral scientists would make many significant contributions to management thought and philosophy.

JOURNALS AND MAGAZINES IN THE MANAGEMENT FIELD

Many of the existing journals and magazines in the field of management originated during the nineteen twenties. The National Personnel Association

was formed in 1922 with the expressed aim of advancing the understanding of the principles, policies, and methods of creating and maintaining satisfactory human relations within commerce and industry. The main medium through which the Association's objective was pursued was its magazine, Personnel Administration, in which the articles dealt mostly with foreman and employee training, education, and placement. Several articles related personnel administration to "the management"—their role, responsibility, and development, such as: W. W. Kincaid, "Developing Leaders Through Committees" and Sam A. Lewisohn, "Management's Part in Personnel Administration." A considerable portion of each issue of the magazine was devoted to Association news and reviews of articles in other magazines.

On March 13, 1923, after only one year of existence, the name of the Association was changed to the American Management Association. The change of name resulted from the recognition that the responsibility for personnel work rested with the management, and that most of the manager's work and problems were related to the guidance of people. The Association began publishing the American Management Review after its change of name.

The American Management Review was to be "devoted especially to the consideration of the human factor in commerce and industry." It was also explained that the publication would not be oriented toward engineering.

\[37\] Ibid. (August, 1922), p. 3.
\[38\] American Management Review (April, 1923), front cover.
In the early issues, personnel management was regarded as the whole field of management. There was a gradual increase in such articles as: Dwight T. Farnham, "Analysis of Modern Industrial Management," which discussed the administrative and executive functions of management, and defined the major functions of a business as production, sales, and finance; "Organization Defined," which presented ten definitions of organization and management from different sources; H. A. Fountain, "To Budget," which outlined essentially a planning process; Mark M. Jones, "Better Management," which suggested the importance of setting objectives.

There were many reviews in the magazine on such subjects as office management, sales management, and plant management.

In April, 1925, the general management category was introduced into the reviews, and the trend was toward the consideration of all the activities of a business. There was a gradually improving management approach and a recognition of the Taylor dictum that one should not mistake the mechanism of management for its essence or underlying philosophy. By 1929, articles in the American Management Review covered such varied subjects as mergers, research, salaries, finance, production, economics, personnel, and general management.

In January, 1921, the Ronald Press Company introduced *Administration* and six months later *Management Engineering*. Both publications were combined into *Management and Administration* in June, 1923. The title of the latter publication was changed to *Manufacturing Industries* in July, 1926, and it was finally absorbed by *Factory and Industrial Management* in February, 1929.

*Administration*, true to its title, was concerned with the development of all business techniques, with the aim of increasing their effectiveness, and with special emphasis on the area of personnel management. Of special significance to the development of management thought were articles on organization such as: H. S. Dennison, "Problems of Business Organization"; Oliver Sheldon, "How Far Can Functionalization Go?"; and J. K. Nason, "The Functions of Organization."

*Management Engineering*, in the first issue, defined the area of management engineering as "the art of using that which the engineer has built, to produce the greatest results at least cost." The majority of the articles were directed toward the application of scientific management to the reduction of waste, the lowering of costs, and the improvement of manufacturing methods through time studies, safety programs, records, charts, and production control. Some coverage was given to labor problems, but

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43 *Administration*, II, p. 345.
the contributions in the field of management were restricted to a narrow and mechanical concept of scientific management.

Management and Administration was "devoted to deserved profit-making as the result of the successful carrying on of every activity in manufacturing industry," with the additional purpose of assisting manufacturers in the attainment of maximum output, harmonious relations and high morale, low manufacturing and distribution costs, and high, continuous profit. Although the great majority of the articles were concerned with the technical aspects of shop operations, and their relationships to efficiency and cost minimisation, several writers recognized the broader implications of management; for example: W. E. Hotchkiss, "Unity in Management Policy"; 48 E. A. Franklin, "Organization for Successful Operation"; 49 and W. Penn Lukens, "Waste Elimination Through Executive Control," which discussed the elimination of waste in sales activities, labor operations, organization, material handling and production. 50

Manufacturing Industries contained articles that followed the trend toward an increasing consideration of technical problems, with detailed emphasis on problems of shop management. The major purpose was to give readers immediately usable information to help them in the practical areas of cutting costs, increasing output, and reducing waste in the face of

48 Management and Administration (July, 1924), p. 17.
severe competition. The main approach was to give examples of practices from the most progressive firms, such as a series of articles in the January to June, 1926 issues on how Ford lowered costs.

Two magazines were outstanding in the field of manufacturing shop management during the nineteen twenties. They were *Industrial Management* and *Factory. The Magazine of Management*. The former was the successor to the famous *Engineering Magazine*, first published in 1891. *Factory* was initiated by the A. W. Shaw Company in 1906. The two magazines were combined into *Factory and Industrial Management* in January, 1928 by the McGraw-Shaw Company.

*Industrial Management* at first published a heavy proportion of articles in the area of human relations, but later changed to subjects surrounding the problems in shop management. In "An Executive Working Plan for 1924," the purpose of the magazine was described as providing for "a definite concrete and practical guide toward increased profits and decreased costs." The series of articles that exemplified this purpose was devoted to such areas as layout, materials handling, purchasing, maintenance, and bonus plans. Contributions to management proper were discussions about the education and training of foremen, and the empirical observations of organizations and their effectiveness. Worthy of note were: J. G. Van Deventer, "How to Develop Executive Ability," which isolated creative and routine thinking at every level of the organisation;

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and Hugo Diemer, "The Principles Underlying Good Management," which regarded the planning function as comprehensive, with more emphasis on the purpose of manufacturing. 53

Factory, except for an occasional article upon some aspect of general business conditions, or a related financial problem, dealt with the efficient organization of manufacturing operations. The articles were written in the areas of how to increase the efficiency of the labor force, how to improve mechanical processes, and how to save expenses in the plant. The orientation of the articles was to prescribe rather than to isolate principles.

Factory and Industrial Management had an editorial objective to "convey and discuss . . . the current practices of successful industrial executives in speeding up production turnover, lessening unit production costs, reducing overhead, and making the product more saleable," and to investigate all the approaches to these "four main objectives in all industry." 54 Personnel problems were considered in so far as they were concerned with those objectives, and thus covered mainly the topics of safety and incentives. Otherwise the articles dealt mainly with the aspects of shop management.

In summary, the journals and magazines in the field of management seemed to concentrate on articles concerned with shop practices, waste elimination, and manufacturing techniques. Some articles were on the


54 "A Publication for The Key Men of Production," Factory and Industrial Management (January, 1928), p. 35.
techniques of control. The subject of planning was discussed very little except in articles dealing with financial management and budgeting procedures. The areas of organization and personnel management were more popular than those of planning and control.

The publications of the American Management Association gave the most attention to the areas of general management, organization, and personnel. For the most part, the articles in the journals and magazines described current operating practices in manufacturing—during the nineteen twenties, most of the significant contributions to management thought and philosophy were contained in book form.

Summary

The decade of the nineteen twenties was a fruitful period for progress in management education and contributions to management thought and management philosophy. Prior to 1920, the foundation had been established for the acceptance of management fundamentals, principles, and practices based on a scientific or logical approach to the practice of management. Management seemed to turn a corner and move forward in all respects as a field of study and accepted practice after 1920. The significant factors that contributed to management thought and education from 1921 to 1930 were as follows:

1. The continuous economic growth and progress in the nation provided a situation in which improved management practices were accepted and their importance recognized. Acceleration rather than structural change was the
trend of economic developments. Power increased in supply and was used more widely. Mechanical energy multiplied the strength and skill of the workers. Production per man-hour of effort rose to new heights because of a better division of work by improved organizational practices and increased mechanization of industry. Capital formation increased as the result of the surplus incomes of a greater portion of the population. Most of the emergency war controls had been removed by the government. Business firms enjoyed record levels of attainment.

2. The typical business leadership consisted of nonowner business executives who engaged in speculative pursuits for quick profits with little regard for social or economic consequences. The spread between ownership and management grew because of the increasing number and size of corporations. Business firms became too large, in many instances, for one-man management. The need for increasing numbers of managers hired to manage enterprises or portions of enterprises stimulated interest in the fundamentals, techniques, and principles of management or administration.

3. Professional management association became strongly established and organized through the combining of the pioneering ones into those which exist at the present. The Society for Advancement of Management was started in 1930 by the union of the Society of Industrial Engineers with the Taylor Society, which had its origin in 1916. The American Management Association was established in 1923, formed from the National Personnel Association, which in turn had been organized in 1922 from a merger of the Industrial Relations Association and the National Association of Corporation Schools. The American Engineering Council was initiated in 1920 with the
founder societies being the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, and the American Institute of Electrical Engineers.

These professional management and engineering associations contributed in many ways to the development of management thought and improved management practices. "Management Weeks" were promoted and sponsored in cooperation with educational institutions. Conferences, meetings, and research undertakings stimulated interest in management philosophy and in more scientific management practices. The publications of the professional management associations gave business executives and college professors an opportunity to further management education by providing the vehicles for articles containing information about management philosophy, successful practices, and research projects.

4. An important influence on the development of management thought was effected through the curricula of schools of commerce and schools of engineering. Richard Lansburgh wrote that less than five courses in management were given in American universities in 1915. Ten years later, almost every business and engineering school offered courses in management. In 1924, the Taylor Society sponsored the first meeting of teachers of management from schools of engineering and commerce to study and discuss the content of courses in management. There was general agreement that the basic course should be that of "Industrial Organization and Management." Subsequently, the basic textbooks for college courses in management were written under that title or a title that was very similar. Any study of the proceedings of that first meeting of teachers of management will reveal that management
courses at that time were oriented around the production process in a manufacturing environment. Emphasis was on techniques and procedures rather than fundamentals and principles.

5. There were two significant national research studies that generated interest in management practices and the objectives needed in the economy. In 1921, the Federated Engineering Societies undertook a study of the restrictions and wastes in industry. The report was named Waste in Industry. The findings of the study attributed waste in industry to low production, interrupted production, restricted production, and lost production. The report concluded that management had the greatest opportunity and hence the greatest responsibility for eliminating waste in industry. Management was charged with 75 per cent of the causes for the waste in industry. Such information in a national report stimulated interest in management philosophy and practices for the purpose of eliminating waste and inefficiency. The managerial situation was portrayed as a basis for needed management education in the professional management societies, the schools, and business firms. As an outgrowth of the President's Conference on Unemployment in 1921, Recent Economic Changes was published in 1929 and covered the economic changes in the economy from 1922 to 1929. This report portrayed the trend of managerial practices and the progress that had been made since the Waste in Industry report. Pertinent information in the report disclosed that increasing attention was given to finding better forms of internal organization structure; functional departments were more in use; better methods of co-ordination were being sought; and better techniques of order-giving were being practiced. Planning courses of action in
advance was a more common practice. Credit was given to the book *Budgetary Control* by J. O. McKinsey for stimulating improved budgeting methods in business.

6. In 1921, the Management Division of the American Society of Mechanical Engineers approved the following definition of the management function: "The art and science of preparing, organizing, and directing human effort to control the forces and to utilize the materials of nature for the benefit of man." This definition appeared in many publications and textbooks as the definition of management. It could not help but influence the concept of management as a function among educators, economists, engineers, public officials, students, and business executives.

7. The most popular textbooks for college courses in management were written by Richard H. Lansburgh, Henry P. Dutton, Ralph C. Davis, and William B. Cornell. All of them were oriented around the factory or the industrial environment. In general, they approached the subject of management in a similar manner. Administration was distinguished from management. Both were related to organization and system. Administration was conceived as the function that formulated policies and established the organization, while the organization was considered as the machine of management. Management was responsible for the guidance and control of the organization in the performance of its various functions. System was regarded as a management tool for achieving results within the organization, and resulted from the development of routines through the application of methods of scientific analysis. The major portions of the textbooks of the period were concerned with descriptions of the many routines or
procedures involved in production, stores, purchasing, costing, budgeting, materials handling, personnel practices, and the setting of standards.

Because of the popularity of those four textbooks, their influence on the management concepts of college students was widespread. Management thought was oriented around organization and the routines that made up the system. Emphasis was given to setting standards and the control of actions in conformance to the standards. The area of control embraced managerial actions that later authorities included under planning. A distinction was made, however, between the functions of a business, and the function of management.

8. Management courses were popular as offerings for correspondence study. The Alexander Hamilton Institute and the LaSalle Extension University published their own textbooks in management. The authors of such textbooks were the same ones that wrote the textbooks in management for the schools of commerce and engineering, viz., William Cornell, Ralph C. Davis, Hugo Dieser, and others. Consequently, the influence on management thought was the same from both residence and correspondence educational institutions.

9. Webster Robinson prepared a textbook that departed from the conventional approach of the period. Instead of using the concept of applying management to organization and system, he developed several fundamentals of business organization that he believed to be generally applicable to all kinds of business firms. With certain modifications, his concept of management was later followed by many writers in the field of management. He contributed the following fundamentals: (1) definite
and stable policies; (2) functionalization; (3) the right man in the
right place; (4) direction; (5) supervision; (6) control; (7) delegation
and co-ordination of authority and responsibility; and (8) incentive.
His influence on management thought served as a basis for later developments of the management or administrative process.

10. British authors who contributed to the development of management philosophy were Oliver Sheldon, John Lee, Graham Wallas, and B. Seebohm Rowntree. Sheldon's book on *The Philosophy of Management* was widely read and quoted. He made a distinction between administration, organization, and management, and then stated that current usage grouped them all together under the term of management. Sheldon established and portrayed a concept of the functions of management. Finance was differentiated from all other functions. He stated that the provision of capital was outside the province of management; management was responsible only for the use of capital. Administration was responsible for the determination of policies, the co-ordination and execution of policies, the organizing of the business, and the control of the executive. He presented the area of management proper as being divided into the four main groups of preparation, production, facilitation, and distribution. Sheldon acknowledged the influence of Church on his thinking about management proper. He attributed the growth of an organization both to a devolution of work and a devolution of faculties. His basis for organizing included function, objectives, faculty, relations among faculties, and method. Sheldon's concept of the motive of service and social responsibility was quite advanced for his time.
Graham Wallas influenced management thought in the area of creativity and creative planning. His steps for the formation of a new thought—preparation, incubation, illumination, and verification—were imitated and adopted by many others.

John Lee made some contribution to the concepts of functionalization in industrial organization. His writings also give an insight into some of the current beliefs of the British on the subject of scientific management.

11. Wallace Clark preserved the principle of the Gantt Chart and illustrated it for the education and use of others. His contribution was one of education rather than creation.

12. L. P. Alford collected from many sources some fifty laws of management and gave illustrative explanations of them with the hope of developing some management laws or principles that would be resistant to change, universal in application, and imperative to the highest success. His contribution helped to influence management thought from a description of organization and system to a body of fundamentals or principles that could be used for a management process or philosophy.

13. Interest in scientific management resulted in the preparation of two important collections of management essays and writings. *Scientific Management Since Taylor* was edited by Edward E. Hunt and *Scientific Management in American Industry* was edited by H. S. Parson for the Taylor Society. These collections of management writings were stimulated by Frank Copley's book entitled *Frederick W. Taylor* and by requests from educators and businessmen for authoritative and informative treatises on the subject of scientific management.
Interest in management developed to the stage where Henry C. Metcalf edited a collection of papers relating to business management as a profession. The title of the collection bore the name *Business Management as a Profession*. The principles and practices of scientific management were so well known and accepted that some were reaching out for a professional status for management, although the concept of management as a profession did not develop. In this particular collection of papers, Mary P. Follett made some of her most original contributions to management thought concerning the capabilities of executive leadership for analysis and training. She recognized the importance of training over mere personality for managerial responsibilities, and also developed arguments for recognizing the conduct of business as a public service.

14. Two notable events occurred that had a great impact and influence on management thought. The formulation of the General Motors Reorganization Plan by Alfred P. Sloan, Jr. established the conceptual framework for centralized planning and control with decentralized administration and operations. His concept of organization and management philosophy stimulated research and study in the areas of administration and organizational theory, which in turn brought about numerous changes in both the teaching and the practice of management. His contribution to management thought also gave impetus to the area of management development. The Hawthorne experiments under the guidance of Elton Mayo resulted in the discovery that increased human efficiency could be realized from psychological effects as well as from physical or environmental effects. The stimulus of the Hawthorne experiments opened the way for the later behavioral
scientists to experiment by analysis and methods of quantitative measurements in the field of human emotions, attitudes, and reactions to organizational situations.

15. Journals and magazines dealing with the field of management were numerous. They were published by professional management associations and commercial publishers. Increasing interest in management invited publications to carry information and education to interested business executives, engineers, and educators on all phases of management practices. However, the subject matter was mostly in the area of shop practices, waste elimination, and manufacturing techniques. Some articles were about the function of control. There were occasional articles dealing with organization and personnel activities. For the most part, journals and magazines carried articles that described current operating practices in manufacturing rather than reports of research projects or presentations of management functions or management concepts.

Since there were more people interested in learning about successful management techniques than there were competent authorities to supply the periodicals with articles that stimulated thinking about the general process of management or the development of the functions of management, most of the lasting contributions to management thought during the period were published in book form. The editorial policy of the management publications centered around the presentation of practical techniques and procedures that could be applied to manufacturing. Little mention was made of such subjects as objectives, policy formation, planning, human motivation, leadership,
or business ethics. Like the first textbooks for industrial organization and management courses, the articles in the management publications emphasized system and routines with suggestions for improving operative efficiency.
CHAPTER VI
EMPHASIS ON FUNCTIONS OF ORGANIZATION AND MANAGEMENT (1931-1940)

During the nineteen thirties, a change occurred in economic and industrial conditions. From 1900 to 1929, management thought had developed under a growth and prosperity situation in the economy. During most of the decade of the nineteen thirties, economic and industrial conditions were depressed. Unemployment was prevalent to a great degree. Financial institutions failed. Businessmen lost prestige as well as the confidence of the public.

ECONOMIC AND INDUSTRIAL CLIMATE

There was an almost uninterrupted decline in business activities for two years following 1930. Corporate income declined, and security prices dropped. The sales volume of American business suffered a significant reduction since unemployment resulted in less purchasing power. By the end of 1932, the volume of American industry had dropped to about half of the 1929 volume. In 1932, the total amount of money paid out in wages was approximately 60 per cent less than in 1929; and the total amount of dividend payments was reduced by about the same percentage. Over 12 million people were unemployed out of a civilian labor force of 50 million. The market economy established during the nineteenth century had collapsed. During the nineteen thirties, the labor unions increased their memberships from 3 million to almost 9 million. The average work week decreased from 49 to 44 hours. Corporation executives gained a portion of the economic
power and prestige that had belonged to the financiers. Professional or career management increased in importance of responsibility and public acceptance.¹

With the enactment of the National Industrial Recovery Act of 1933, the federal government entered the first stage of business-government relationships that resulted in increasing degrees of governmental controls on business operations. Along with an increasing amount of social legislation came a change in the type of business management in American industry. According to H. W. Prentis, Jr., there emerged career men in business who became known as professional managers. H. W. Prentis, Jr. described the new type of management personnel as follows:

I refer to what are commonly known as "career" men in business: men who can never hope to own any large portion of the enterprise of which they are a part; men who realize that the bonanza days of the old captains of industry are over; men who see in business something more than the mere making of money; men who are imbued with a deep sense of social stewardship; men who are keenly sensible of the fact that they are trustees of other people’s money with heavy responsibilities to discharge to employees and the public as well as to the stockholders; men who find deep spiritual satisfaction in the direction of their brains and energy toward the creation of a better and more abundant life for all of their fellow human beings.²

Prentis’ concept of the career or professional manager described the type of industrial leadership that had been the ideal of the pioneers in management thought at the beginning of the century. By the end of


the nineteen thirties, progress was evident in the change in management thought toward higher business ethics, a keener sense of social responsibility, and better trade morals. The mental attitude required for the practice of scientific management started the development of a professional point of view in management thought. Social legislation, governmental influence, and public opinion facilitated the acceptance of the concepts of service objectives and social responsibility for the management of business enterprises.

The economic and industrial climate of the decade of the nineteen thirties provided a challenge to those responsible for the management of the enterprises in the economy. Scientific management practices in industry and management education in the universities were established. Both provided the basis for a managerial philosophy that could help return the economy to a state of growth and prosperity. With the exception of the objectives of business, however, the economic and industrial climate of the nineteen thirties was reflected very little in the trend of management thought.

EMPHASIS ON ORGANIZATION

Management thought during the nineteen twenties was oriented around the concepts related to organization, system, and executive control in relation to the field of production. During the nineteen thirties, the trend in management thought was toward a general approach to organization with a developing interest in management functions. The literature of the
period continued to appear with titles of organization and management, but some publications bore titles limited to organization only.

Three publications dealing with organization appeared in the management literature in 1931. They were *Onward Industry* by James D. Mooney and Alan C. Reiley, *Organization Engineering* by Henry Dennison, and *Principles of Organization* by Henry P. Dutton.

*Onward Industry* consisted of the joint efforts of a top corporation executive, James D. Mooney, and a professor of history at Fordham University, Alan C. Reiley. It was the intent of the authors to expose the principles of organization, as they reveal themselves in various forms of human group movement, and to help industry to protect its own growth through a greater knowledge and more conscious use of these principles. They believed that the efficient application of the principles developed would result in the successful achievement of industrial objectives.

Mooney stated in the Foreword that "an objective is only another name for a human aim or purpose." It was his stated belief that an objective could be justified only by the worthiness of its purpose. He commented that the objective of an industrial enterprise was usually defined as profit through service. This involved a dual obligation.

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4 Ibid., p. xiii.
Such an obligation had to justify the service and also extend to the creation and just division of profits. Mooney reasoned that the profits presuppose the service and hence the worthiness of the service must be the first consideration. Inquiry was raised concerning the way to define the true and worthy purpose of industrial effort. To Mooney, the purpose of industrial effort was the alleviation of human want and misery. He believed that mere productive efficiency was not sufficient to justify the service provided by industry. Equal efficiency must be realized from the entire organization, including techniques of distribution.

Mooney argued that the highest techniques of production and distribution would be futile if poverty prevented purchasing power. He expressed a lofty ideal in his belief that the final task of industry should be to organize the activities of production and distribution for even the most backward countries so that purchasing capacity could be created and extended. A task of such magnitude would demand organization. Mooney reasoned that since all successful movements have been efficiently organized on the basis of certain principles, the efficient application of the principles of organization could solve the greater problems of modern civilization. His lofty ideal has been accepted in part by the Council for International Progress in Management and the International Cooperation Administration in their missions to improve production and distribution techniques in the underdeveloped countries.

Mooney's major thesis was that efficient organization must, above all, have its formalism, and this formalism must be based on principles. To prove his thesis, he attempted to discover, identify, define, and correlate the principles of organization.
It was Mooney's opinion that modern business leadership has been generally characterized by the capacity to create large organizations, and also by the failure of know exactly what to do with them. He was one of the first authorities to contribute any extensive analysis of objectives prior to a discussion of organization or management. In considering objectives, Mooney wrote that

Aim is only another name for objective, and human objectives of all sorts and kinds, constitute the forces out of which human history is made. The objectives are as various as the sum of human motives, but among them all there appear two kinds each of which in its own way may be called fundamental. The first of these concerns the aim and purpose of life, and is represented in the sphere of organization in the world's great religions, with their churches and ministers. The second concerns the actual necessities of this present existence. These in turn are two kinds, the psychic and the economic.5

Management thought entailed more consideration of the objectives of business in the nineteen thirties than previously. Mooney's treatment of the subject indicates the trend toward defining objectives instead of assuming them. This trend was continued into the nineteen fifties when it became common for professional managers to make clear statements of their objectives.

In Mooney's conceptual framework, the process of organizing began after the determination of objectives. He conceived of organization as a process and defined it as follows: "Organization is the form of every human association for the attainment of a common purpose."6 His concept

5Mooney and Reiley, op. cit., p. 3.
6Ibid., p. 10.
Management was distinct from that of organization, and was defined in the following manner:

Management is the vital spark which actuates, directs, and controls the plan and the procedure of organization. With management enters the personal factor, without which nobody could be a living being with any directive toward a given purpose. The relation of management to organization is analogous to the relation of the psychic complex to the physical body. Mooney considered the techniques of management to be the techniques of handling people. Management involved deep and enlightened human understanding. The technique of organization was described as that of relating specific duties or functions in a completely co-ordinated scheme. He felt that the technique of organizing must be anterior, in logical order, to that of management.

In divulging the principles of organization, Mooney used principle as being applicable to any underlying cause of more or less correlated facts in any particular field of investigation. A principle was applied to any fundamental truth that could be shown to be universal within its province.

The conceptual model of Mooney's principles of organization and their relationships consisted of: (1) the co-ordinative principle; (2) the scalar principle; and (3) the functional principle. He included a staff phase of functionalism. The logical frame of his principles of organization is shown in Figure 3.

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7Mooney and Reiley, op. cit., p. 13.
9Ibid., p. 542. The arrangement of principles of organization in the frame was credited by the authors to the logical laws as revealed in Louis F. Anderson's *Das Logische, Seine Gesetze und Kataxorsin* (Leipzig: Felix Meiner, 1929).
### FIGURE 3

**LOGICAL FRAME OF THE PRINCIPLES OR ORGANIZATION**

<table>
<thead>
<tr>
<th>1 Principle</th>
<th>2 Process</th>
<th>3 Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Coordinating Principle</td>
<td>Authority or Coordination per se</td>
<td>Processive Coordination</td>
</tr>
<tr>
<td>The Scalar Process</td>
<td>Leadership</td>
<td>Delegation</td>
</tr>
<tr>
<td>The Functional Effect</td>
<td>Determinative Functionalism (Legislative)</td>
<td>Applicative Functionalism (Executive)</td>
</tr>
</tbody>
</table>

The first principle of organization was presented as co-ordination, or the orderly arrangement of group effort. Its purpose was to provide unity of action in pursuit of a common purpose. Co-ordination, the first principle, expressed all other principles; all other principles were included in co-ordination. Mooney stated that:

Coordination, as the principle of organization, must have its own process and effect. Thus, the three forms of the scalar process are contained in the form of processive coordination. Likewise the three forms of the functional effect relate in the same way to effective coordination.10

The foundation of the co-ordinating principle was authority, the supreme co-ordinating power. It was based on a community of interest, the attainment of which was justified by the welfare of all. A doctrine was essential to provide an objective and discipline was required by either command or example.

The scalar principle pertained to the formal process through which the co-ordinating authority operates. Leadership was the form that authority took to enter into the scalar process; delegation permitted a higher authority to confer authority to a lower one. Functional definition was the assigning of functions for performance.

The functional principle effected the distinction among the different kinds of duties. There were determinative functions, applicative functions, and interpretative functions. These functions corresponded with the legislative, the executive, and the judicial functions in government.

The staff phase of functionalism was divided into the informative, the advisory, and the supervisory. In describing line and staff functions,

10 Mooney and Reiley, op. cit., p. 543.
Mooney advanced the concept of perpendicular co-ordination for line functions and horizontal co-ordination for staff functions.

Mooney classified the internal problems of industrial organization as co-ordination, decentralization, and functional correlation. The external problems of industry dealt with pressures on the internal organization from competition, social organizations, and the government.

After establishing the concepts of the co-ordinative principle, the scalar principle, and the functional principle in the relationship of the logical frame of principle, process, and effect, the authors proceeded to illustrate the principles of organization by showing how they evolved from military and church organization. It was in this portion of the book that Alan C. Reiley made his major contribution.

Mooney and Reiley's contribution to management thought was in the advancement of organization theory by showing the causal relationships of principles assumed to be fundamental. Their interest was not limited to production, for they developed a theory of organization that could be applied to any activity with an objective, be it industrial, military, or religious. They departed from the concept of organization and system and developed principles of organization that were universally applicable to organized human effort. Their contribution further established organization as an identifiable activity involving a keen intellectual ability. Management, however, was considered a separate area from organization.
Henry Dennison

Organization Engineering was written by Dennison to further the systematic development of the science and art of organization engineering, and increase the amount of research devoted to it. The purpose of organization engineering was to recognize and solve the problems concerned with making a success of group life. Dennison contributed to management thought an interesting philosophy of the manner in which individuals could be utilized and organized to achieve success in group life. He stated that

... organization engineering has to face at the outset the fact that the complication and variations of human nature present to it problems which it cannot now hope to solve with exactness. Yet, because these problems are with us in increasing numbers in the life of today, a growing understanding of their fundamental elements must be sought.  

Dennison's fundamental elements had a logical relationship. They are outlined in the manner in which he presented them.

1. The basic assumption was that all the strength of an organization comes from its members. Dennison started with individuals and worked toward an organization structure.

2. The first consideration was to get men working in groups. This involved the factors of diversity, frictions, teamwork, leadership, and motivation. The diversity of motives in single individuals and the presence of frictions among them had to be understood and overcome in order to build teamwork.

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12 Ibid., p. 10.
3. Teamwork could be achieved through the following factors:
(1) knowledge of a common purpose; (2) a desire for a common purpose;
(3) a desire to help each other; (4) some degree of functionalization
of task; (5) a knowledge of what teammates are supposed to do; (6) a
knowledge of what teammates are doing; and (7) a knowledge of how to
help one's teammates.

4. The duties of leadership were described as directing and
helping. Dennison believed that most men welcome leadership.

5. Motivation was based on the concept that an organization can
work only through the minds of its members. Managing an organization
had to be done through the wants of men rather than upon their acts.

6. The wants of men were discussed under the subject of impulsion.
Dennison contended that men's powers could be brought into steady and
permanent use only when they were impelled by the following four combined
impulsions: (1) self-preservation or regard for one's own and family's
welfare; (2) craftsmanship or liking for the work itself; (3) desire for
self-respect and regard for members of the organization and their good
opinion; and (4) loyalty or respect and regard for the purposes of the
organization.

7. When the members of an organization have become impelled to
greater efforts, there must be direction to steer their efforts toward
the objectives of the organization. Direction resulted from training
for the jobs held along with education for the future.

8. The task of management was described as the stimulation of
men to act with their full powers and to direct their efforts toward
the organization's objectives. This necessitated an arrangement of their mutual relationships into the form or structure of the organization. The best structure of an organization depended on the task it was meant to perform. Dennison stated that "structure is not an end in itself and can do nothing by itself." He believed that principles of organization structure were good only to the extent that they could develop organizations better than by trial and error methods.

9. It was through the organization structure, however, that men's efforts were channeled for success in group life.

Dennison made an interesting contribution to management thought by logically tracing the means to combine individuals into working groups, impel them to action, direct their efforts, and achieve success in group life through the organization. He conceived of management as a separate entity from organization in that management's task was to stimulate men to act and then direct their efforts through the organization toward the stated objectives. Instead of approaching the subject of organization from the viewpoint of work functions to be done and then assigning men to the functions, he started with the individuals and ended with the organization structure. In the nineteen fifties, some behavioral scientists were experimenting with his basic ideas.

Dennison contributed some worth-while concepts about organization structure. They are listed as follows:

13 Dennison, op. cit., p. 123.

1. An organisation structure was developed from experience instead of being planned. Dennison gave an explanation of how organisation usually was formed.

   It is more usual for men to start an enterprise in informal, unorganised fashion and then shape up a structure of organisation than to start with the organisation first. Sooner or later, however, a structure of organisation has got to be built and constantly rebuilt—as will fit the best available men into the tasks to be done.15

2. An organisation was adapted to the leaders by building the factors of leadership into it.

3. Knowledge of the task of an organisation was required before its form could be determined.

4. Departmentalising was the means for distributing the work load in an organisation.

5. Committees existed to provide advisory services and to effect co-ordination.

6. Continuous reorganisation and rebuilding of the organisation form were required to meet changing personnel and environmental conditions.

Planning was mentioned in connection with authority under the subject of organisation structure. Dennison's main interests were in organising, leadership, and motivating. Little attention was given to planning and controlling. For the literature of management, he assembled some elements of organizing and arranged them in the order of their occurrence in the development of an organization form in industry. His contribution was

15Dennison, op. cit., p. 125.
a logical explanation of what usually occurred in the actual practice of organizing. This contrasted with Mooney's concept of what should be done to follow the principles of organization.

Henry P. Dutton

An unusual approach to the study of organization was followed in Dutton's *Principles of Organization*. Organization was defined as "the art of applying resources effectively to the accomplishment of a purpose."\(^{16}\)

Dutton conceived of organization as one of the most universally applicable of the arts. It required the ability to secure order, arrangement, and functional relationship of the parts of a situation. This ability was assumed also to be a fundamental quality of all science, not only for group undertakings, but for all planning and forethought of the individual as well. Consequently, Dutton argued that there could be a science or theory of organization underlying the practical art or technique of organization. His approach to the analysis of organization included: (1) organization of will; (2) thought organization; and (3) performance.

He explained his concept as follows:

An organization is simply a grouping of people to perform more involved acts, often a long series of acts in which one person, to secure his objective, creates objectives which move others to the action he desires. But, however complicated the activity may become, we may still trace three stages: desire or will, perception or thought, and action or performance.\(^{17}\)

Organization of will encountered two problems. The first problem consisted

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\(^{17}\) *Ibid.*., pp. 4-5.
of reaching an agreement as to purpose among the owners of the enterprise. The second problem was the reaching of an agreement between the owner or owners and the employees. Thought organization was closely associated with will because it was assumed that action could not be decided upon without first realizing its results to some extent. Dutton's concept of thought organization was comparable to the planning process that preceded performance. He considered performance to be the special function of the line organization that put plans into action.

For Dutton, the organization of will determined the objectives. Thought organization involved decision-making and planning. Performance consisted of the activities that were planned to achieve the group purpose. His conceptual framework of organization resulted in some advanced contributions to management thought concerning creative thinking and planning. He stated that:

\begin{quote}
No human activity can take place without the making of some sort of a decision or response to the situation. A considerable part of the machinery of organization is concerned with the collection, transmission and use of the facts on which to base these decisions.\end{quote}

Dutton was including in organization an area that later authorities treated as planning in a manner distinct and separate from the field of organization. Under organization of thought, he described routine decisions, judgment, the scientific method, and the experimental method. His treatment was one of the first to relate some methods for thinking to the process of decision-making. His basic approach became a popular subject in the literature of management twenty-five years later.

\begin{footnote}
18Dutton, op. cit., p. 30.
\end{footnote}
Dutton devoted a separate chapter to creative thinking in which he illustrated the four stages of creative thought that Graham Wallas had published in his book in 1926. He also outlined the scientific method, and he made the following observation about creative thinking.

A positive and vital attitude toward life, and intellectual curiosity (which requires vitality in excess of the day's demands) contribute greatly to creative thinking. The worried business man seldom "has the time" to make constructive plans or to think through the suggestions which employees or the day's events bring to him.19

Consequently, he advocated staff assistance for creative thinking and the use of research organizations. His basic idea was followed widely in the nineteen fifties when operations research teams became popular.

Although Dutton included planning under organization, he was one of the first authorities to contribute a separate treatment of the planning activities. He outlined the following cycle of activity to explain planning in relation to organization of thought. The cycle of activity included the following steps for carrying out any activity.

1. Information. Facts of the situation were collected to aid in deciding upon a course of action.

2. Decision. On the basis of the facts collected, the results of the various courses of action were visualized, and the most promising course selected.

3. Dispatch. Provision was made for issuing orders and actions called for by the plan.

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19 Dutton, op. cit., p. 54.
4. Performance. Plans were put into action.

5. Progress Record, Report, and Follow-up. Results of performance were reported and recorded.

Dutton's cycle of activity was close to later concepts of the management process that related the functions of planning, organizing, and controlling. Although Dutton's book was about principles of organization, he gave little mention of organization structure or form. His concepts involved mainly the organization of thought prior to performance in a formal organization and the means of utilizing the human factor within the organization. His major contributions to management thought were his introductions into the literature of concepts relating to creative thinking, decision-making, planning, and the cycle of activity which was similar to the management process that later evolved. Like Mooney and Bailey and like Demison, Dutton's concept of organization encompassed whatever management activities there were. Management was considered subservient to organization. During the nineteen thirties, this concept was modified.

TREND TO MANAGEMENT AND EXECUTIVE FUNCTIONS

By the middle of the nineteen thirties, there were indications of a trend in management thought toward the treatment of functions of executive leadership and management. The literature of management contained concepts of management beyond the organization and system approach that characterized the nineteen twenties. Ralph C. Davis published a booklet


**Ralph C. Davis**

The conceptual framework of the basic factors in organization and operation that Davis contributed to management thought in both of his publications in the nineteen thirties started a new trend in management thinking. In addition, his concept of the functions of executive leadership and the objectives of business had a strong influence on subsequent contributions to the literature of management.

Davis made an analysis of the basic factors involved in the organization and operation of a business. He synthesized them into the following logical relationship.

1. The ultimate authority from which business derives its right to operate is organized society.

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2. The objectives of a business are those values which a company must preserve, acquire, create, or distribute to justify its right to exist.

3. The ideals of a business are those ethical criteria by which a company may judge the propriety of its acts in achieving its objectives.

4. Executive leadership is the motivating force that stimulates and directs the business organization to the satisfactory achievement of its objectives through the proper performance of its functions.

5. Policies are those principles and rules of action that guide an organization to its objectives in the light of its ideals.

6. A business function is any phase of the work that can be distinguished clearly from other phases, viz., sales, production, finance, personnel.

7. Faculties are human attributes, skills, capacities, etcetera that individuals and groups must have to perform their functions.

8. Physical factors of environment include items of capital goods and supplies that aid individuals or groups in the performance of their functions.

9. Organization has to do with the development and maintenance of proper relationships among functions, faculties, and physical factors of environment, leading to willing cooperation and effective executive leadership.

10. Morale is a mental condition of organization that induces individuals and groups to subordinate willingly their own purposes to a common end, . . . and to give their best efforts without pressure.

11. Structure of organization means the relationship among functions, individuals or groups, and physical factors, that combine the various units of executive and operative responsibility into an effective whole.

12. Operations has to do with the development and maintenance of proper relationships among functions, faculties, and environmental factors in a particular situation, relative to the effective and economical completion of specific projects.
13. A business procedure is a structure of concurrent and sequential relationships in performance . . . . underlying the completion of a specific project or kind of project, together with specifications for the economical and effective performance of the work.

14. Control is the regulation of activities in accordance with the requirements of a business plan, to the end that the final objectives of a project may be achieved properly.

15. A business plan is a definitely determined basis of business action. The basic business factors listed are the principal elements that must be considered in the development of a business plan.24

The schematic model that illustrates the conceptual relationship of Davis' basic business factors is shown in Figure 4. He was the first author to identify and relate the basic factors of business in relation to the function of management. Although all of the factors were previously known and written about, his synthesis of them provided a useful vehicle for the study and teaching of management thought.

Other significant contributions to management thought by Davis were his classification of business objectives, his concept of the functions of executive leadership, and his treatment of the principal functions of control.

He classified business objectives as follows: (1) primary objectives were the service objectives of a company, in the fields of organization and operation; the collateral social objectives; and the personal objectives of individuals and groups; (2) secondary objectives involved the economy and effectiveness of operations.

FIGURE 4

BASIC FACTORS IN ORGANIZATION AND OPERATION

Davis stated that "the work of the executive can be broken down into three organic functions—planning, organizing, and controlling." Planning involved the exercise of creative thinking in the solution of business problems. He made a distinction between creative and routine planning.

A distinction was made by Davis among administrative management, operative management, and staff management. For him administrative management involved the work of general planning, organizing, and administrative control. Operative management entailed specific planning, organizing, and operative control. The latter covered the area of the performance of work and the completion of projects. Staff management supplemented the abilities of administrative and operative executives.

Davis' concept of organic functions of operative performance permitted a precise functional analysis and functional differentiation of work so that an organization form could be properly established for any field of business activity. His principal functions of control have been the basis of references in textbooks and management literature. They were described as: (1) routine planning; (2) scheduling; (3) preparation; (4) dispatching; (5) direction; (6) supervision; (7) comparison; and (8) corrective action.

Management and executive leadership were used by Davis as synonymous terms. Thus his functions of management developed into planning, organizing, and controlling. The identification and explanation of these terms in

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the management literature influenced later management authorities to follow his line of reasoning. Henri Fayol was the only person who had described previously the functions of administration in a logical process. Eventually, the concept of a management process would become popular and be used as a basis for management development programs in industries and universities.

Davis gave to the management literature many precise definitions and classifications in the field of management. He contributed sharper concepts of management functions and factors in business. His contributions enabled management scholars to think more analytically about management problems and do less describing of routines and systems. His concepts have facilitated the development of systems of management thought along the lines of a management philosophy or theory.

Ordway Tead

In The Art of Leadership, Ordway Tead made inquiry into the meaning and methods of leadership with reference to the process of achieving group action. His approach followed the methods of the behavioral scientists as compared with the engineering approach used by Davis to analyze and synthesize management functions. Both men came to similar conclusions.

Tead defined leadership as "the activity of influencing people to cooperate toward some goal which they come to find desirable." Davis defined executive leadership as "the force in business that stimulates,

\[27\] Tead, op. cit., p. 20.
motivates, and directs an organisation. Their concepts of leadership were similar; so were their treatments of the functions of leadership.

Tead listed the following categories of executive work.

1. Planning and defining policies and procedures
2. Organizing the activities of others
3. Delegating authority and responsibility
4. Controlling these in terms of results required
5. Supervising the general progress of results
6. Giving general orders or instructions
7. Interpreting and transmitting policies
8. Training key subordinates to carry the executive load
9. Coordinating all the various efforts and elements
10. Stimulating and vitalizing all the individuals who are contributing their efforts

Tead's major contributions to management thought were his concepts relating to leadership, executive work, objectives, and decision-making. To him, executive work and leadership had much similarity. However, he emphasized the area of stimulation or motivation in relation to leadership. Tead's leadership concept was one of "power with" people rather than "power over" people.

The importance of objectives in relation to leadership was of interest to Tead. He believed that leadership was only as strong as the objectives were sound. He conceived of an objective as an aim or purpose "which defines the field of desire and the direction of effort of an associated group of people." Management authors in the nineteen thirties were giving serious attention to the propriety of the objectives of business.

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28 Davis, Industrial Organization and Management, p. 31.
30 Ibid., p. 53.
Tead was no exception. He discussed objectives as follows:

... today a critical scrutiny of objectives is one of the most crucial duties imposed upon many leaders, especially in those organizations which directly or indirectly have to do with the efforts of people to get a living. It has become a commonplace to say that technically the resources are or might be available in Western Civilization to supply an adequate standard of material comfort for the entire population. And the fact that we fall far short of that attainment is generally recognized as having to do with the objectives of our economic and social institutions. The question is in whose interests are they being run? Are corporations which produce and distribute goods prompted only by the desire to make money, or do they wish also to serve society with a needed service?31

Tead believed that it was of great importance for leaders in industry to accept the responsibility for setting proper objectives. He commented that the objectives of an organization must appeal to the organization members and enable them to gain a feeling of importance in working toward desired purposes. According to Tead, leadership had two duties regarding objectives. One duty involved the creation of new objectives; the second duty required the persuading of followers to accept objectives which were set by assuring them that they would gain by doing so. Tead made a distinction between primary and secondary, basic and supplementary, objectives. He acknowledged the influence of Davis on his classification of objectives.

Tead considered decisiveness an essential quality of leadership. This demanded the ability to make a decision instead of procrastinating. He described the "process of deciding" and advocated the reasoning process of the scientific method as the best approach to making a

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31 Tead, op. cit., pp. 53-54.
decision. His contribution to decision-making was not original as to the method for decision-making. His explanation of the function of decision-making as a factor of leadership was significant. In the nineteen fifties, the study of the decision-making process and the techniques for decision-making became a popular subject in the literature of management. Tead's concepts of leadership, executive work, objectives, and decision-making were important contributions to the trend of present-day management thought.

Chester Barnard

Barnard in *The Functions of the Executive* described from his experience the functions, processes and problems of the executive or the leadership of organisations, and the management of cooperative systems. His contributions to management literature were: (1) an exposition of the theory of cooperation and organization; and (2) a study of the methods of operation of executives in formal organizations. Although his treatment of executive functions differed from those of Davis and Tead, he conceived of executive leadership or management as a functional process.

Organization was defined by Barnard as "a system of consciously coordinated activities or forces of two or more persons."32 His conceptual framework of organization included formal organization, informal organization, specializations for purposes of work or objectives of effort, incentives, authority, decisions, and opportunism.

32 Barnard, *op. cit.*, p. 73.
Barnard based the co-ordination of efforts essential to a system of cooperation on an organized system of communication. Executive functions were required to maintain a system of cooperative effort. He listed the essential executive functions as follows: (1) to provide a system of communication; (2) to promote the securing of essential efforts; and (3) to formulate and define purpose. To provide a system of communication, there had to be a coalescence of executive personnel and executive positions. The securing of essential services from individuals required the bringing of persons into cooperative relationship with the organization and the eliciting of the services after such persons were placed into the organizational relationship. The formulation of purpose and objectives involved the aggregate of action taken. The critical aspect of this function was the assignment of responsibility and the delegation of objective authority. Barnard conceived of the executive functions as elements in an organic whole. Their combination in a working system made an organization. The combination of the functions resulted in two opposite incitements to action. The first was the concrete interaction and mutual adjustment of the executive functions as determined by the factors of the environment of the organization; the second was the maintenance of the vitality of action or the will to expend effort.

The executive functions, as described by Barnard, provided the basis for much functional specialization in organizations and had no

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33 Barnard, op. cit., p. 217.
34 Ibid., p. 233.
concrete existence—they were parts of a process of organization. The executive process involved the responsibility for decisions and actions for effective performance in the attainment of objectives. It was a function of integrating all the general and specific requirements for organizational effectiveness. The executive functions were conceived as a process by Barnard; but he did not identify them in specific terms such as planning, organizing, and controlling. He commented that control was not unimportant, but that efficiency and effectiveness were the dominant elements. Efficiency as applied to organization was the maintenance of an equilibrium of organization activities through the satisfaction of the motives of individuals to induce these activities. His concept embraced the ideas of management by objectives through the mutuality of interests of the individuals in an organization in the performance of the essential functions. This involved a system of human activities in the performance of the functions of creating, transforming, and exchanging utilities.  

Barnard believed that the most important strategic factor in human conduct was executive capacity. Purposeful cooperation was possible only within certain limits of a structural character, and it arose from the forces of all who contributed to it. He stated that cooperation, not leadership, was the creative process in generating human effort; but that leadership was the indispensable stimulant for the forces of cooperation.

35 Barnard, op. cit., p. 240.
The management concepts in *The Functions of the Executive* by Barnard developed management thought in the areas of executive functions and an executive process. His reasoning served to separate from the field of organization some definite areas of management activities. He stimulated interest in the fields of motivation, decision-making, communication, organizational relationships, and the importance of objectives. His approach to management thought was analytical and dynamic instead of descriptive.

**Characteristics of Management Textbooks**

The textbooks for management courses in the universities contributed little to the development of management thought during the nineteen thirties with the exception of *Industrial Organization and Management* by Davis, discussed previously. *Management of an Enterprise* by Balderson, Karabass, and Brecht appeared in 1935. William N. Mitchell published *Organization and Management of Production* in 1939. *Principles of Industrial Management for Engineers* by L. P. Alford was published in 1940.

Balderson, Karabass and Brecht\(^{36}\) gave a descriptive treatment of the functions and procedures concerned with the operation of a manufacturing enterprise. The authors merely defined management and then proceeded to describe the operating routines of production. Management was defined as "the art and science of organizing, preparing, and directing human effort applied to control the forces and to utilize the materials of nature.

for the benefit of man." An indication of the trend of management thought can be illustrated by the changed concept of management in the revision of their book in 1949. At that time, they defined management as "the stimulating, organizing, and directing of human effort to utilize effectively materials and facilities to attain an objective." The management functions of planning, organizing, and controlling were introduced in the revision and a chapter was devoted to explaining their nature. Decision-making also was discussed in a separate chapter. The authors, in their revision, gave evidence of the trend of management thought toward objectives, functions of management, and decision-making as identifiable elements of managerial activities.

L. P. Alford described the industrial and production processes in a manner similar to the textbooks of the nineteen twenties. He made a distinction between administration and management as follows:

Administration is the force (personnel group) which determines the objective for which an organization and its management are to strive, and the broad policies under which the executives are to operate.

Management is the force (personnel group) which leads, guides and directs an organization to the accomplishment of a predetermined objective.

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37 Balderson, Karabasz, and Brecht, op. cit., p. 5.


40 Ibid., p. 86.
L. P. Alford's contribution to management was important by way of his personal influence in the professional societies, especially in the Management Division of the American Society of Mechanical Engineers. His handbooks of management compiled the best current practices of management. His services as an editor and publisher of management publications advanced management education. However, he did not contribute directly to the creation of management concepts or the philosophy of management; he was a collector rather than a creator.

Organization and Management of Production by Mitchell was descriptive in nature. He described managerial organization of production operations; the planning of production operations, and the control of plant investment, working capital, and labor costs. However, he made no attempt to identify the functions of management, and his approach was more similar to the economics of production than to the management of production.

The textbooks for management education in the nineteen thirties continued to be oriented around the production function. They were mainly descriptions of production processes, environmental conditions, and personnel practices. The major contributions to management thought were predominantly from businessmen. However, the college professors were beginning to make original contributions to the literature of management in the areas of business objectives, leadership functions, and decision-making, viz., Dutton and Davis.

Charles P. McCormick

Charles P. McCormick published *Multiple Management* in 1938, and added a new term to the literature of management. Multiple management became a concept of participative management, whereby the efforts of many managers could be utilized toward an organization purpose. It had the connotation of a force of ideas upward in an organization.

When Charles P. McCormick found himself in the president’s position of an established company, he searched for a way to utilize the talents of young men. He stated:

Our first objective then was to find a way to stimulate all of our executives to apply as much of their mental capacity as possible to the management of the business. It was necessary, obviously, to lift our men out of routine ruts which suppressed imagination and inventiveness, by confronting them with problems that were alien to their own experience.

McCormick originated the junior board of directors idea and practice to unleash creative suggestions and imaginative recommendations of promising young executives. The junior board of directors met regularly and forwarded recommendations concerning any area of the business to the senior board of directors for action. The results were satisfactory and proved that the ideas of youth were invaluable to any business. Subsequently, a factory board and a sales board were organized. McCormick

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43 Ibid., p. 3.
stated that the board plan of management induced young men to utilize increased portions of their mental capacities.

Multiple management as a practice and a concept was imitated by many companies that modeled their junior board practices after the McCormick plan. The idea of multiple management developed into a management method for the generation of ideas upward in an organization and a training device for the development of managers.

E. H. Anderson and G. T. Schwenning

The Science of Production Organization by Anderson and Schwenning was a scholarly contribution involving an analytical study of organization. The authors outlined and described the fundamentals underlying the process of organization for production. They compiled and recorded the thoughts of most of the authorities on organization prior to 1938. Their approach was limited to the subject of organization; their concern was not with the entire management area. After presenting the concepts of many authors on the subject of organization, they concluded that there is a science of organization, and that the science is the product of evolution rather than a single theory. Anderson and Schwenning made a contribution to the literature of management with their recording of concepts pertaining to organization, but they did not make any original contributions to management thought.

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James J. Gillespie

The Principles of Rational Industrial Management was published in 1938 by Gillespie. He contended that management was rational activity and that the term "rational management" should be used instead of scientific management. He argued that the scientist has one fixed subject whereas the manager has many subjects to deal with. It was pointed out that the scientist tries to collect and interpret facts in comparison with the manager who tries to collect, interpret, and then apply the facts. Gillespie came to the conclusion that scientific management, while based on the inductive or scientific method, experienced its largest benefits from the application of well-established economic principles backed by sharpened observation and measurement aided by stop watches and other devices and mechanisms. He believed that management was more philosophical than scientific.

Gillespie proposed a rational management method as a general approach to the problems of management. In his approach he listed three principles which he said broke away from the scientific method. They were

... where the problem has to do with decision on human conduct, the purely logical method of adjudging facts in terms of business objective should be modified by reference to the purpose which motivated the conduct in question, and decision should include recognition of the goodness or badness of the purpose.

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46 Ibid., p. 161.
... if decisions on new codes and procedures arising from the application of logical method to business affect the human factor, they should be so applied that they fit into group psychological structure and will thus have group acquiescence (or acceptance) if the group is intelligent.47

Before decisions proved correct in terms of profitable operation are applied, the social effect of such decisions should be considered and the application should include recognition of business social purpose.48

Gillespie contributed to management thought a proposal for rational management instead of scientific management. He suggested a modification of the scientific method by means of experience and principles. However, his contribution to management thought had little influence on others in the field; he mistook the method of scientific management for its principles.

Luther Gulick and L. Urwick

Papers on the Science of Administration49 was edited by Gulick and Urwick in 1937. The publication consisted of a collection of essays by well-known authorities who had made previous contributions to management thought.

V. A. Graicunas' article on "Relationship in Organization" was included in the collection which became the source for information about his famous theorem. Graicunas demonstrated the reason underlying the "span of executive control." He illustrated mathematically the logic

48 Ibid., p. 162.
of making the "span of executive control" from 3 to 7 subordinates. His demonstration that the complexity of relationships in an organization tends to increase geometrically as personnel are added arithmetically became known as Graicunas' theorem.

Urwick's paper entitled "The Functions of Administration" demonstrated the logical relationship of Fayol's functions of administration with Mooney and Reiley's principles of organization. This logical relationship of two separate approaches to management and organization fundamentals provided evidence for the concept of identifiable management functions that could be integrated into a management philosophy.

Luther Gulick's paper, "Notes on the Theory of Organization," included his concept of the work of a chief executive. He conceived of executive work as being composed of functional elements, which were: (1) planning; (2) organizing; (3) staffing; (4) directing; (5) co-ordinating; (6) reporting; and (7) budgeting. In the literature of management and public administration, his concept of the functional elements has been identified as POSDCORB.

Some other contributions were from James D. Mooney who wrote on "The Principles of Organization" and from Mary P. Follett whose paper on "The Process of Control" was reprinted.

Gulick and Urwick made a significant contribution to management education by the publication of Papers on the Science of Administration. The papers were widely read and often used as references by later authors.

President's Committee on Administrative Management

The most important study of national scope in the area of management during the nineteen thirties was accomplished by the President's Committee...
The President's Committee on Administrative Management applied the known fundamentals of management to the task of conceiving a more efficient form of organization for the executive branch of the federal government. Their concepts in brief were:

1. Every administrative activity should be set up with a single responsible head.

2. Boards should not be burdened with administration. They should be advisory.

3. All government corporations should be brought under supervision and control through transfer into regular departments.

4. All administrative agencies should be placed under 12 departments.

The intent of the President's Committee on Administrative Management was to provide for proper organization through application of the following principles:

1. Unity of command or the concentration of authority and responsibility

2. Functional integration or the grouping of similar functions into single operating units

3. Co-ordination of staff services or the use of boards to advise the operating officials

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51 Ibid., pp. 43-44.
The recognition given to the Report of the President's Committee on Administrative Management served as evidence in support of the influence of management thought on the public. Management fundamentals and concepts had become sufficiently recognized and established to warrant their application to problems faced by the nation's chief executive. Experience and tradition were modified by management principles, which had become known through management education.

Summary

1. In the first half of the nineteen thirties, the literature of management showed a major interest in the field of organization. Management thought at that time included the concepts of leadership and management within the scope of organization.

2. During the last half of the nineteen thirties, the contributions to management thought shifted in emphasis to leadership and management activities. Attempts were made to identify and separate functions of leadership or management and differentiate them from the total organization concept.

3. The concept of management or leadership as a process of logically related functions became established. The terms leadership and management were used synonymously; the functions and activities identified under each term were described as being the same.

4. Management thought included concepts of creative thinking and decision-making in relation to the planning function. The concept of management was expanded from the managerial or executive control concept of the nineteen twenties.
5. Authors in the nineteen thirties began to formulate more precise definitions for the basic terms in the field. More precise definitions of terms led to sharper analytical thinking about the functions of leadership or management. The sharper or more detailed analysis of the activities involved in leadership or management led to a differentiation of the elements of management that could be combined into management philosophy or theory.

6. The management literature prepared for management education in the universities continued to contain the concepts used in the nineteen twenties, with two exceptions. The textbooks were oriented around the production process. Industrial executives were doing more original thinking and publishing about new management concepts than were college professors.

7. The decrease in the production and sales volume in the economy was reflected little, if at all, in the management concepts in the literature of the period. An exception to this statement could be made for the subject of business objectives. During the nineteen thirties, almost every new contribution to management literature made inquiries into the purpose of business and the propriety of the objectives of business. Authorities began to classify objectives and demonstrate their importance to the functions of leadership and management. Whereas the management concepts of the previous decade assumed objectives, the authors of the nineteen thirties started with objectives as a focal point for management thinking. An example of the inquiry concerning the objectives of management in the literature follows:
Scientific management, and indeed all management, has been too often allied with money making, profit seeking, and acquisition; whereas its proper concern is not with such activities. Its subservience to profit seeking and business is due entirely to the economic system under which it originated and under which it has had to operate. Under capitalism it must serve capital, and in serving capital it must produce dividends because it is the dividend seekers who are in control of industry. Were labor in control of the production system, it would be compelled to serve labor and thus produce wages. In having for its goal the creation of useful goods and services, however, scientific management seeks to serve neither capital nor labor as such, but the consumer of these goods and services. Its object is not scarcity but plenty, not high prices but low prices. It is in thus serving the consumer that it offers its benefits to all of society.

The economic philosophy of scientific management is therefore nothing new in economic theory nor is it difficult to comprehend. It is simply maximum production at minimum real cost. The technique of scientific management is the technique of efficient, economic production in terms of net utility. A full acceptance of this economic doctrine, that production is carried on primarily for the benefit of the consumer, is the mental revolution that Taylor sought to bring about in the thinking of both capital and labor.52

CHAPTER VII

EMPHASIS ON GENERAL MANAGEMENT (1941-1950)

The economic and industrial climate of the nineteen forties was characterized by conditions of war in the first part and postwar planning and reconstruction in the latter part. The United States entered World War II on December 8, 1941; the war had been in progress since September 1, 1939 in Europe. Among the many mobilization programs initiated, management training was included with engineering and science.

THE ENGINEERING, SCIENCE, AND MANAGEMENT WAR TRAINING PROGRAM

The Office of Education of the Federal Security Agency, in cooperation with many of the nation's educational institutions, conducted the Engineering, Science, and Management War Training Program from October 9, 1940 to June 30, 1945. The purpose of the program was "to meet the shortage of engineers, chemists, physicists, and production supervisors in fields essential to national defense."1

Although the program was planned originally for training in engineering, it was expanded to include chemistry, physics, and production supervision. As the program continued, there was a trend toward greater emphasis on the management aspects of the courses rather than on technical training. The courses offered were short and intensive for the purpose of training people in immediately usable techniques for specific duties in war industries.

1Public Law No. 146, 77th Cong., 1st sess. (July 1, 1941).
Insofar as possible, the training courses were offered and administered by the nation's educational institutions.

During the life of the program, 227 colleges and universities participated in it. There were 42,568 courses given. The number of participants totaled almost 1,795,000, of which 387,238, or 21 per cent, were in production supervision. Only 6 per cent of the men and women enrolled in the courses, however, were full-time students.

The management training phase of the program had the following objectives:

1. The training of supervisors
2. The training of functional specialists in production planning, motion and time study, production control, and safety engineering
3. The training of executives and subexecutives for greater responsibilities
4. The training of teachers of management

A typical list of courses offered in the area of management consisted of:

1. accounting and control;
2. industrial organization and management;
3. personnel administration and labor relations;
4. office management;
5. procurement and stores;
6. statistics;
7. traffic management; and
8. special management problems in war production. Of the management courses conducted, the most participants were in personnel administration, with 31 per cent of total enrollment; and industrial organization and management, with 25 per cent of total enrollment. The total cost of the program was almost $50 million.²

Several permanent benefits resulted from the Engineering, Science, and Management Training Program:

1. Many of the participants in the management courses continued their interest and education in the management field after the close of the war. Consequently, the management curriculum in colleges and universities was enriched by additional undergraduate and graduate courses in management.

2. Management instruction was continued in company training programs. Both universities and industrial companies initiated executive development or management development conferences and programs as a means of improving management practices and of developing the managerial skills of increasing numbers of managers required for expanding business organizations in an expanding economy.

3. Teaching methods for management education were improved. A premium was placed upon effective management instruction because of the need to upgrade the employees of war industries and train personnel from other occupations in the war production industries. Evidence was accumulated to prove that managerial skills for operational jobs could be taught in a classroom. An attitude of continuous appraisal of management course content was adopted.

4. The newly trained teachers in management subjects became acquainted with managerial practices and problems in the real world. They provided a stimulus to educational institutions to offer more appropriate courses in management for students following the war. Some of them joined the faculties of the schools of commerce and business.
In Chapter IV, an explanation was made of the influence of the *Waste in Industry* study and report on the development of management thought and the attitudes of business managers during the nineteen twenties. The Engineering, Science, and Management Training Program served as an impetus to refinement and development of management thought in the nineteen forties. The teaching of management to thousands of supervisors, executives, and managers required clear concepts of management functions and a logical management system of thought. It was essential that management be taught in terms of a body of fundamentals that could be applied to the art of achieving project objectives. The description of routines or procedures was not acceptable to mature and experienced industrial personnel. However, the teaching of management fundamentals and principles in courses for supervisors and executives proved to be useful and acceptable. Management was further recognised and established as an intellectual activity that could be defined and developed.

**A GENERAL MANAGEMENT VIEWPOINT**

The contributions to management thought during the nineteen forties indicated a developing interest in the field of general management or what was termed "top management." The inquiries and studies concerning the objectives of business during the previous decade served to focus attention on the top management function. The continuing rise in status of the career manager or the professional manager created an interest in the responsibilities or managerial activities of top managers who were not owners of a business.
Experiences derived from rapidly expanding organizations for war production continued the interest in searching out basic principles or fundamentals that could guide managers in achieving organizational effectiveness. The importance of the planning function achieved greater recognition as a result of new situations caused by war production and a postwar economy. Dependence on organization and system for the conduct of industrial activities was more justified under peacetime conditions than under the war and postwar conditions. The latter conditions required the increased use of management activities that involved planning, creative thinking, and more difficult decision-making. The contributions to the literature of management began to reflect the nature of problems confronting those responsible for managing industrial companies. The problems rising out of the management of military operations were similar.

**Holden, Fish, and Smith**

One of the first research studies in the area of general management was reported in *Top-Management Organization and Control*³ by Paul Holden, Lounsbury S. Fish, and Hubert L. Smith in 1941. The scope of the research study covered the top management practices of 31 selected industrial enterprises. Top management included three groups of executives, which were (1) boards of directors; (2) general managers responsible for the business as a whole; and (3) divisional managers responsible for major departments, divisions, or subsidiaries of their companies. In the

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summary and conclusions of the research study, the authors stated that the primary responsibilities of top management are:

1. **Farsighted planning and clarification of objectives**, visualizing the needs of the business and determining its most advantageous future course
2. **A sound plan of organisation**, enabling all of its parts, individually and collectively, to function most effectively in reaching the common objectives
3. **Fully qualified personnel in all key positions**, insuring each individual's proper contribution to the whole program
4. **Effective means of control**, permitting top executives to delegate wide responsibility and authority, thereby freeing themselves of administrative detail in order to concentrate on broad planning and direction

This research report was a very significant contribution to management thought because it disclosed the same functions of management that previous scholars had identified and described, viz., planning, organizing, and controlling. Staffing was added to cover the leadership responsibility. Through a field research study, Holden, Fish, and Smith identified and differentiated elements in the management process that Fayol, Davis, and Mooney had obtained through logical analysis without experimentation.

Holden, Fish, and Smith reported: "One of the greatest needs observed during the course of this study is for more adequate planning and clarification of future objectives, both near-term and long-range." They facilitated subsequent inquiries into the subject of planning and the planning process. Their contributions to management thought included concepts pertaining to leadership, organization, control, and systems,

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4Holden, Fish, and Smith, op. cit., p. 3.

5Ibid., p. 4.
this some time before attention was given to planning in the literature. They classified organization according to top management organization, operating organization, staff organization, and committee organization. The term administration was avoided in the research report and it was replaced by the use of either general management or top management. The authors' terminology reflected the trend in avoiding a distinction between the concept of administration and management. The concept of a management process (or an administrative process) resulted in treating the terms as synonyms.

The discussion of Bolden, Fish, and Smith pertaining to the need for fully qualified personnel in key positions directed attention to the value of executive recruitment and executive development programs.

The concept of control as a basic process was described as embracing the following elements: (1) objective (what is desired); (2) procedure (a plan for how and when action is to be done, an organization to determine who is responsible, and standards for what constitutes good performance); and (3) appraisal (for determining how well action is taken). Control was considered as the device for delegating authority and responsibility to others while retaining the means for assuring that results are satisfactory. The concept of control as a process by the authors indicated the trend of management thought toward the concept of the specific functions of management as processes within the over-all management process. The functions of organization and control were explained in detail by Holden,

6Holden, Fish, and Smith, op. cit., p. 77.
Fish, and Smith in their research report. The function of planning was declared to be the one most in need of study, yet little attention was devoted to it. The importance of setting objectives was established.

Edward H. Hampel

Edward H. Hampel contributed to management thought one of the first analytical explanations of the planning function in detail as to method and application. In 1945, Hampel published *Top-Management Planning*; it was aimed at presenting the methods of planning needed for the postwar operations in industrial companies. He enlarged the scope of planning from its previous orientation around the concepts of production planning and budgeting. His approach to planning embraced all of the various spheres of industrial planning such as planning the size of the enterprise, product planning, process planning, plant planning, sales planning, and machine planning. A general approach to the function of planning was developed, and illustrations of the methods for planning were then applied to the various spheres of industrial operations.

Hampel conceived of planning as a thinking process that should precede any action. Planning consisted of determining the best ideas for: (1) the goal of the actions that were required; (2) the necessary actions to attain the goal; and (3) how the actions were to be carried out. The technique for planning was based on fact finding. An analysis

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8Ibid., p. 6.
of the facts and the establishment of their relationships to provide
the best course of action toward the set goals made up the work of
planning. Goals or "hoped for" achievements were key points for planning.

Hempel argued for the practice of making planning a special function
within companies. His concept of planning established it as an identifiable
element of the management process, and he distinguished between the
concepts of planning and controlling: Planning dealt with conditions and
things in the future before actions were taken, while controlling involved
events and things that had already happened. Hempel advanced the concept
of planning as an intellectual activity separate from organizing, executing,
or controlling. Just as some management authorities devoted their attentions
to organizing, leadership, or controlling, Hempel was one of the first to
isolate planning for study and development.

Hempel commented that planners should never assume only one course of
action toward a goal; fact finding can indicate alternative courses of
action from which the best one can be chosen. This concept illustrated
the close relationship between the processes of planning and decision-
making. He also mentioned the importance of considering the close
relationship between long-range and near-future plans; decisions pertaining
to either one should be made only when regard is given to the overlapping
factors of both. 9

9Hempel, op. cit., p. 403.
E. Wight Bakke

**Bonds of Organization** by E. Wight Bakke was published in 1950 as an appraisal of corporate human relations. It contained the partial results of a research study within the telephone industry made by the Labor and Management Center at Yale University. Bakke was interested in exploring the principles of cooperation among persons related to each other as members of groups. For his research purposes, he established the concept of a company and union as a small society of individuals bound together by a social system.

Bakke reported on five elements of the social system and called them bonds of organization. He commented that they were important elements because they welded men together as partners in production. These five elements or bonds of organization were: (1) functional specifications; (2) status system; (3) communication system; (4) reward and penalty system; and (5) organization charter. Other bonds mentioned but not discussed by Bakke were technology, services, thought ways, and the educational system.

Functional specifications referred to the set of functions a person was expected to perform as a member of an organization. The concept was similar to Mooney's functional definition.

The status system involved a delegation of directive authority downward in the organization to direct the many individual activities toward group goals; it also covered a representative authority upward.

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in the organization regarding matters that affected the welfare of the members of the groups.

The communication system provided for the transmission of information that was required for individuals and groups in the organization to work toward the goals set. It was a "helper" system.

The reward and penalty system established incentives and controls for assuring the performance of tasks, the use of authority, and proper communication among the individuals and groups to further the objectives of the company and union.

The organization charter consisted of the elements that contributed to the mental image of the organization as a whole. The concept was similar to that of the corporate personality or the corporate image, which appeared in the literature somewhat later. Examples of the elements of the corporation charter of a company organization were its reputation, its major policies, its affiliations, its purpose, and so on.

Bakke contributed some useful concepts to management thought concerning the bonds that weld an organization into a productive whole. In 1953, he published The Fusion Process in which he refined the concepts of his first five bonds and added two others.

In the later research report, Bakke used the concept of activity processes instead of bonds. He assumed that an organization has the basic resources of people, materials, ideas, and nature. In his research he sought the answer to: "What minimum classification can be made of the

observed activities that affect the maintenance of the organization internally and its adaptation to the world outside?" He stated in his report that the answer to the question suggests the following types of activities:

1. Workflow activities or process
2. Directive authority and representative authority activities or process
3. Reward and penalty activities or process
4. Perpetuation activities or process
5. Communication activities or process
6. Evaluation activities or process
7. Identification activities or process

Bakke stated that these producing, directing, motivating, maintaining, informing, evaluating, and identifying activities were the essential "processes" of organization. The perpetuation activities included personnel, engineering, purchasing, and maintenance functions required to perpetuate the organization. The evaluation activities established criteria concerning the importance of people, ideas, and materials and their allocation to levels in the organization. These were the two activities added in 1953.

The concept of the fusion process was added to management thought by Bakke. It described the interaction of the organization and the

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13 Ibid., pp. 11-12.
individual. He stated:

When an individual and an organization come together in such a way that the individual is a participant in, and a member of, the organization and the two are mutually dependent on each other, both are reconstructed in the process. The organization to some degree remakes the individual and the individual to some degree remakes the organization.\(^\text{14}\)

The influence of the organization on the individual was called the "socializing process." The influence of the individual on the organization was named the "personalizing process." The simultaneous operation of the personalizing and socializing processes was conceived of as the "fusion process."

Bakke approached the study of organization as a dynamic process including people, ideas, materials and structural relationships for work, authority, communication, and motivation. His contributions to management thought stimulated interest in the behavioral sciences concerning the interactions of people within organizations.

\textit{Alvin Brown}

\textit{Organization of Industry}^\text{15} was published by Alvin Brown in 1947. He previously had written \textit{Organization: A Formulation of Principle}^\text{16} in 1945.


Alvin Brown conceived of organization as the means to concerted human endeavor. He believed that the principles of organization were equally valid and useful in any form of concerted human effort, viz., industry, war, government, recreation, education, religion, et cetera. He commented, however, that the manner of applying the principles was governed somewhat by the character of the enterprise. Brown illustrated his principles of organization by applying them to industry. He treated the study of organization as a separate field of knowledge from management.

Brown's concept of industrial enterprise may be obtained from the following statement:

I think industrial enterprise—or any human enterprise, for that matter, has three concerns. One, certainly, is personnel. Another is administration, by which I mean all the things that have to be done to carry out the purpose of the enterprise. The third is organization. In the sense in which I have defined it—the sense, indeed, in which, as a need it makes itself manifest to anyone who studies enterprise—it is a subject, an activity, a science, separate and apart from both personnel and administration. Organization decides what human effort is needed; the personnel activities supply and maintain it. They differ as much in their functions, the one from the other, as the writing of a play differs from the casting of it.17

Industrial enterprise, as described by Brown, required a purpose, administration, and organization. The purpose of any industrial enterprise was stated to be the earning of a profit or the making of a product which when sold anticipated a profit. Broadly, the concept

17From an address by Alvin Brown at the Annual Meeting of the Academy of Management in New York on December 30, 1949.
was described as an intention to serve, from which service a profit
was expected.  

Administration was stated to be the total of the endeavors of
all individuals in the enterprise which were directed toward the
attainment of the purpose of the enterprise. It consisted of planning,
seeing, and doing. Administration was conceived of as a science and art
separate from the science and art of organization. Brown limited his
contribution to management thought to organization only.

Ninety-five principles of organization were stated by Brown. After
stating them, he illustrated their application to industrial activities,
and classified them in the following areas: (1) purpose of organization;
(2) scope of organization; (3) precedence of organization over endeavor;
(4) responsibility; (5) delegation of responsibility; (6) obligation;
(7) authority; (8) supervision; (9) partition of responsibility; (10)
definition of responsibility; (11) self-co-ordination; (12) continuity
of responsibility; (13) group responsibility; (14) phases of administration;
(15) practice as an art.  

Brown's conceptual framework placed organization ahead of concerted
human endeavors. Organization was a means to administration. The
practice of organization was considered to be the art of realizing more
concerted human endeavor through the science of organizational principle.
Organization served administration, which consisted of planning activities,

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seeing that the activities were done, and doing or executing the activities to achieve the purpose of the enterprise. Planning was conceived of as a distinct mental process whereas doing was physical by nature. In actual practice the phases of administration overlapped.

Alvin Brown approached the study of organization in a scholarly manner. He not only contributed to management thought many useful concepts about the subject of organization but also many operative definitions pertaining to the art and science of organization. His concepts were clear and precise. They were easy to understand and teach; consequently he also made a contribution to management education.

Herbert A. Simon

Administrative Behavior[^20] was published in 1947 by Herbert A. Simon. It consisted of a study of the decision-making processes in organization and presented a vertical study of the subject of decision-making throughout all levels of an organization. Simon contributed to management thought the first comprehensive treatment of decision-making as a distinct activity. Subsequent to Simon's contribution, many articles and books were published on various aspects of the methods and techniques of the decision-making process.

Simon believed that administration involved processes and methods for taking action toward goals. However, he rightly indicated that previous emphasis in administration had been on getting action from groups of men,

whereas the choice of alternatives that preceded action had been neglected. Consequently, his contribution to management thought was from the general approach to choices which precede actions in the process of administration. His interest was in the psychology and logic related to the choice of alternative human actions.

It was assumed that human behavior in organizations was purposive and directed toward goals or objectives. His concept of purposiveness led him to the conclusion that a hierarchy of decisions existed in organizations in keeping with the hierarchy of authority in the downward levels of organization.

Three general steps were included in Simon's decision-making process: (1) the identification and defining of all alternative strategies of actions (2) the ascertainment of the possible consequences from each of the alternative strategies of action; and (3) the evaluation of each of the strategies of action in comparison with the others. He believed that the actual decision-making always involved a compromise because no one alternative course of action would lead to the best over-all desired result. For this reason, the planning process also involved compromise since only the most promising alternatives were laid out in detail for future action.

Simon described decision-making with reference to fact and value, rationality in administrative behavior, the role of authority, the criterion of efficiency, and the psychology of administrative decisions. He gave a practical application to such concepts as opportunity costs,

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21 Simon, op. cit., p. 67.
the principle of alternative planning, the unity of command, and the span of control. His study in decision-making processes was a pioneering one; it provided basic concepts and a framework for decision-making that facilitated the development of the quantitative techniques for decision-making in the nineteen fifties.

The British Contributions


L. Urwick. *The Elements of Administration* was based on a series of lectures by Urwick at the London Branch of the Institute of Industrial Administration at the Polytechnic in 1942.

Urwick stated that the main point underlying his lectures was its bringing together, in a logical scheme, various "principles of administration" which had been formulated by different authorities. He said:

The fact that such "principles"—worked out by persons of different nationalities, widely varying experience and, in the majority of cases, no knowledge of each other's work—were susceptible to such logical arrangement, is in itself highly significant.

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Urwick's major contribution to management thought in this publication was his integration and comparison of the concepts of Henri Fayol, Frederick W. Taylor, and Mooney and Bailey with reference to the principles of administration and the principles of organization and co-ordination. He demonstrated that the concepts of each fitted nicely into the logical framework of Mooney and Bailey's principle, process, and effect relationships. This proven similarity of thought of different authorities supplied evidence in support of valid elements in the process of administration that could be identified and combined.

Urwick gave an enlightening discussion of the objectives of business in his statement that:

Many business men to-day, if asked what was their objective would reply vaguely: "To make a profit, I suppose." But profit can be no more the objective of a business than betting is the objective of racing, making a score the objective of cricket, or eating is the objective of living. Profit is a stimulus to individuals who participate in business activities; sometimes it is an almost exclusive stimulus, just as one meets people who live to eat. But and more important, it is also a measuring rod, a test if a rough one, of the success with which the real objectives of the business are being attained. One must eat to live. And similarly, one cannot usually continue to conduct a business for long unless one makes a profit. But that stimulus and test cannot be the real objective of a business. To say so is almost equivalent to suggesting that one conducts one's business in order to keep accounts. Urwick believed that the true objective of any business enterprise must be to make or distribute some product or service that the community needs. He adhered to the motive of service in a manner similar to the concept of Oliver Sheldon.

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26 Urwick, op. cit., p. 27.
Urvick's elements of administration were: (1) forecasting; (2) planning; (3) organization and co-ordination; (4) command; and (5) control. He followed the concepts of Fayol in developing his administrative process. Although he contributed little to the creation of concepts for management thought, he did combine new relationships of other people's concepts. By doing so he developed further proof of the universality of some management fundamentals and elements.

E. F. L. Brech. Brech's purpose in writing Management: Its Nature and Significance was to present an analysis of management itself, shorn of its details of practical administration. He stated:

If management is a science it must have its own fundamental 'theory', standing as the foundation of the specialized knowledge by means of which the art is applied. No 'theory' of management has yet been written; it is doubtful whether enough research or analytical discussion has yet taken place to enable such a theory to emerge.²⁷

Brech hoped to further the recognition of management as a science or a profession. He reasoned that the practice of management could lay claim to the status of a profession if it were possible to define "a system of specific knowledge" exclusive to the manager. He conceived of management as a process of identifiable elements that could be defined and studied.

An analytical approach to defining management was used by Brech. He worked deductively from a study of the process of management to arrive at an understanding of its essential elements. His conclusions

from an analysis of the process of management were summarized in the following four propositions:

1. That management is a process specifically distinct from the technologies or fields of operation within which it is applied.
2. That it is capable of definition.
3. That it consists of four major groups of activities or elements—
   (I) planning of activities and methods;
   (II) co-ordination of activities (duties), methods, persons, and inter-personal relations;
   (III) inspiration or motivation of the persons in the performance of their activities (duties); perhaps better described as the maintenance of morale. (Sometimes referred to as 'leadership', a usage that calls for certain caution).
   (IV) control, or checking of activities and achievement against a plan.
4. That all of these elements are always present in management wherever it occurs.20

Management was differentiated from organization. Brech used management as a generic term for the process of executive control; it was a dynamic concept. Organization consisted of the structure of the responsibilities or systems by which the operations of an enterprise were performed; it was a static concept. Organization was not involved in the process of executive control (management); it was concerned with the framework within which the process of management operated.

Brech's conceptual framework gave management the total task of welding into a single working force the three "materials," as he called them. They were people, methods, and physical equipment. To accomplish this task, management discharged its responsibility through the process of:
(1) planning; (2) co-ordination; (3) motivation (or leadership); and

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20 Brech, op. cit., p. 31.
(4) control. He defined management as:

Responsibility for the effective (or efficient) planning and regulation (or guidance) of the operations of the enterprise, such responsibility involving—(a) the installation and maintenance of proper procedures to ensure adherence to plans; and (b) the guidance, integration, and supervision of the personnel comprising the enterprise and carrying out its operations.  

Policy was described as falling within the element of planning. It was thought of as direction of group activity, and the formulation of the principles within which the group members operated. The primary purposes of industry toward which management worked within an organization while guided by policies and principles were:

1. The earning of a profit on the capital invested in the plant.
2. The provision of employment for the people of the community.
3. The provision of the goods and services that the community needs or desires.
4. The provision of social satisfactions for those employed.
5. The basic value of the work itself: the old idea of craftsmanship for its own sake.  

The concept of objectives, as presented by Brech, was similar to the service, social, personal, and efficient performance classification that had been previously described by Davis. Brech, like other British contributors to management thought, believed that management had a definite social responsibility to the community as a whole, and not solely to any particular group of people.

The problem of terminology with conflicting definitions of management concepts was recognized by Brech, especially in the use of

29 Brech, op. cit., p. 29.
30 Ibid., p. 58.
the terms administration, management, direction, and organization. He made a contribution to management thought by isolating management for analytical study. He established objectives for industrial enterprises and then, by deduction, identified the elements in the process of managing to achieve those objectives. Some principles for the guidance of those performing the management process were then established. His logical approach to encouraging the development of a theory of management followed the principle, process, and effect route illustrated by Mooney and Reiley. As compared with Urwick and Hooper, Brech made the most original contribution to management thought. He acknowledged the influence of Urwick in developing his interest in the importance of management as a field of study.

E. C. Hooper. In Management Survey, Hooper used an approach to management that was more descriptive than analytical. He first differentiated between policy-making and management. Policy was considered to be the laying down of strategy; it involved the assigning of objectives, the establishing of priorities, and the setting of the time schedule. Management had the task of carrying policy into effect with the fullest efficiency within the limits assigned—which meant maximum success at minimum cost. Hooper's concept of management differentiated it from organization and from a superior authority which he called policy.

Organization had the purpose of establishing a framework of responsibilities through and by means of which a concern could do its

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31Hooper, op. cit., p. 1.
The purpose of management primarily required the removal of obstacles from the way of those performing operative work. Management was performed through the following administrative functions:

1. The passing of orders down
2. The flow of information up
3. The devolution of responsibility
4. Control and "keeping in touch"
5. The projection of the centre to the periphery, so as to identify the whole concern with a single aim or policy

Principles were stated to guide the performance of the administrative functions. For Hooper, these principles represented a genuine application of scientific method to the problems of management.

The art of management was shown to be different from the science of management. The art of management depended mainly on the personality or the qualities of those engaged in managing. The criterion for testing management as an art was the production of successful results over a period of time. By contrast, the science of management depended very little upon personality beyond the possession of intelligence and an orderly habit of mind. Management as a science was a suitable subject for teaching and study in a classroom; the degree of mastery acquired could be tested by examination. Proficiency in the science of management was a foundation for improving the practice of management as an art.

Hooper contributed concepts concerning the art of management and incentives useful for stimulating the efforts of others. He described the criteria for the practice of management as an art as being: (1) the art of knowing when; (2) the art of knowing how; (3) the art of using

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32 Hooper, op. cit., p. 44.
power; and (4) devolution of responsibility and keeping in touch. His
treatment of power and authority made an interesting comparison of
concepts. Power was defined as the product of personality or a com-
bination of personalities within a situation. Whereas authority could
be delegated, power was not subject to delegation. A person could be
invested with authority but not power. The art of management required
the evoking and manipulating of the power inherent in men. Hooper made
a point of the importance of using "power through" rather than "power over"
people. 33

Fear was stated to be an outmoded weapon for stimulating or motivating
the efforts of employees. It entailed "power over" others. In order to
realize "power through" others, Hooper advocated the following incentives:
(1) love of self; (2) love of belonging (affiliation); (3) love of
creation and accomplishment; and (4) love of service.

Hooper's contributions to management thought were descriptive
and less significant than those of Urwick or Brech for purposes of
developing a theory or philosophy of management. His contribution to
the literature of management did, however, encourage the study of
management for those persons who were preparing themselves for management
positions.

CREATIVE THINKING AND GAME THEORY

During the nineteen forties, interest emerged in the subjects of
creative thinking and game theory. It was significant that interest in

33Hooper, op. cit., pp. 50-59.
these areas developed during the same period that the first major contributions were being made to advanced concepts in planning and decision-making. Management thought about planning required additional concepts to define and develop the planning process so that it could be better understood. Methods for creative thinking, decision-making, and game theory supplied some needed concepts for the development of the planning function, especially for the general management field.

The major publications concerning creative thinking were A Technique for Producing Ideas by James Webb Young and How To Think Creatively by Eliot D. Hutchison. John McDonald published Strategy in Poker, Business and War, which explained game theory to those with little mathematical proficiency.

James Webb Young

A Technique for Producing Ideas was the first major publication in the area of creative thinking since Graham Wallas wrote The Art of Thought in 1926. Wallas had outlined the stages for creating a new idea as:

1) preparation; 2) incubation; 3) illumination, and 4) verification.

James Webb Young explained the following process for producing a new idea:


First, the gathering of raw materials—both the materials of your immediate problem and the materials which come from a constant enrichment of your store of general knowledge.

Second, the working over of these materials in your mind.

Third, the incubating stage, where you let something beside the conscious mind do the work of synthesis.

Fourth, the actual birth of the idea—the "Eureka! I have it!" stage.

And fifth, the final shaping and development of the idea to practical usefulness.37

These steps provided the whole process or method by which ideas were produced. Young's process was very similar to the four stages described by Graham Wallas.

Young stated two general principles that underlie the production of ideas. The first principle was that an idea is nothing more or less than a new combination of old elements. The second principle referred to the capacity to bring old elements into new combinations through the ability to see relationships. Words were described as symbols of ideas. Young used only verbal symbols to explain creative thinking. Subsequently, the methods of both Wallas and Young were used with mathematical symbols by those skilled in quantitative techniques.

Eliot D. Hutchison

**How To Think Creatively**, by Hutchison, was an exposition of the processes of creative thought. Hutchison, a professional psychologist, contributed to the literature valuable concepts pertaining to insight, which is an essential requirement for creative thinking. His four stages of insight were similar to those of Graham Wallas. They were: (1) the stage

37Young, op. cit., pp. 53-54.
of preparation; (2) the stage of frustration; (3) the period of moment of insight; and (4) the stage of verification. His descriptions of the moment of creation and the emotions in creation facilitated the layman's understanding of the creative thinking process.

By the close of the nineteen forties, the use of the creative thinking process had indicated its potential to enlarge the benefits to be derived from the proper application of the planning and decision-making processes. Many contributions to the literature of creative thinking appeared in the nineteen fifties. Creative planning had been identified as a management function, but knowledge about creative thinking was needed for the proper performance of creative planning.

John McDonald

The Theory of Games and Economic Behavior had been published in 1944 by John von Neumann and Oskar Morgenstern, but was studied only by the mathematically learned. McDonald made some of their concepts available to those interested in strategy and decision-making by using verbal rather than mathematical symbols. Strategy in Poker, Business and War explained the theory of games in simple terms and illustrated the importance of the use of mathematics in game theory and of models for decision-making.

In his treatment of the theory of games, McDonald explained the strategies of: (1) random choice in decision-making; (2) coalitions in decision-making; and (3) the principle of the minimax in decision-making. Knowledge of such strategies was developed to control uncertainties in decision-making.

Economists had been using mathematical models for choice and decision-making prior to the nineteen forties. Until that time, however, only limited applications of game strategy and mathematical models for decision-making were applied to the management activities of decision-making and planning. The development of operations research techniques in the nineteen fifties greatly facilitated the use of quantitative techniques for planning and decision-making.39

SPECIFIC CONTRIBUTIONS TO MANAGEMENT THOUGHT

During the nineteen forties, the significant contributions to management thought pertained to general management concepts. The functions that composed the management process were isolated and analyzed in greater detail. Emphasis was placed on the planning function as well as on the function of organizing. The decision-making and the creative processes became areas of interest, along with planning in relation to general management. The objectives of business continued to be an area of inquiry and study. In addition to the interest shown in the functions of management from the viewpoint of general management, some specific management concepts and management applications appeared in the literature of the field.

39See "The Uses of Game Theory in Management Science" by Martin Shubik in Management Science, II (October, 1955), pp. 40-54. Examples are shown for the application of game theory to the solution of business problems.
William B. Given, Jr.

The concept of "bottom-up management" was introduced by William B. Given, Jr. in his book entitled *Bottom-up Management*. He expressed a personal philosophy of management designed to stimulate individual initiative under conditions of increasing decentralization of both operations and management in industry.

Given differentiated between "top-down management" and "bottom-up management." In the former, the head of an enterprise did all of the thinking, planning, and issuance of orders for those under him; the initiative moved from the top to the bottom of a company. Ideas and suggestions were not solicited from members of an organization. In the latter, the head of an enterprise attempted to generate the flow of ideas upward from the bottom levels of an organization. Creative thinking and initiative were encouraged from all persons down the line in operating and staff management positions.

The concept of "bottom-up management" visualized the practice of setting clear objectives by the head of the business; he also planned the courses of actions toward the objectives and then held the organization on the courses of actions. The practice of "bottom-up management," as described by Given, added the abilities of many to the abilities of the chief executive. Freedom of initiative and a sense of independence were created throughout a company. Responsibility was spread widely throughout an organization operating under this concept. A proper environment for

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management decentralization was established. The underlying principle involved was that of freedom; it was freedom of spirit, freedom of frustration, freedom to act, and freedom to fail that generated the initiative of individuals operating under "bottom-up management."

Given's concept of "bottom-up management" was an influence on management thought. He contributed to the development of more precise statements of business objectives because his concept depended upon clear statements of them. His concept was useful for the trend to professional management with divisionalized or decentralized forms of organization. The practice of "bottom-up management" in a company also encouraged programs to develop the skills of managers in the management process that had become recognized.

Charles P. McCormick

In *The Power of People*, Charles P. McCormick made a contribution to management thought in the areas of business objectives and the management function of leadership or motivation. He also furthered the idea of professional management for business.

McCormick stated that the president of a company serves in the capacity of a trustee for everyone working in it. He believed that the responsibility for making a profit would be better fulfilled if the obligations to the employees and the consuming public were fulfilled as well. He described the following principles for the conduct of business:

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1. Primarily, business concerns people. The dominant position of the United States in the world came from men and not machine alone.

2. Employees are thought of first as human beings. Secondly, they are citizens of the United States, and thirdly, they are the means for production.

3. The preservation of individual freedom and economic stability in the world depends upon the United States.

4. The government cannot legislate the welfare of people. Free management and free labor in cooperation must work out the means for public welfare.

5. The "dignity of man" and the "freedom of choice" for individuals depends jointly on the efforts of managers and workers.

6. Service to others determines the destiny of man. The goal of business and professional leaders should be to improve society on the basis of a "religious" or "service" motive.\(^{42}\) The principles expressed were given as guides to management thought for the purpose of keeping the human development of society in pace with scientific development.

McCormick advocated a study of people as employees with the intent of determining what makes people enjoy work so that they will be more productive for their own interests. He presented the thesis that there are only five basic factors that employees want from their jobs, viz., (1) fair pay; (2) security; (3) opportunity; (4) recognition; and

\(^{42}\) These principles were summarized from the source of McCormick, \textit{op. cit.}, pp. 2-3.
(5) participation. McCormick's five basic factors in the wants of employees from their jobs were developed from 17 years of experimentation in the problems of human relations within his company.\footnote{McCormick, \textit{op. cit.}, pp. 6-9.}

The \textit{Power of People} was a sequel to McCormick's \textit{Multiple Management} book. In both publications, he contributed concepts aimed at the personal development and motivation of people in business organizations. During the nineteen fifties the behavioral scientists became interested in the same subjects. Both McCormick and Given were concerned more with the methods of human motivation than with the functions of planning, organizing, or controlling. They had specific interests and created specific concepts for management thought.

\textbf{Jackson Martindell}

Jackson Martindell was one of the first, if not the first, to attempt a method for appraising the competence of management practices within a business organization. His book, \textit{The Scientific Appraisal of Management} \footnote{Jackson Martindell, \textit{The Scientific Appraisal of Management} (New York: Harper & Brothers, 1950).} contains this method.

Martindell's method involved making a management audit of a company. The following criteria were used for purposes of a comparative evaluation of management practices in a particular company against an arbitrarily established standard:

1. The economic function of a company

\footnote{McCormick, \textit{op. cit.}, pp. 6-9.}
2. The corporate organization structure of a company

3. The health of earnings growth of a company

4. The fairness to stockholders practices

5. The research and development practices

6. The analysis of the value of the directors on the board of a company

7. The fiscal policies of a company

8. The production efficiency of a company

9. The sales vigor of a company

10. The evaluation of the abilities of the executives of a company

The method of evaluation consisted of allocating points for each of the ten items in a manner similar to that of the point system used in job evaluation. The total of the points gave a comparative evaluation of the excellence of management practices of a company in comparison with others in similar industries.

Although Martindell's method for making a management audit was controversial and doubtful as to its validity, he did design a means for appraising the management of a company in quantitative terms. His contribution to management thought was an identification of the factors in a company to which the management process was related and the idea that the performance of management activities could be measured and evaluated.

45The detailed method for making the management audit appears in Martindell, op. cit., pp. 279-94.
John R. Beishline

In Military Management for National Defense, 46 John R. Beishline illustrated the application of organic functions of management to situations delimited by prescribed basic factors in military management. Beishline's basic factors in military management were adapted from the basic business factors originated by Ralph C. Davis and outlined in his Industrial Organization and Management. Beishline used planning, organizing, commanding, and controlling for his organic functions of military management. 47

The significance of Beishline's contribution to management thought was not in the creation of any new concepts, but in demonstrating the application of the management process to military situations. This application provided further evidence in support of the thesis that management is a distinct and identifiable intellectual activity that is universally applicable to any situation requiring the utilization of human effort to attain objectives. Mooney and Railey showed the contributions of the military and the church to management thought. Beishline demonstrated that new developments in management thought could be applied advantageously to military operations.

George Filipetti

Industrial Management in Transition 48 by George Filipetti was published in 1946. Filipetti made the first significant contribution


to the historical development of management thought beyond the period of the nineteen twenties. He described the ideas and contributions of a selected number of persons who had made direct contributions to "the managerial evolution" or who had interpreted some phases of it or its impact.

Filipetti summarized the concepts of the pioneers in scientific management and gave an evaluation of the influence of the scientific management movement on industry in the period that followed World War I. The European adaptations of scientific management were described. His treatment of the Russian experience with scientific management provided one of the few sources of information available about management practices in Russia.

Filipetti was one of the first to recognize management as a subject with a history, and he made an important contribution to the literature of management with his recording of events and practices regarding management. His interest was more in the historical development of industrial management than in the development of management thought. His specific contribution to the development of management thought was in the presentation of the chronological developments in the field of management which occurred after the advent of scientific management in the nineteen twenties. These developments resulted from the influence of management thought to a large degree.

**Albert Lepawsky**

In 1949, Albert Lepawsky published *Administration: The Art and*
Science of Organization and Management. 49 He contributed to the literature of management a compilation of management concepts and practices from both business management and public administration sources. His collection of extracts from other publications was classified according to: (1) the art of administration; (2) the science of organization; and (3) the technique of management. Lepawsky gave to management literature its first comprehensive readings. In the nineteen fifties several readings in management books made their appearance.

Social Responsibility of Management

Concepts and comments regarding the social objectives of business have appeared in the literature of management since the nineteen twenties. Depressed business conditions and a high degree of unemployment during the nineteen thirties resulted in a greater interest in the social objectives of business in the economy. During the nineteen forties, the contributions to management thought indicated an increasing interest in and concern about the objectives of industrial enterprise. The area of general management received major emphasis in the studies and thinking of scholars in management. Management concepts related to the functions of general management included the subject of business objectives such as the profit objective, the service objective, and the social objective.

Recognition of the increasing interest in the social objectives of business and the social responsibility of management became evident

In 1950, a series of four lectures on "The Social Responsibility of Management" were delivered at New York University by an economist, a labor executive, a business executive, and a social engineer. The publication of the lectures provided the first major source of information on the subject.

Stanley Ruttenberg, who was Director of the Department of Education and Research, Congress of Industrial Organizations, stated:

In my judgment it is the social responsibility of management:
First, to work to improve local community conditions;
Second, to accept the principle of collective bargaining and to work with unions as institutions that are here to stay;
Third, to understand the fears and prejudices of workers toward scientific management;
Fourth, to engage in business practices to assure job opportunities for all workers.

Edwin G. Nourse, the former Chairman of the Council of Economic Advisors to the President stated:

To sum up, the economist, speaking for the economy, demands of management:
First, daring in making commitments, equal to that of our business ancestors;
Second, technical competence and financial prudence in the operational area, including imaginative development and aggressive selling;
Third, tolerance, frankness, and objectivity in dealing with labor as a partner.


51 Ibid., p. 28.

52 Ibid., p. 67.
William B. Given, Jr., Chairman of the Board of the American
Brake Shoe Company, commented that an accurate measure of a company's
progress in meeting its social responsibilities was the opinion of
the community. He stated:

Let me list some of the things which managements
believe they must provide if they are to contribute
toward improvement of the standards of life in our
country. These are the things all of us search for
in our lives.

- Security of employment;
- Security in retirement;
- Security against misfortune;
- Healthy working conditions;
- Opportunity for advancement;
- Recognition and self-respect.53

The viewpoints of the economist, the labor executive, and the industrial
executive were similar and compatible. By 1950, the concept of a social
responsibility of management to attain the social objectives of business
had been established in the management thought of the time.

Academy of Management

The Academy of Management was organized formally in 1941 from a small
group of college professors who had been meeting informally since 1936.

Its general objectives were stated as follows:

(a) A philosophy of management that will make possible
an accomplishment of the economic and social objectives of
an industrial society with increasing economy and effectiveness.
The public's interests must be paramount in any such philosophy,
but adequate consideration must be given to the legitimate
interests of capital and labor.

(b) Greater understanding by Executive Leadership of the
requirements for a sound application of the scientific method

53Chase, Ruttenberg, Nourse, and Given, op. cit., p. 73.
to the solution of managerial problems, based on such a philosophy.

(c) Wider acquaintance and closer cooperation among those interested in the development of a philosophy and science of management.54

The Academy of Management served to influence the development of management thought through its members. The fellows in the Academy were business executives or college professors who had made some significant contribution to the literature of management. Their interest in the development of a universally acceptable philosophy of management was reflected in their teachings and writings. Evidence of their interests and influence became apparent in the nineteen fifties.

Summary

1. The economic and industrial climate of the nineteen forties was characterized by war conditions in the first part and postwar reconstruction activities in the latter part. The challenge of changing conditions and objectives constantly confronted those responsible for the management of industrial enterprises.

2. The Engineering, Science, and Management War Training Program stimulated interest in the design and teaching of courses in management for personnel engaged in war production industries. The momentum of the programs carried on into the postwar period and influenced management thought and education. Principles and fundamentals of management received more interest in relation to the operating techniques of

54 The statement of objectives of the Academy of Management appears in Article II, 2 of its Constitution.
management. Experiences during the program proved that management concepts could be taught successfully in classrooms.

3. A general management approach developed for the attainment of the objectives of management and the solution of the problems encountered. More attention was given to the setting of objectives. The function of planning received recognition as a distinct element in the work of management. The concept of an identifiable management process became more firmly established.

4. Research projects served to validate the elements or functions in the management process that had been differentiated by logical analysis rather than by experimentation. Significant research projects were reported in the areas of top management and organization.

5. Concepts pertaining to the processes of decision-making and creative thinking appeared in the literature. The concepts that explained decision-making and creative thinking in greater detail facilitated the understanding of the process of planning. Consequently, the function of planning began to receive equal emphasis in the management process with organizing and controlling. In addition, the emerging interest in game theory added to the understanding of strategies in decision-making and planning.

6. Contributions from British authorities supplied additional concepts to management thought concerning the elements in management that could be identified and combined into a management process. The British authors wrote from a general management viewpoint and presented their ideas of the objectives of business and the management process for achieving them.
7. Specific contributions to management thought furthered the understanding of the leadership or motivating function of management.

8. The first attempt to measure or evaluate the effectiveness of the management of an individual company was introduced. The idea of a management audit was established.

9. The first comprehensive history of industrial management and the first readings book in management, with content beyond the nineteen twenties, appeared during the nineteen forties.

10. The social responsibility of management became established and accepted in management thought. The publication of a series of lectures at New York University on the subject provided the first major publication describing management's social responsibility.

11. The organization of the Academy of Management became an influence on the development of management thought in terms of a unified philosophy of management.

12. By the end of the nineteen forties, the development of management thought had followed the trend of determining clear-cut objectives for industrial enterprises and identifying the elements or functions in a management process for achieving them. The elements or functions in the management process had been identified as planning, organizing, leadership (or directing, stimulating, or motivating), and controlling. Decision-making, creative thinking, and game strategies had been presented as processes for use in the management process. The subject of organization was considered as a separate branch of management by some authorities. The
situation had developed for the refinement of the elements in management and the proper combination of them into an acceptable system of thought or a philosophy of management.
CHAPTER VIII

THE MANAGEMENT PROCESS AND MANAGEMENT PHILOSOPHY (1951-1959)

THE MANAGEMENT PROCESS AS MID-CENTURY

The management thought streams that had been developing in the first half of the twentieth century began to converge during the nineteen fifties. The emphasis on business objectives, the general management approach to business problems, and the identification of the elements or functions of management during the nineteen forties resulted in contributions to management literature that integrated existing knowledge and generalized concepts useful to management. A concept of a management science developed that related the quantitative methods of mathematics to decision-making and planning. The research methods of the behavioral sciences contributed to the understanding of human motivations and leadership. The concept of the management process provided a structure for the development of a philosophy of management.

The development of management thought to the stage of a process and a philosophy of management was predicted in The Principles of Scientific Management by F. W. Taylor who said that:

It is true that whenever intelligent and educated men find that the responsibility for making progress in any of the mechanic arts rests with them, instead of upon the workmen who are actually laboring at the trade, that they almost invariably start on the road which leads to the development of a science where, in the past, has existed mere traditional or rule-of-thumb knowledge. When men, whose education has given them the habit of generalizing and everywhere looking for laws, find themselves confronted with a multitude of problems, such as exist in every trade and which have a general similarity one to another, it is inevitable that they should try to gather these problems into certain logical groups, and then search for some
During the half century following Taylor's remarks, a generalized body of knowledge and fundamentals in the management area was developed. By means of logical analysis and some research work, the elements or functions of management were identified and combined into systems of thought that could serve as guides to the acts of managing.

H. S. Person

H. S. Person recognized the value of Taylor's contribution to management thought in 1940 when he stated:

Taylor brought science to the aid of the art of management. As de Fremenville put it, he brought the inductive method to apply on the conduct of the homely affairs of the shop. Out of this beginning has developed on a large scale, in many countries, and in respect of many phases of human affairs, an art of managing that consists of resourceful utilization of every possible contribution to the sciences—those pertaining to human nature as well as those pertaining to the physical world—in the solution of the ceaseless flow of problems that arise in management situations; in manipulating the factors that, skillfully proportioned and combined, will bring about a preconceived result with a minimum expenditure of the energies involved, and within a predetermined time.

The contributions to management thought from the science of mathematics and the social sciences have validated Person's comments.


Ralph C. Davis

Ralph C. Davis recognized the developing trend of management thought toward the search for an acceptable philosophy of management in 1950 when he stated:

The problem of greatest importance in the field of management is and probably will continue to be the further development of the philosophy of management. A philosophy is a system of thought. It is based on some orderly, logical statements of objectives, principles, policies and general methods of approach to the solution of some set of problems. A scientific method may be any logical, orderly, method of thinking with respect to the solution of the problems involved. Scientific Management is merely an attempt to apply the logic of effective thinking to the solution of business problems. It requires a sound, well developed managerial philosophy. 3

The interest of scholars in management and business executives in the development of a philosophy of management increased sharply after the close of World War II. The concept of professional management was recognized more generally because of the growth of business enterprises and the separation of management from ownership. Furthermore, those performing their professional management functions were experiencing greater political and social pressures from organized labor and public opinion. The influence of the American Management Association and The Academy of Management also stimulated management thought toward the development of a management philosophy to guide business leadership in discharging the obligations and opportunities of management.

3 Ralph C. Davis, "Research in Management During the '50's," in Arthur E. Warner (ed.), Research Needs in Business During the '50's (Bloomington, Indiana: Indiana University, 1950), p. 32.
Lawrence A. Appley

In 1954, Lawrence A. Appley, the president of the American Management Association, made the following comment concerning the shift from owner-management to professional management:

There has been a specific, noticeable shift in the character of management—a shift away from the concept that ownership and management are synonymous (and the resultant prevalence of owner-management) to the concept that the owner should employ the finest management that can be found. Up until the United States began to identify itself as a strong economic power, there seemed to be an assumption that ownership qualified a person or persons to manage what was owned. It is now commonly accepted in these United States, and more and more accepted in many other countries of the world, that the greatest benefits from ownership are to be derived from a competency of management which may not always be found among the owners. 4

Professional management meant that an individual performed the functions of management because of his professional competence and not because he owned the enterprise. It entailed the application of the scientific method to operating problems. The concept of professional management recognized the practice of management as a career for which individuals were required to have particular qualifications and preparation. 5

The shift to professional management from owner-management involved certain concepts and specific activities such as:

1. The understanding of the work of management and its basic processes

2. The identification and recognition of the skills required to apply the basic process of management to the operating areas of business


5 For statements of company presidents concerning the need for professional management, refer to: Lawrence A. Appley, op. cit., pp. 7-9.
3. The understanding of the conceptual tools and techniques available for assistance in the application of management skills

4. The knowledge of the methods of evaluation or measurement of the effectiveness of the management process when applied to the attainment of desired results

5. The knowledge of the means to improve the managerial skills and attitudes of individuals through management education and development

Lawrence A. Appley described management as an activity that "makes things happen." In order to make things happen, certain management processes had to be followed. He commented that the processes of management existed even though there was no uniformity of terminology for them.

The Management Personnel Development Research Committee of the American Management Association agreed on the following fundamental processes of management that had to be followed to "make things happen":

**Planning**: Planning is setting objectives, forecasting future conditions, and determining the future course of action and policies required to attain objectives in the light of forecasts.

**Organizing**: Organizing is determining, assembling, and arranging the resources by function and in relation to the whole to meet planned objectives.

**Executing**: Executing is carrying out the plan to obtain objectives and involves determination of actual results as compared with expected performance.6

Appley stated that agreement or disagreement with the specific fundamental processes of management listed was not important. The important point

6 Appley, op. cit., p. 11.
was that recognition be given to the existence of basic processes for management; and there should be agreement and understanding of them among the members of the same management team. He believed that there would eventually be agreement as to the terminology for the processes.

**Ralph J. Cordiner**

Ralph J. Cordiner in *New Frontiers for Professional Managers* supported Appley's concept of the importance of an understood and agreed upon set of processes for a management team. He stated:

> Every company should be managed in accordance with some workable, ethically responsible philosophy of management. That is, the managers should be in general agreement on a set of underlying principles that will guide their work in providing leadership for the company. For some companies, the set of principles that guide the managers may be tacitly understood, without ever being presented systematically. They may be part of the company's tradition or may even reflect the personal philosophy of the chief executive.

Cordiner believed in the importance of both a management philosophy and clearly stated objectives to guide the management activities of a company. He also described three frontier areas that represented challenges to professional managers in the decade ahead. In Cordiner's opinion, the following management areas required the most attention: (1) long-range planning; (2) organizing, communicating, and utilizing information for decision-making; and (3) proficiency in human motivations.

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He wrote that:

To the businessman of an earlier day, and indeed to many today, these areas of challenge might appear vague and remote from business realities. General Electric is convinced that far from being remote, these matters of long-range planning, or organizing information for decision-making, and of human motivations are among the critical areas of the future, . . .

Cordiner contributed to management thought a reinforcement of the importance of the elements of management identified in the nineteen forties, viz., objectives of business, long-range planning, decision-making, and human motivation. He also supported the concept of a fundamental process of management to guide the managers of a business.

Harold F. Smiddy

Harold F. Smiddy described the elements in the work of a professional manager as (1) planning; (2) organizing; (3) integrating; and (4) measuring. He stated that:

"Managing" as a distinct and professional kind of work, is leading by persuasion rather than by command, and by blending thought and action into decision making. Through planning, organizing, integrating, and measuring—as the elements in this work of a professional manager—

In the balanced and effective use of all human and material resources

Of the particular component, or of the whole enterprise, being managed . . .

Smiddy conceived of management as a process involving definite and identifiable elements. He also advocated the need for a philosophy of

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8 Cordiner, op. cit., p. 83.

manager development that would develop men into managers who had merely been "supervised" before.

F. H. Brown

F. H. Brown presented the fundamental elements in the management process as: (1) planning; (2) organizing; (3) guiding performance; and (4) appraising results. He described the process as follows:

Next, let's go beyond general philosophy of management. Let us examine what Chrysler considers to be the fundamental elements of the management process. For the moment, let's speak in terms of central management. At Chrysler, central management works as both ruler and servant,—it is the ruler of the Corporation as a whole, and the servant of both top management and the operating divisions.

As ruler of the Corporation, central management plans, it organizes, guides performance and appraises results. These are the four basic parts of the process of managing. Of course, leadership and the function of rewarding performance are inherent in the picture.10

As the servant of the division, central management provided staff services, assistance, and advice in specialized functional areas, and to some extent functional control.

Brown included under planning the setting of the fundamental objectives of the company. Planning determined the scope of the business and the future course of the company, both long-range and short-range. Organizing divided the company into various working components; it also assigned products, plants, and organizational jurisdiction over functions to the

various divisions. Guiding performance involved co-ordinating and integrating the performance of the divisions in the company. Appraising results entailed reviewing the performance of the operating divisions and measuring them against predetermined standards.

The concepts of the management processes of General Electric Company and Chrysler Corporation illustrate the trend of management thought toward the identification and combining of the elements of management into the processes of management. As Lawrence A. Appley commented, the names for the elements were different; but the recognition of the concept of management as a process existed.

By the middle of the twentieth century, management thought had moved from the concept of organisation and management to the concepts of a management process and a philosophy of management that included organising as an element of management. The concept of professional management as distinct from owner-management influenced this trend in management thought. The work of the professional manager required setting objectives for business with proper regard to political, social, and public pressures. The activities of the professional manager involved a process of management that could attain the objectives through the intelligent use of human effort and other resources. Under an owner-management concept, administration was used to identify the work of policy formation and establishing the organization. Then management used the organization to carry out the work assignments through a system. Under the owner-management concept, management was more concerned with what was called executive control than with planning.
Under the concept of professional management, the distinction between administration and management diminished to the point where the terms came to be used synonymously by many management authorities. Some authorities used administrative management as a concept for top management or general management as differentiated from operative management.

Robert Calkins

A significant contribution to management thought was made by Robert Calkins in an address before the annual meeting of the American Association of Collegiate Schools of Business in 1955. He influenced the thinking of the deans of many of the nation's schools of business and colleges of commerce concerning the management or administrative process. He stated:

Administration is fundamentally the direction of affairs. It is purposive action and to an increasing degree it is informed, rational and deliberate action. It draws upon the knowledge of the physical sciences and the practical arts; it employs the knowledge and techniques of the social sciences; but it is overwhelmingly concerned with the choice of ends, ways, and means for the attainment of desired results. . . .

The process requires the use of knowledge and understanding, but the ultimate objective is not explanation and understanding as it is in science. Its goal is not knowledge for knowledge sake. Nor is it an intellectual quest for the joy of discovery. The end of administration is the achievement of purpose; that purpose is action which yields desired results. Administration is unescapably concerned with choice and action, and it is therefore concerned with the future consequences of action.

The three main elements of administration are the formulation of goals, the choice of ways and means, and the direction of people in some group purpose. These activities may be considered as consisting mainly of two processes: the process of decision-making and the process of execution or action. The former determines what is to be done and how, while the latter puts decisions into action and oversees the process.
I shall stress the process of decision-making, for in modern administration, it is the central activity, and in many ways the most crucial one.¹¹

Calkins emphasized the element of goals or desired results in connection with administration. He did not include objectives as a part of planning. Decision-making was identified as an element of administration, and was related to the choice of goals and the determination of future courses of action. The processes of execution involved the elements of planning, organizing, controlling, and directing human effort.

The management and administrative concepts of many deans of schools of business were enlarged and refined with respect to the subject of administration. Calkins furthered the concept that management or administration was a distinct and identifiable process apart from industrial or production management. He also generated interest in decision-making in relation to management; consequently, he made a contribution to management education. Courses in management or administration began to increase in the curricula of the schools of business.

Charles E. Summer, Jr.

A research study was made in 1956 by Charles E. Summer, Jr. regarding the content of 87 courses in administration or management being given at 20 selected universities. The study was sponsored by the Academy of Management. Summer's study included only courses in administration.

¹¹From an address, "Administration and the Social Sciences" by Robert Calkins delivered at the annual meeting of the American Association of Collegiate Schools of Business in Milwaukee, Wisconsin, April 28, 1955.
that were not oriented around particular functions or operations, or around any particular type of business or industry. Summer stated:

In the years since World War II, there has been rapid development of something called "the field of administration" or "the field of management" in leading universities. This development is pointed up by a significant increase in courses offered which are designed to train people for administration in general—which do not train people as managers for any special function of a business (production managers for instance), or for any particular institutional management (banking, transportation). Furthermore, the courses are, almost without exception, different from the so-called scientific management approach which was popular in earlier times.12

Summer found that 42 of the 82 courses in his study had been installed since 1950. His study supplied evidence of the trend in management thought toward the concept of administration or management as a distinct and identifiable subject for study or practice. He used the terms management and administration synonymously.

The content of the courses in administration indicated that there were definite and identifiable elements in administration. Summer concluded that there was an emerging "field" of administration. It contained elements drawn from many traditional fields of learning, viz., philosophy, psychology, sociology, mathematics, economics, and traces from such far-removed fields as biology. He stated that:

There is considerable difference in which combination of knowledge approaches various schools include in their curricula. There are also combinational differences between professors. We have identified the following broad areas and approaches in this study, all of which overlap slightly:

Organizational behavior
The process of administration
Quantitative administration
Social responsibility
Human relations
Decision-making methodology. 13

The processes of administration involved a framework in terms of the functions of administration, viz., planning, organizing, directing, motivating, control, or similar concepts. Summer's study indicated a close relationship between management thought in business enterprises and college courses. Both professional managers in business and college professors recognized management as an identifiable subject with elements that were useful for combination into a process to attain goals. Similar management philosophies were being taught in company management development programs and in university courses in management. 14

Edward H. Litchfield

In "Notes on a General Theory of Administration," Edward H. Litchfield discussed the need for a working theory of administration. He commented that existing confusion in terminology has made it difficult for people within the field of management to speak accurately to one another. His reasons to justify the need for developing a working theory of administration were:

1. To provide a framework for the organization of materials and to codify existing knowledge

13 Charles E. Summer, Jr., op. cit., p. 115.

14 A brief summary of Summer's study may be found in the following source: Charles E. Summer, Jr., "Factors in Effective Administration," The Journal of the Academy of Management (August, 1957), pp. 26-29.
2. To guide research and to provide working hypotheses

3. To provide a useful guide to administrative behavior

Litchfield did not pretend to present a general theory of administration, but he did offer some general propositions that he hoped might provide the beginnings of a framework for a general theory of administrative action. His major propositions are listed as follows:

First major proposition: The administrative process is a cycle of action which includes the following specific activities:
A. Decision making
B. Programming
C. Communicating
D. Controlling
E. Reappraising

Second major proposition: The administrative process functions in the areas of:
A. Policy
B. Resources
C. Execution

Third major proposition: The administrative process is carried on in the context of a larger action system, the dimensions of which are:
A. The administrative process
B. The individuals performing the administrative process
C. The total enterprise within which the individual performs the process
D. The ecology within which the individual and the enterprise function.

Fourth major proposition: Administration is the performance of the administrative process by an individual or a group in the context of an enterprise functioning in its environment.

Fifth major proposition: Administration and the administrative process occur in substantially the same generalised form in industrial, commercial, civil, educational, military, and hospital organizations.

Litchfield's propositions were designed to view the whole administrative process and the whole of administration rather than any one or less-than-

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whole combination of its parts. He attempted to relate the process of administration to larger concepts of action systems. He made a contribution to management thought by proposing a beginning framework for a general theory of administration.

During the nineteen fifties, there were many contributions to management thought that attempted to establish a system of thought as a guide to the process of management in the attainment of objectives. Decision-making was added by some authorities to the management elements of planning, organizing, controlling, et cetera. Planning became identified more as a distinct function of management. The concept of professional management required greater emphasis on the setting of the objectives for business. The growth of professional management also required the use of management philosophies in companies as a basis for teamwork among the managers. Despite some differences in terminology, management concepts became more uniform among scholars and professional managers.

MANAGEMENT CONCEPTS IN MANAGEMENT EDUCATION

Most of the contributions to management thought from college professors in the nineteen fifties were aimed at establishing valid fundamentals and principles of management. Summar's research study indicated the rapid rise after 1950 in the number of management or administration courses in the curricula of leading universities. During this same period, most of the leading business firms installed management schools or executive development programs for their professional managers. Some federal government agencies also started programs in management education. In order to provide instruction in management as a distinct and identifiable subject, it was essential to have a management system of thought or philosophy of management that was logically sound for application to any or all operating and functional areas of business.

During the nineteen forties, the elements of management were identified and the concept of management as a process for the achievement of desired results was established. By 1990, the trend in the development of management thought had led to logical combinations of the elements or functions in management into conceptual frameworks of management philosophy or theory. The growth in the size of organizations stimulated interest in greater divisionalization and decentralization of the management function. This necessitated the development of larger numbers of managers to support the increased operating activities of expanding organizations. Many companies adopted a divisionalized type of organization. When changes were made in company organization structures from the functional to the divisional type of structure, management development programs were initiated to educate the management personnel in the changed concepts of organizational relationships and management practices.

Professional management consultants were used primarily to advise industrial and business firms in the matter of changing the structures of organizations to divisionalized forms. College professors, however, were most in demand to serve as consultants for the design and conduct of management education programs for the instruction of management personnel within the company organizations. The concept of professional
management and the increased opportunities for professional managers in the divisional types of organization structures served as powerful motivating factors for management personnel to develop their knowledge, skills, and attitudes in the management process. Consequently, management education flourished in both company programs and university courses in management.

College professors became an important influence on the development of management thought in the United States and the other countries of the free world. They prepared the text materials for management education and then instructed the college students in management concepts and philosophy. In addition, college professors served as consultants in the design and conduct of company management development programs, and they served as consultants in management thought and practices to most of the other nations of the free world through membership on teams sponsored by the Council for International Progress in Management and the International Cooperation Administration. They also served on the faculties of foreign management institutes.

In the first part of the twentieth century, the genesis of management thought came from engineers and industrialists. By 1950, the most significant contributions to management thought and the most influence in management education came from academic personnel in the universities. College professors influenced management thought both by personal contacts and contributions to the literature of management.

During the nineteen fifties, there was a significant increase in the number of contributions to the literature of management. The nature
of the contributions to management thought changed from the concept of organization and management to management fundamentals and principles of management. The nature of the trend was reflected not only by the content and titles of books but also by the appearance of new periodicals that carried the titles of management or administrative science. By 1950, management had become recognized as a distinct and identifiable intellectual activity with a body of knowledge separate from other disciplines.

**Trend to Management Fundamentals and Principles**

Evidence of the trend in management thought to the concept of management or administration as an identifiable discipline with a body of fundamentals and principles can be illustrated by the major contributions to the literature of management in the nineteen fifties. For purposes of illustration, some of the major titles are listed as follows:

1951 - *The Fundamentals of Top Management* by Ralph C. Davis
1951 - *Administrative Action* by William H. Newman
1953 - *Principles of Management* by George R. Terry
1954 - *Fundamentals of Professional Management* by John Glover
1954 - *The Management Process* by Department of the Air Force
1954 - *The Practice of Management* by Peter Drucker
1955 - *Principles of Management* by H. Koontz and C. O'Donnell
1958 - *The Administrative Process* by Robert H. Roy
1958 - *A Philosophy of Administration* by Marshall E. Dimock
1958 - *Management and Organization* by Louis A. Allen
1958 - *The Essence of Management* by Mary C. Miles
In general, the contributions to management thought from the listed publications are true to the titles. Management or administration is treated as a distinct body of knowledge separate from any functional or operating areas such as production, sales, personnel, or finance. The emphasis is on the functions and principles of management.

Ralph C. Davis

The Fundamentals of Top Management \footnote{Ralph C. Davis, The Fundamentals of Top Management (New York: Harper & Brothers, 1951).} was written to present a fundamental statement of business objectives, policies, and general methods that govern the solution of basic business problems. In this book, the author, Ralph C. Davis, further developed and refined his basic concepts of management that were first published in 1935 in The Principles of Business Organization and Operation, and in 1940 in Industrial Organization and Management.

Davis' concept of the basic factors in organization and operation was revised into basic management factors and problems. They provided the framework for his philosophy of management. Within his treatment of the importance of a philosophy of management, Davis stated:

Any system of thought is concerned largely with relating certain factors to certain effects by means of certain principles, to the end that satisfactory explanations and solutions of certain problems may be obtained. There are basic factors or problems that are usually involved in some degree in every major management situation. The principal managerial factors and problems have to do with business objectives, standards of business conduct, executive leadership, business policy, business functions, personnel,
physical performance factors, organization structure, business procedure and organization morale.¹⁷

Davis had a broader concept of management with his basic management factors and problems than was represented by the management process as conceived by most other authorities in the field. His logical relationship of factors and problems is outlined as follows:

1. Organized society in an industrial democracy is the source of all sanctions for the operation of all business, whether private or public.

2. Business organization in a modern industrial society is inevitably charged with a public interest. Business objectives, in consequence, must be given a primary position in any discussion of management. Business objectives fall into the classes of: (a) primary, (b) collateral, and (c) secondary.

   a. The economic benefits that business supplies to its customers are its primary service objectives.

   b. Collateral objectives are the personal objectives, which are values that individuals and groups within the organization, or closely associated with it, seek to acquire for and distribute among themselves.

   c. Secondary business objectives have to do chiefly with economy and effectiveness in the accomplishment of primary and collateral objectives.

¹⁷Davis, op. cit., p. 7.
3. For political as well as moral reasons, business should conduct its activities in conformity with accepted standards of proper conduct.

4. Executive leadership is the principal dynamic force in organization that motivates and directs the concern in the accomplishment of its objectives.

5. A policy is basically a statement, either expressed or implied, of those rules set up by executive leadership as guides and constraints for the organization's thought and action.

6. Business functions may be classified as managerial and operative.
   a. Management is the function of executive leadership.
      Managerial functions involve the work of planning, organizing, and controlling the activities of others in accomplishing the organization's objectives.
   b. Operative functions are those activities that enter directly and immediately into the creation of utilities, either primary, collateral, or secondary. They are "making" and "doing" functions.

7. The accomplishment of the organization's economic mission requires the provision of various physical factors in performance, viz., land, building, machinery, tools, materials, et cetera.

8. Personnel or the human factor in organization includes all individuals essential for the performance of assigned functions.

9. Organization structure provides the relationship between certain functions, physical factors, and personnel. It is based on a grouping of functions in accordance with their similar characteristics and significances.
10. A business procedure is a structure of relationships between functions, physical factors, and personnel. It is established for the purposes of co-ordinating and facilitating the accomplishment of some type of project.

11. Organization morale is basically a mental condition of groups and individuals that determines their attitudes. It conditions greatly the quality of their cooperation, their acceptance of leadership, and the effectiveness with which they accomplish their service objectives.\(^\text{18}\)

Davis contributed to management thought a logical system of analysis and a general management approach for the solution of business problems. He also provided precise definitions for the principal terms used in management. In addition, he contributed some significant concepts and principles of management as guides in the application of his managerial factors to specific situations. He stated that a philosophy is a body of doctrine and that the purpose of a managerial philosophy is to make clear the significance of business concepts.\(^\text{19}\) As judged by the author's concept of a management philosophy, he succeeded in developing one of the most comprehensive and complete philosophies of management in the literature of the field.

Significant management concepts contributed to management thought by Davis, in addition to his basic management factors and problems, were those pertaining to the organic functions of business and management.

\(^{18}\text{Davis, op. cit., pp. 9-20.}\)

\(^{19}\text{Ibid., p. 804.}\)
These organic functions of a business establishment were: (1) the creation of economic utilities; (2) the distribution of these utilities; and (3) the provision of the necessary capital for the creation and distribution of the utilities. This concept was useful to the function of organizing in differentiating out the line functions.

Davis considered the organic functions of management to be: (1) creative planning; (2) organizing; and (3) controlling of the activities of the organization's members in the execution of their assigned tasks. He stated that those functions were the functions of executive leadership.

Davis defined management as the function of executive leadership; he used the terms management and executive leadership synonymously. In addition, Davis made a distinction between administrative management and operative management. The former pertained to group management and the latter to project management.

Davis was one of the first management scholars to analyze the elements or factors in a management situation and establish a logical relationship among those identified for purposes of creating a working philosophy of management.

William H. Newman

Newman defined administration as "the guidance, leadership, and control of the efforts of a group of individuals toward some common goal." He

conceived of administration as a distinct skill involving the following basic processes:

1. **Planning.** This was the process of determining what shall be done, and included the clarification of objectives, the establishment of policies, fixing schedules, determining programs, and a wide range of decisions.

2. **Organising.** This process included the grouping of the activities required to carry out the plans into administrative units, and determining the relationships of executives and workers in the units.

3. **Assembling resources.** This process entailed the procurement of executive personnel, capital, facilities, et cetera, needed to execute the plans.

4. **Directing.** This process provided for the issuance of instructions. It included the matter of indicating plans to those responsible for their performance.

5. **Controlling.** This process assured that operating results conformed as nearly as possible to plans. It covered setting standards, motivating people to achieve the standards, comparing actual results with standards, and taking corrective action when necessary.  

Newman's basic processes of administration had a definite relationship to the functions of the business such as sales, production, and finance. However, administration was considered as being separate and distinct from the functions of business. The objectives or goals of the

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21 Newman, op. cit., p. 4.
business functions as well as the goals of the enterprise were achieved through the performance of the basic processes of administration at all executive levels in an organization.

Newman contributed to management thought a logical administrative process for the attainment of goals. He further established the concept of management as an intellectual activity separate from the subject areas or functions in business enterprise. He stated that a distinction between management and administration served no useful purpose; he felt that the concepts of both terms had the same meaning. He illustrated the processes of administration as being a combination of identifiable elements.

**George E. Terry**

*Principles of Management* by Terry was the first book by that title to appear in the literature of management. Terry contributed to management thought the concept that management is an activity that can be segregated into certain component and basic functions, which include: (1) planning; (2) organizing; (3) directing; (4) co-ordinating; (5) controlling; and (6) leading human efforts. Terry also applied stated principles to guide the performance of the basic management functions. Examples were:

1. **Principle of Service.** The fundamental objective of every enterprise is service; it is eminently practical, stable, and sound.

2. **Principle of the Objective.** A clear and complete statement of the objective is essential, and it should be made known to all members of an enterprise affected by it so that management activities can be directed in a unified, orderly, gainful, and effective manner.

3. **Principle of Planning.** Planning should take place before doing; most individual and group efforts are made more
efficient by determining before any operative action takes place what shall be done, where, when, how, and who shall do it.

4. **Principle of Functions.** Functions are the main entities around which a manager builds an effective organization structure.22

Alford had previously published several laws of management which he had collected. Cornell and Davis had stated principles of management to illustrate their management concepts; so had Fayol. Mooney and Reiley, and Brown had formulated principles of organization. Terry, however, related many of the existing principles of management directly to the performance of the functions of management as the cited examples illustrate. Terry described decision-making and creativity as functions of a manager rather than functions of management.

Terry revised his concepts of management in the revised edition of *Principles of Management*, published in 1956. At that time, he conceived of management as the vital process. He stated that "there is a distinct process called 'management,' which process is chiefly concerned with the important task of goal achievement."23 Management was defined as the accomplishing of a predetermined objective through the efforts of people. The vital management process for accomplishing objectives was presented as: (1) planning; (2) organizing; (3) actuating; and (4) controlling. Actuating became a new term for an element or function of management.

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It meant "move to action" and dealt with the supplying of stimulative power to the group. Co-ordinating was described as the task of blending efforts in order to insure successful attainment of an objective. Terry applied decision-making to the performance of each management function.  

Terry classified objectives as: (1) long run and short run; and (2) major, collateral, and subordinate. His treatment of objectives followed the concepts of Davis.

In his revised edition, Terry refined and eliminated some of his earlier principles. His framework of management, however, remained a management process composed of basic functions with principles applying to the performance of each of them.

John G. Glover

Glover conceived of management as a philosophy. He stated:

Management is a philosophy premised on the theory of truth, reality or experience. Its precepts are concerned with the phenomena of human beings working in a free economy, aided by mechanisms to accomplish a selected or prescribed object.  

He classified objectives as: (1) the enterprise objective; (2) the performance or current objective; (3) service objective; and (4) personal objective. In lieu of combining elements or functions of management into a process, Glover developed principles for the administration of

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an enterprise. His stated management principles were:

1. Principle of Research Application
2. Principle of Policy Creation and Application
3. Principle of Planning
4. Principle of Action or Performance
5. Principle of Measurement and Appraisal
6. Principle of Control

Glover considered organization as an instrument of management through which authority was delegated to others for the purpose of exercising working control, co-ordinating human effort, and creating unity of action.

Although Glover did not present a process of management, he identified the following elements of management: (1) research; (2) policies; (3) planning; (4) standardization; (5) performance; (6) measurement and appraisal; (7) control; (8) personnel; and (9) organization. He differentiated between administrative management, executive management, and staff management. Administrative management represented trusteeship for the accomplishment of objectives. Executive management constituted executorship for administrative policies and plans. Staff management provided councilorship for both administrative and executive management. Glover's treatment of management was more descriptive than applicative.

When Glover revised his book in 1958, he added concepts relating to the social responsibility of management and decision-making in keeping with the trend of management thought in those areas.

Department of the Air Force

In 1954, the Department of the Air Force facilitated the development of management thought toward the concept of the management process.

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26 Glover, op. cit., p. 8.
Air Force Manual 25-1, entitled The Management Process, was prepared to set forth ideas focused principally on achieving operational effectiveness in accomplishing the essential missions assigned to the Air Force.

Management was defined as a process of organizing and employing resources to accomplish predetermined objectives. The role of objectives was emphasized as the first essential of management. To accomplish objectives the following statement was made:

For Air Force purposes, management action is subdivided and classified as planning, organizing, coordinating, directing, and controlling. These are the five "functions" of management that are performed by every manager at every level.

The Air Force concept of the management process put planning, organizing, and co-ordinating into a pre-executive phase of management; these functions were performed prior to operating. Directing and controlling were placed in the executive phase of management, and were performed during the operations of an assignment. The Air Force concept of management functions bore a close relationship to those first described by Henri Fayol.

The establishment of the concept of a management process for use by the Air Force supplied further evidence for considering management a distinct and identifiable intellectual activity. The Air Force concepts of management influenced the development of management thought because they were disseminated widely in programs for management education.

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28 Ibid., p. 3.
Petar P. Drucker

Drucker contributed several concepts to management thought that influenced the thinking of practicing executives and students of management. Some of the more significant ones were as follows:

1. Economic performance is the first function of management. Drucker believed that management should put economic performance first in every decision and action. Management's existence can be justified only by the economic results it produces. Drucker believed that management fails if goods and services desired by consumers are not supplied at prices the consumers are willing to pay—and if the wealth-producing capacities entrusted to management are not improved or at least maintained.

2. The purpose of business is to create customers. Consequently any business enterprise has only two functions—the entrepreneurial functions of marketing and innovation.

3. Management by objectives and self-control motivates a manager to action because the objectives of his assignment demand it. He acts as a free man and not because he is told to take action. This concept has proved its usefulness to managers operating in a highly decentralized and divisionalized type of organization structure. The practice of managing by objectives and being evaluated by results has become increasingly prevalent in large divisionalized organizations. In addition, the concept of management by objectives has modified the concept of the span of control or supervision to the idea of a span of influence or responsibility.

4. The concept of federal decentralization was introduced by Drucker. It involved organizing activities into autonomous businesses.
Then each business developed its own product and market for its own responsibility for profit and loss. This idea was described by others as divisionalization or decentralization on a product or geographic basis.

5. The most common source of mistakes in management decisions is the emphasis on finding the right answer rather than the right question. Drucker believed that only routine or tactical decisions were centered around problem-solving. He advocated strategic decisions for managers. Strategic decisions involved accurate understanding about situations—and then changing them, or finding out what the resources are and what they should be.29

Drucker contributed no process of management to the development of management thought, but he did contribute several concepts for the improvement of the practice of management.

H. Koontz and C. O'Donnell

A second publication entitled *Principles of Management* appeared in 1955, written by H. Koontz and C. O'Donnell. The authors hoped to contribute to the development of a theory of business management. They stated that the managerial functions generally found to be most significant included: (1) planning; (2) organizing; (3) staffing; (4) direction; and (5) control. A principle of universality of managerial functions was stated to illustrate the fact that managers perform the same functions regardless of their place in the organization structure or the type of

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activity in which they are engaged. 30

Koonts and O'Donnell contributed a set of managerial functions to the literature of management. Although co-ordination was not among their managerial functions, they stated that co-ordination was the essence of management:

The essence of management is the achievement of coordination among people. Coordination is a complex concept, including principles by which harmonious enterprise activity can be accomplished and the many techniques for achieving the greatest synchronized effort.31

Principles for achieving co-ordination were stated as follows:

(1) co-ordination must be achieved through interpersonal, horizontal relationships of people in an enterprise; (2) co-ordination must be achieved in the early stages of planning and policy making; and (3) all factors in a situation are reciprocally related.

Koonts and O'Donnell differentiated between leaders and managers. They stated that managers were leaders to the extent that they secured followers or subordinates in the number and quality needed for the operations of the enterprise. The additional duties of planning, organising, staffing, directing, and controlling required that managers be more than leaders; they needed to be skilled in the executive functions. In the 1959 revision of their publication, the authors followed the trend of management thought with a chapter on the process of decision-making.

Harold Koonts explained his concept of a theory of management in an address before the Academy of Management in 1957. He said:


31 Ibid., p. 37.
In attempting to develop a theory of management, it has seemed to me that the first conceptual framework on which to hang a system of principles is to divide the managerial job into those functions peculiar to managership. Although this has been done by many persons who have approached the task of management and there are a number of ways of classifying these functions, I have preferred to look upon this job of getting things done through people as involving five basic functions, functions which are different from those of the engineer, accountant, personnel or production expert, or machinist.

These five functions are:

1. **Planning**—the selection, from among alternatives, of enterprise objectives, policies, procedures and programs.
2. **Organising**—the grouping of activities necessary for accomplishing enterprise purpose, the assignment of these activity groupings to managers with the necessary authority for undertaking them, and the establishment of authority relationships horizontally and vertically in the structure to assure the degree and kind of coordination desired.
3. **Staffing**—the selection and training of subordinates.
4. **Directing**—the overseeing of subordinates in the undertaking of their assigned duties.
5. **Controlling**—the measurement and correction of activities of subordinates to make sure that plans are transformed into action.32

Koontz contributed to management thought a conceptual framework of the functions of management as an approach to formulating a system of principles and a theory of management. He identified management as a distinct intellectual activity separate from the activities of other professions and occupations.

Lyndall Urwick had previously made the point that management had emerged as a discrete skill. His comments were:

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In business, up to the beginning of the present century, the art of management or of business government was regarded, almost universally, as mere addendum to the technical "know-how" of making a specific product. A man was regarded primarily as a manufacturer of bacon or boots, not as a manager, an executive. The idea of a discrete skill of managing had not emerged.  

The identification of management as a distinct intellectual activity, for which a theory or a philosophy could be developed, was accomplished in the nineteen fifties. Most authorities agreed that management contained identifiable factors, or elements, or functions that could be combined into a management process definitely and probably into a theory or philosophy. There was not general agreement concerning the terminology or the breakdown of the elements, factors, or functions. The concepts of authorities were similar; refinements of the concepts promised to lead to an acceptable theory or philosophy of management that would be accepted universally.

**Supplemental Illustrations of Management Fundamentals**

The previous specific contributions to management thought have illustrated in detail the definite trend toward the concept of management as a philosophy, a theory, or a process consisting of functions or elements. Certain other contributors to management thought deserving of mention are as follows:

1. Robert B. Roy in *The Administrative Process* included the following elements: (1) diagnosis; (2) action; (3) organization;

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(4) operations analysis; (5) forecasting; (6) planning; (7) resolution of conflict; (8) morale; (9) communication; and (10) criteria for decisions. He did not describe a process of administration; instead he explained his concept of the elements in the process.  

2. Marshall E. Dimock had a thesis in *A Philosophy of Administration* that "administration is more than learned responses, well-chosen techniques, a bundle of tricks. It is not even a science and never ought to become a hard and fast method. It is more than an art. It is a philosophy."

The cornerstones of his philosophy of administration were: (1) growth; (2) balance; (3) strategy; (4) leadership; and (5) motivation. Dimock used the concept of an executive to describe his administrative functions. He stated that an executive must first possess a clear conception of plans and strategy. Then an executive needed an organization as a vehicle for his strategy to flow through. His objectives must be translated into plans and policies in relation to organization, procedures, and personnel. Budgeting was related to the control functions at the opposite end of the line from planning. Direction and leadership were required during the performance of work. Although Dimock was writing from the field of public administration, his concepts of a process of administration within a philosophy of administration were similar to the contributions to management thought from business and industry.

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3. Louis A. Allen contributed to management thought what he called a unified concept of management in *Management and Organisation*. In his description of a unified concept of management, he stated that a manager performs the following work in guiding and directing the efforts of others: (1) planning; (2) organizing; (3) co-ordinating; (4) motivating; and (5) controlling. Objectives were considered a part of planning. Allen had the first title for a publication on "management and organisation;" previously the book titles had been "organisation and management." He conceived of organisation as a mechanism or structure that enabled living things to work effectively together. Organization was created by the performance of the manager's function of organizing.

Allen contributed a new concept of administration. It was the total work done by a manager and included planning, organizing, co-ordinating, motivating, controlling, and "operating work." He described leadership as a kind of work. In his opinion, all work performed by leaders did not include management work. Consequently, he differentiated between personal leadership and management leadership. Allen contributed some new concepts concerning existing terminologies of management; his treatment of the trend in divisionalization in organisation was his most important contribution to the literature of management.

4. Mary Cushing Hiles described three components of the management process. They were: (1) planning; (2) execution; and (3) control.

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In her book, *The Essence of Management*, she presented the management process as follows:

The management process requires the predetermination of objectives and processes and of strategic points for control; planned observations and comparisons; analysis of results; and the adaptation of objectives and processes for the future in the light of changing events and expectations.  

Mrs. Niles emphasized that the three components of the management process were used in every organization, regardless of its size or complexity. She established a conceptual framework of an executive organization in which the management process operated. The executive organization had the following functions: (1) developing the purposes, policies, and plans; (2) determining the structure; (3) selecting and developing the people; (4) maintaining the communication system; and (5) co-ordinating and harmonizing the cooperative system. The relationship of the executive organization and the management process was fuzzy and overlapping in Mrs. Niles' conceptual framework; but she did contribute to management thought the functions of an executive organization and a process of management.

5. Ordway Tead conceived of administration as a process. In *The Art of Administration*, he defined administration as:

... the process and agency which is responsible for the determination of the aims for which an organization and its management are to strive, which establishes the broad policies under which they are to operate, and which gives general oversight to the continuing effectiveness of the total operation in reaching the objectives sought.  

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Tead was one of the few authorities in the nineteen fifties who maintained a distinction between administration and management. In contrast to the broad scope of administration, he defined management as the "process and agency which directs and guides the operations of an organization in the realizing of established aims." Thus, Tead presented both administration and management as processes that work within an organization.

Role of Management Theory or Philosophy

During the nineteen fifties, the trend of management concepts in management education was toward the formulation of a general theory or philosophy of management. Management thought had developed to the stage of a distinct process composed of identifiable elements or functions. Management was being taught as a process and practiced as an art and a process. Lyndall Urwick explained the reason for the quest for a theory of management. He wrote that:

Management is an art, but it is an art which can be practiced in the scientific temper and spirit. The so-called 'practical man' is very apt to rail at 'theory,' particularly in countries of Anglo-Saxon origin. He forgets two things. First, that practice is static. As a doctor wrote in Great Britain some years ago, 'to theory sooner or later, the subtlest craftsman has to bow his head; for, even while his hand is on his tools, by theory contingencies and complications are being detected and eliminated and processes shortened and economized.' As a consequence in the birth of any new concept 'the practical man's' part is the woman's part. It is true that every new idea, every theory, has to be nurtured in the womb of practice before it comes to a full life of its own—a truth in the solid. But without the

germinating influence of theory there would be no new life at all.41
The contributions to management thought from the college professors became a significant influence on management practices during the nineteen fifties. Their theories or philosophies as well as their concepts of the management process were exposed to many practical or practicing managers in university executive development courses, professional management association courses, graduate school courses, and company executive development programs. Their influence on management thought was both personal from their service as instructors and pervasive through the use of their publications in management education. 42

THE MANAGEMENT APPROACH

The development of management thought to the stage where it was understood as a separate and identifiable intellectual activity resulted in the application of management concepts to the functional areas of business or the business as a whole. The management process became a conceptual process with wide possibilities for application. Examples of application of management concepts follow:

1. A. M. Weimer applied the concept of the management process to an introduction to business publication in 1959. His conceptual framework was summarized as:

41 Urwick, op. cit., p. 9.
The key social institution of our time—
is managed within a dynamic environment.
A firm may be an individual proprietorship, a partner-
ship, or a corporation; it may be large, medium sized or
small; and it may engage in manufacturing, mining, trades,
finance, personal service or other work.
Through decision makers—owners, top managers, operating
managers and specialists—
Objectives are set,
plans are formulated, organizations are set up
and controls established with
leadership implementing decisions and setting off action. 43

Weimer conceived of a general application of the management process to
the resources of the business firm which are used in the production and
marketing of goods and services to secure income.

2. Carl A. Dauten, in the 1956 revised edition of Business Finance,
attempted to apply the management process to the function of financing.
He stated in his Preface:

The major emphasis is placed on planning the financing of a
business, carrying out the financing, and controlling the
financial activities of the business to be sure that all
is going according to plan. The relationship of financial
decisions to other areas of decision-making and to top-
manangement is constantly stressed.44

Dauten conceived of the application of the functions of management to
the function of finance in a business enterprise.

attempted to integrate the management point of view, the new developments
in decision-making, and the recent developments in the behavioral sciences


44 Carl A. Dauten, Business Finance: The Fundamentals of Financial
1956), p. iii.
to the function of marketing. In his Preface, he announced the following about the content of his book: "It is managerial and this implies two things at least, a management point of view and a decision orientation."\(^\text{45}\)

Howard stated that his approach to marketing implied an integration of the various marketing activities and a downward delegation of authority. His emphasis was on problem-solving and control in relation to marketing. Howard avoided the description of marketing activities; instead he applied the concept of the management process to the work of marketing.

4. The management approach was recognized by some European authorities. Herbert B. Schmidt, formerly on the staff of the German Management Institute, wrote the following in an article entitled "Developing Business Leadership in Europe":

> Many productivity and technical-assistance missions have been sent to the United States from Europe and vice versa. Time and again Europe has been challenged by the American high standard of living and high labor productivity, and time and again Europe has searched for their causes. The high capital outlay per worker, the size of the market and thus the opportunity for large-scale production, the productivity consciousness of the American worker, and other factors have been put forward—and with good reason.

> But it became apparent that there was one subject which showed significant differences between the United States and Europe: namely, management—its philosophy as well as the proper realization of its functions. It became well known that this—not capital or technology—was the greatest bottleneck in modern economic growth.

> Management philosophy, as a system of thought that can be applied to all activities concerned with achieving a

purpose through human effort, was entirely lacking as a subject at most European institutions of higher learning or business schools; this contrasted considerably with the U.S.

And with regard to basic management functions—such as planning, organizing, motivating, and controlling—in business and industry, many differences between Europe and the United States became evident as the result of this comparison between the two economies. Again, these differences served as an argument for the higher efficiency of the U.S. economy.46

It was evident during the nineteen fifties that the concept of the management process had become accepted in management thought. It was extended in application to finance and marketing functions. It had been previously used in production, personnel, and office management. Recognition of management functions and the concept of management philosophy was also evident in the writings of some Europeans.

Management Process and Administrative Point of View

An analysis of management thought indicates that the management process can be outlined by functions or elements involved with some of the principles of management that are related to the functions. In general, the management process is as follows:

I. The Management Process

A. Evaluation of the situation
   1. Principle of the situation
B. Determine the objective or desired results
   1. Principle of the objective
C. Planning to achieve the objective or desired result

1. Principle of planning
2. Principle of opportunity costs
3. Principle of alternative planning

D. Organising to put the plan or program into effect
1. Principle of functionalization

E. Leading (or directing or motivating)
1. Leadership
2. Human relations
3. Instruction and development
4. Communication

F. Controlling the activities in accordance with plans
1. Principle of control
2. Principle of standardization
3. Principle of the exception

A variation of the management process is the administrative point of view. The concept of it is similar to the management process. For purposes of comparison it is illustrated as follows:

I. The Administrative Point of View

A. Sizing up the situation. The initial task in formulating a policy for meeting changing conditions is to diagnose the problems to be met.

B. General plan of action. The next step is to determine the course of action to be followed and the objective or general purpose aimed at.

C. Organizing for the job. In this step, provision must be made for the material assets to be used, manpower must be obtained, and personnel assignments given.

D. Sequence of timing moves. This step involves the strategy of action.

E. Following through. After the plan is in operation, there remains the task of checking up to determine whether it is being carried out in accordance with policies formulated to meet the conditions with the sequence of timing decided upon.

Both the administrative point of view and the management process are indicative of the acceptance in management thought of a general approach to the achievement of goals and the resolving of management problems.
Either or both illustrate the concept of management as an identifiable intellectual activity that can be applied to the business as a whole or any function of a business. The establishment of a management process in the framework of management thought provides a conceptual vehicle for a general approach to the development of a management philosophy or theory.

SOCIAL RESPONSIBILITY OF MANAGEMENT

The development of management thought included concepts pertaining to the objectives of business enterprise during the nineteen thirties and forties. Unemployment and the depressed state of the economy in the nineteen thirties generated inquiries from governmental, labor union, and general public sources regarding the purpose of business in the economy and the responsibilities of those in the managerial positions of the nation's business enterprises. The conditions of the war economy and reconstruction period during the nineteen forties also served to raise questions about the purpose or objectives of business. The continuing increase in the separation of ownership from the management of enterprises influenced the opinions and beliefs of citizens, employees, governmental officials, and managers regarding the justification for the existence of business enterprises. Professional managers had different concepts of business objectives than owner-managers.

The profit objective had loomed large in the image of business objectives since the origin of commerce, trade, and industry. Subsequently,
the service objective, which consisted of economic values for society, gained great acceptance as an objective and justification for business enterprise. Gradually, there developed an interest in the criteria for the socially desirable behavior of those managing large enterprises. The concept of corporate citizenship and the social responsibilities of management became established in management thought.

**J. M. Keynes**

As early as 1926, J. M. Keynes discussed the relationship of the profit objective to other emerging objectives of concern to managers. He wrote as follows:

One of the most interesting and unnoticed developments of recent decades has been the tendency of big enterprise to socialize itself. A point arrives in the growth of a big institution—particularly a big railway or public utility enterprise, but also a big bank or big insurance company—at which the owners of the capital, i.e., the stockholders, are almost entirely dissociated from the management, with the result that the direct personal interest of the latter in the making of great profit becomes quite secondary. When this stage is reached, the general stability and reputation of the institution are more considered by the management than the maximum profit for the stockholders.47

Keynes reasoned that there was no need for the government to nationalize industry, if the industries were moving toward socializing themselves.

The trend of management thought in the area of the social responsibility of management and the corporate citizenship concept developed

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through the nineteen thirties and forties to the point of voluntary acceptance among many American industrialists. Typical concepts of the social and economic responsibilities of management in the nineteen fifties follow.

Opinions of Prominent Individuals

Private enterprise, once motivated by narrow and selfish interests, is fast assuming the broad responsibilities of citizenship in a democratic society. Businessmen, once wedded exclusively to their profit and loss statements, now promote school bonds in Middletown and teacher training centers in New Delhi. . . . Professional managers, who hold their jobs by merit rather than by nepotism or stock ownership, are operating our industrial enterprises with ever-increasing efficiency.48

J. D. Zellerbach’s statement was made in his discussion of the democratization of business and business’s contribution to public welfare.

James F. Lincoln’s concept of intelligent selfishness has had a strong influence on management thought with reference to business objectives. His success and prestige have resulted in adding the concept of intelligent selfishness to the literature in management. He wrote that:

The goal of the organization must be this—to make a better and better product to be sold at a lower and lower price. Profit cannot be the goal. Profit must be a by-product. That is a state of mind and a philosophy. Actually an organization doing this job as it can be done will make large profits which must be properly divided between user, worker, and stockholder. That takes ability and character.49


Ralph C. Davis supported Lincoln's concept regarding the objectives of business. He stated that:

The mission of the business organization is to acquire, produce, and distribute certain values. The business objective, therefore, is the starting point for business thinking. The primary objectives of a business organization are always those economic values with which we serve the customer. The principal objective of a business man, naturally, is a profit. And a profit is merely an academic consideration, nevertheless, until we get the customer's dollar.50

Theodore V. Houser described a code for corporate citizens in his *Big Business and Human Values*. He stated that:

All businesses, no matter how big, are accountable to many groups beyond the confines of their own organizations. Stockholders, customers, suppliers, the community, the public at large, the government—all have certain expectations from management. In some cases their expectations are relatively explicit, as in the case of stockholders, customers, and suppliers. The relationships of a corporation with the community, the public, and the government are less direct but not less real, and need to be given thought as part of the broad spectrum of management responsibility.51

Houser's concept of the responsibilities of management included the profit, service, social, and "international relations" objectives. Fulfillment of his scope of responsibilities would create a very favorable image for any corporation. He contributed to management thought an integrated concept or image of the responsibilities of management.

J. C. Donnell II discussed the benefits that a corporation could derive from discharging the responsibilities of management. His concept


of a corporate image or a corporate personality is illustrated by the following statement:

The institution develops its own character, status, and responsibilities, and the perpetuation of the enterprise becomes a principal objective of its management. The long-range benefit becomes preferable to the short range profit. In the minds of those identified with the enterprise, actions which enhance the prestige, public acceptance, reputation or perpetuity of the entity are desirable actions apart from their economic implications.52

Howard R. Bowen contributed to management thought a comprehensive and analytical study of the social responsibilities of the businessman. Bowen commented that the businessman occupied a strategic role in American life. He regarded the businessman as the central figure in American society and the symbol of our culture. Bowen stated that:

The social responsibilities of businessmen have meaning only in relation to the goals or values which we seek from our economic system. The doctrine of social responsibility rests upon the idea that business should be conducted with concern for the effects of business operations upon the attainment of valued social goals.53

Bowen illustrated the kinds of goals in terms of which the social responsibilities of business must be defined. They were: (1) high standard of living; (2) economic progress; (3) economic stability; (4) personal security; (5) order; (6) justice; (7) freedom; (8) development of the individual person; (9) community improvement; (10) national security; and (11) personal integrity. Obviously, it is easier to make

52. J. C. Donnell II, "Big Business and The Aspirations of Individuals," an address at Rose Polytechnic Institute, April 12, 1956.

a list of such goals than it is to translate them into action. Bowen believed that there was a trend toward increasing the effectiveness of social responsibilities of businessmen through their business decisions. He wrote:

The first and most essential condition, if social responsibility is to become a more effective force, is that businessmen must acquire a strengthened sense of vocation. They must accept the social implications of their calling. They must recognize that ultimately business exists not for profits, for power, or for personal aggrandizement but to serve society.

The businessman produces two categories of products. The first category consists of commercial goods and services, e.g., steel, lumber, automobiles, clothing, food, etc. The second category consists of conditions under which the production of these goods and services take place. Included in this second category of products are the physical conditions of work, the stability of employment, the security of workers and others, the quality of human relations, the rate of exploitation of natural resources, wage and price policies, research, dividend policies, use and extension of credit, capital structure, stream and air pollution, community action, relations with government, etc. These together may be called the 'social products' of business.

Bowen's concepts of the social responsibilities of the businessman and the economic goals or values of business began to appear in the published creeds or philosophies of management of corporations during the nineteen fifties. Bowen's contribution to management thought was both a reflection of the trend of management thought and an influence on the further development of management thinking about the responsibilities of management and the objectives of business.

54 Bowen, op. cit., pp. 135-36.
American Management Association

In 1958, Stewart Thompson reported on a research study for the American Management Association. His study covered management creeds and philosophies. He found that company creeds or philosophies were formulated for the following reasons:

1. To define the purpose of the company. (To state exactly why the firm is in business).
2. To clarify the philosophy—character of the company. (To state the moral and ethical principles guiding its actions.)
3. To create a particular "climate" within the business. (To communicate the basic purposes and ethics of the company to all those in the company ranks so that they may communicate them to customers and others outside the firm through their actions.)
4. To set down a guide for managers so that the decisions they make will reflect the best interests of the business with fairness and justice to those concerned.55

Thompson's research study consisted of a survey of 51 companies regarding the content, use, and evaluation of their creeds or philosophies.

Thompson contributed to management thought one of the first attempts to describe the concepts of the company character or the image of the company. The image of the company existing in one's mind was built from his experiences with the company as he perceived them. The company personality was developed by the images it created in the minds of individuals both inside and outside the firm.56


Thompson reported that interest developed in the formulation of management philosophies and company creeds because they became the foundation for the creation of company images and company personalities. The formulation of company creeds and philosophies required careful statements of company objectives. Consequently, management thought was enriched by the contributions of carefully thought-out and constructed statements of the objectives of business enterprise. An example of a creed or philosophy follows:

H. W. LAY AND COMPANY, INC.

OUR BASIC PHILOSOPHY

It is our purpose . . .

1. To provide the consumer at all times with the products of highest quality and value.
2. To earn the respect, confidence, and loyalty of our customers by serving them so well that they can attain maximum turnover of our products at a good profit.
3. To provide our employees with the opportunity and incentive for maximum self-expression and growth.
4. To fulfill our obligation to our stockholders by providing a fair return on investment and by insuring future growth and earning power.
5. To be good citizens in our community by observing the highest moral and ethical standards in the conduct of our business and by supporting the American system of freedom and opportunity.57

The forces that generated the concepts of social responsibilities of management and economic goals of business resulted in facilitating the development of many company creeds or management philosophies.

57Thompson, op. cit., p. 118.
Change in Concept of Management Philosophy

In the first part of the nineteen fifties, a management philosophy usually consisted of a statement of the elements or functions of management and their combination into a process of management that was a logical system of thought for achieving objectives or resolving problems in the way of attaining objectives. What started out as a concept of management philosophy evolved into a concept of a process of management or a theory of management. In the latter part of the nineteen fifties, the concept of a management philosophy involved statements of purpose and beliefs concerning the proper conduct of business. Instead of considering elements or functions of management, a management philosophy included statements about the following: (1) beliefs about profits and private enterprise; (2) beliefs about rights of owners and employees; (3) beliefs about collective bargaining; (4) beliefs about economic values and responsibilities to customers and communities; (5) beliefs about obligations to further social and technological progress, et cetera. Management philosophy was developed for the purpose of creating company images and company personalities instead of serving to provide a system of thought for combining functions of management for a process of achievement.

MANAGEMENT SCIENCE AND OPERATIONS RESEARCH

The developments in the field called management science and the area of operations research have had an influence on management thought.
Both the decision-making and planning functions of management have been refined and improved through the developments in the quantification of decision-making processes and techniques.

There were attempts at the quantification of the management decision-making process in the nineteenth century. Jeremy Bentham in *Principles of Morals and Legislation* and J. S. Mill in *Principles of Political Economy* had the genesis of quantitative approaches to decision-making. Alfred Marshall in *Principles of Economics*, in his notion of "consumer's surplus," proposed a method of utility measurement that depended on the assumption of constant marginal utility of money. 58

**Concept of Operations Research**

The significant contributions to a codification and structure of quantitative decision-making have appeared since World War II. E. L. Grant in *Principles of Engineering Economy* 59 contributed an approach to decision-making through probability theory and statistical techniques. The first publication with the title of "operations research" appeared in 1951. It was *Methods of Operations Research* by Morse and Kimball. Operations research was defined as:

... a scientific method of providing executive departments with a quantitative basis for decisions regarding the operations under their control. 60

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Morse and Kimball described the methods of operations research as they developed during World War II. When executives or officers were faced with operational problems in logistics and tactics that required executive decisions, they found it beneficial to have studies of such problems performed by groups whose members had training and interest in some specialized field of science. For example, a problem involving service scheduling in a maintenance facility could be approached by a "team of scientists" consisting of mathematicians, physicists, statisticians, and economists. Each member of the team brought a knowledge of methodology and technique from his field to bear on the specific operating problem in an attempt to quantify the decision process and obtain an optimal solution. The efforts of operations research teams proved to be successful and led to the use of similar teams in industry after the war. Several important methods of analysis, the major example being linear programming, were developed under the name of operations research. Other methods involved queuing models, replacement models, and inventory models.  

Operations research methods have proved to be difficult to define at the level of a theory. The methods involve techniques and do not constitute a body of knowledge. In the decision-making process, the methods of operations research have facilitated the quantification of standards for alternative courses of action by establishing mathematical

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models. Management decision-making has been improved by means of these models, which permit the consideration of consequences of alternative courses of action to be evaluated in quantitative terms instead of simple value judgments.  

Management Science

From the developments in operations research, there has been a trend toward the concept of a management science. The field of "management science" deals with the development of methods and techniques for the analysis of management problems by formal and quantitative means. The work of management science can be classified into two broad areas as follows: (1) the analysis of operating problems; and (2) the analysis of behavioral problems (individual and organization). The methods of management science have been used primarily for "well-structured" problems. Recently, approaches to "poorly-structured" problems have been attempted by methods called heuristic problem solving. It may be predicted that contributions to management thought will be realized from the methods of management science that will result in better understanding, prediction, and control in management situations. The management functions of decision-making, planning, and motivating will be improved by the conceptual framework provided by "management science" methods.

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62 The most complete history of operations research may be found in the following source: Joseph F. McCloskey and Florence Trefethen, Operations Research for Management (Baltimore: The John Hopkins Press, 1954), pp. 3-35.

Professional associations with official journals have been established in the fields of both operations research and management science. In 1953, *Operations Research*, the journal of the Operations Research Society of America was initiated. In 1954, the Institute of Management Sciences began publishing its official journal named *Management Science*.

**Edward H. Bowman and Robert B. Fetter**

Bowman and Fetter made a significant contribution to management thought in *Analysis for Production Management*. They developed a quantitative approach for the analysis of the economic problems of production management. They applied the methods of management science to the analysis and solution of problems in production. Their general approach involved the steps in observation, hypothesis, testing, and control. They contributed to management education and management thought a quantitative approach for decision-making in the area of production that made the descriptive and procedural approach to production management obsolete.

**Irwin D. J. Bross**

In 1953, Irwin D. J. Bross published *Decision for Decision*; contributing to management thought the concept of a process for statistical decision-making. Although he did not claim to develop methods for management


65 Irwin D. J. Bross, *Decision for Decision* (New York: The Macmillan
science, his basic concepts provided the foundation for later contributions to the area of quantitative techniques for decision-making. His treatment of model building influenced the thinking of Bowman and Fetter concerning the nature of models in the symbolic world. He provided one of the clearest concepts of the relationship of models in the symbolic world and the real world that exists in the literature pertaining to quantitative decision-making.

**Implementation of the Planning Function**

The concepts and methods of management science and operations research developed more analytical concepts for the planning function. Practicing managers were provided with improved conceptual frameworks for integrating, evaluating, and predicting alternate courses of action.

In a presentation of the corporate planning process, Melville C. Branch stated:

> Comprehensive planning seeks to optimize the total productive accomplishment and effective existence over time of the organism to which it is applied. It is therefore coordinative, inclusive, and projective in its viewpoint. As the descriptive adjective indicates, it is not limited to physical planning, nor is it otherwise segmental in nature. One of the primary purposes of comprehensive planning is the integration of various functional and other partial planning activities...

> Scientific method is used to the extent possible. This means simply that when significant facts, figures, and calculations are available or can be developed, they take precedence over guess, whim, or emotional preference. But it is also recognized that in most planning situations there

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are factors which cannot yet be quantified or otherwise processed scientifically. The psychological, social, and political aspects almost always involved in planning are illustrative.

More and more they [line executives] are relying on small planning staffs to receive and correlate divisional and departmental plans, distill the most indicative data, integrate and analyze it, project it into successive stages of future time, and finally present the composite situation and probable results of alternative courses of action.

The methods of management science and operations research helped develop the planning function by making available to managers better conceptual tools and mathematical methods for integrating, combining, and predicting alternative courses of action. Long-range planning was facilitated by the new methods of prediction and quantitative evaluation.

In addition, the trend toward establishing clear objectives for management philosophies and creeds resulted in better performance of the planning function. In their consideration of the statement of business purpose and philosophy, Hill and Granger emphasized that:

This step [statement of business purpose and philosophy] is frequently overlooked in long range planning. But as attested by many of the companies which have formulated such a statement, it is the real bedrock foundation for all planning. Without it, more specific plans and objectives become somewhat arbitrary.

The statement of business purpose and philosophy should spell out in some detail the types of service which the organization renders, to what types of customers, and with what attitudes toward the employees, management, the trade, community and stockholders.


The contributions to management thought from the areas of management science, operations research, and management philosophy generated much managerial interest in the planning function. In 1958, the first readings book for the planning function was published. 69

THE BEHAVIORAL SCIENCES

The Hawthorne experiments during the nineteen twenties marked the first important contribution to management thought from psychologists and anthropologists. 70 The sociologists became interested later, and now tend to dominate the field of the behavioral sciences in relation to management. Prior to the nineteen twenties, Whiting Williams had made "sociological" studies among the laborers in factories, coal mines, and steel mills. He reported that the following fears and frustrations were of most concern to the workers at that time: (1) the insecurity of jobs; (2) fatigue and stretching out work assignments; and (3) feelings of uncertainty about the future plans and intents of employers. 71 During the nineteen fifties, the behavioral scientists began to make research studies in the areas of leadership, organizational relationships, and human motivation. Previous contributions to management thought had been made by behavioral scientists, but not to the extent and depth of the research inquiries in the nineteen fifties.


70 The Hawthorne experiments are reported in detail in the following source: F. J. Roethlisberger and William J. Dickson, Management and the Worker (Cambridge: Harvard University Press, 1939).

The most significant contributions to management thought from the behavioral scientists during the past decade have been as follows:

1953: Chris Argyris—Executive Leadership
1955: William F. Whyte—Money and Motivation
1956: Carroll Shartle—Executive Performance and Leadership
1956: H. G. Barnett—Anthropology in Administration
1957: Philip Selznick—Leadership in Administration
1957: Chris Argyris—Personality and Organization

The function of leadership has been concerned with motivating or stimulating human effort to achieve desired results in conformance with plans. The evaluation of leadership has been made against the standards of results achieved. The behavioral scientists began to study the methods of leadership and the effects of leadership on employees and organizational relationships. The approach of scientific management was aimed at separating inefficiency and waste from the operating methods of work. The approach of the behavioral scientists has been to determine the causes of frictions, frustrations, and conflicts among members of organizations that result in inefficiencies and wastes of human efforts. Their contributions to management thought have been informative rather than remedial.

**Chris Argyris**

In *Executive Leadership*, Argyris attempted to build a theoretical framework to improve the understanding and the interpretation of individual and group behavior in the context of organizations. He contributed the concept to management thought that there is a "built in" sense of dependence in organizations. He suggested that:

... the supervisors are dependent upon the leaders. The dependence, in turn, leads to the supervisors becoming leader-centered. It also leads to inter-supervisory
Argyris commented that executive leaders may be considered successful in achieving results by both superiors and subordinates; but the "human costs" may be very high in terms of tensions, frustrations, and conflicts. According to Argyris, leadership characteristics were related to the personality of the leader and to certain principles of leadership that have evolved from experience. He stated that both personality and leadership principles may be changed at the discretion of a leader. His major thesis was that a leader may change undesirable personality traits and leadership principles when he understands the "high human costs" that result from them. Through an intelligent understanding of undesirable personality traits and leadership principles, a leader may take action to lessen conflicts, frustrations, and tensions in the organization which adversely affect his success as a leader.

In *Personality and Organization*, Argyris made inquiry into the basic components of organization and how an organization evolves and maintains itself internally. He contributed to management thought the idea that formal organization structure tended to make employees feel dependent, submissive, and passive; also that strong dynamic leadership, management controls, and human relations programs tended to reinforce the basic causes of employee-antagonism instead of decreasing them.

Argyris was interested in the behavior of the individual in relation to the formal organization with reference to the impact of

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management upon employees. He suggested the following propositions as a beginning to the development of a theory of organizational behavior:

Proposition I. There is lack of congruency between the needs of healthy individuals and the demands of the formal organization.

Proposition II. The resultants of this disturbance are frustration, failure, short time perspective and conflict.

Proposition III. Under certain conditions, the degree of frustration, failure, short time perspective, and conflict will tend to increase.

Proposition IV. The nature of the formal principles of organization cause the subordinate, at any given level, to experience competition, rivalry, inter-subordinate hostility, and to develop a focus toward the parts rather than the whole.

Proposition V. The employee adaptive behavior maintains self-integration and impedes integration with the formal organization.

Proposition VI. The adaptive behavior of the employees has a cumulative effect, feedbacks into the organization, and reinforces itself.

Proposition VII. Certain management reactions tend to increase the antagonisms underlying the adaptive behavior.

Proposition VIII. Other management actions can decrease the degree of incongruency between the individual and formal organization.

Proposition IX. Job or role enlargement and employee-centered leadership will not tend to work to the extent that the adaptive behavior (propositions III, IV, V, and VI) has become imbedded in the organizational culture and the self-concept of the individuals.

Proposition X. The difficulties involved in proposition IX may be minimized by the use of reality-oriented leadership.

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Argyris contributed to management thought some concepts concerning the conflict that exists between the system of the formal organization and the individuals. His concepts provided better insight about the reasons why people behave as they do in business organizations.

William F. Whyte

In *Money and Motivation*, Whyte presented an analysis of incentives in industry. He stated that the reactions of the individual to the incentive system depend on his relations with his fellow workers. An incentive system may result in an integrated intergroup cooperation in opposition to management; or it may lead to bitter intergroup conflicts among the workers. The theory of piece-rate incentives has assumed that workers respond as isolated individuals to rewards and punishments. Whyte indicated that the theory avoids the influence of the individual and the work group. He stated that man was not born with a love of money; he had to learn to love it. In Whyte's opinion, the response to money in the factory should not be considered as the response of an isolated individual. The factory worker reacts to management as a member of a group.

Whyte believed that many executives have fallacious theories of causation. He stated:

> Many executives are handicapped because they seek to solve problems in terms of outmoded theories of causation. They try to find the cause for a particular problem. When they think they have found the cause they seek to provide the solution.74

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Whyte stressed the point that there were no "cure-alls" or "packaged solutions" for problems in human relations. He contributed a conceptual framework for an integrated view of human relations. Desired human motivation in organization depended upon some important factors in addition to money.

H. C. Barnett

Anthropology in Administration by Barnett was the first pioneering attempt to integrate the knowledge and skills of anthropology with administration. Barnett made no contribution to management thought; his intent was to illustrate the uses of anthropologists in staff services to administrators and for decision-making, planning, and policy formation. His contribution to the literature merely provides evidence concerning the increasing interest of behavioral scientists in administration.

Carroll L. Shartle

In Executive Performance and Leadership, Shartle attempted to focus the recent advances made in the field of the behavioral sciences on the practical problems of the executive or administrator. He studied comparisons between types of organizations to illustrate how administrative performance may necessarily vary because of the purpose and the climate of the organization. He hoped to contribute to a better understanding of executive performance. From his analysis of organization structure and


effectiveness, he concluded:

... there is no consistent evidence that any one type of organization of group dimensions results in more productivity than any other. This may be startling information, for assumptions are often made to the contrary.\textsuperscript{77}

Shartle's reasons for his statement were the difficulties in obtaining reliable indices of productivity and the fact that many events in organizations may affect productivity and offset any advantages or disadvantages ascribed to organization structure. Shartle conceived of two criteria for executive effectiveness, viz., (1) personal behavior; and (2) organizational effectiveness.

In his treatment of administrative motivations, Shartle offered an explanation of why executives perform as they do. He stated the following relevant dimensions of personal values in our American society that appear to affect executive performance: (1) achievement; (2) satisfaction; (3) independence; (4) size of undertaking; (5) quality of service or product; (6) rate of actions; (7) newness of things.\textsuperscript{78} Shartle contributed to management thought several concepts regarding organizational structure and relation to productivity and the nature of administrative motivations. He contributed to the knowledge and understanding of leadership as a function.

Philip Salmick

Salmick contributed to the literature of management a sociological interpretation of leadership in administration. He believed that the

\begin{itemize}
\item\textsuperscript{77} Shartle, \textit{op. cit.}, p. 70.
\item\textsuperscript{78} Ibid., pp. 152-54.
\end{itemize}
logic of efficiency lost force as a leader approached the top of the administrative pyramid. He contended that leadership required an understanding of the collective values and loyalties in an organization.

The major contribution to management thought by Selsnick was his statement that: "The executive becomes a statesman as he makes the transition from administrative management to institutional leadership." 79 To Selsnick, institutional leadership meant viewing the organization as an institution.

Selsnick described an administrative organization as a formal system of rules and objectives. The tasks, powers, and procedures were set out according to some officially approved pattern. The organization thus designed was a technical instrument for mobilizing human energies and directing them toward set aims. In comparison, an "institution" was described as a natural product of social needs and pressures—a responsive and adaptive organism.

Selsnick differentiated between leadership and administrative management. The latter was concerned with routine decisions, while leadership dealt with creative and critical decisions. He stated that:

Leadership sets goals, but in doing so takes account of the conditions that have already been determined what the organization can do and to some extent what it must do. Leadership creates and molds an organization embodying—in thought and feeling and habit—the value premises of policy. Leadership reconciles internal strivings and environmental pressures, paying close attention to the way adaptive behavior brings about changes in organizational character. 80

80 Ibid., p. 62.
Selsnick outlined the key tasks of leadership as: (1) the definition of institutional mission and role; (2) the institutional embodiment of purpose; (3) the defense of institutional integrity; and (4) the ordering of internal conflict. Selsnick's concept of leadership was detached from administrative management, which was considered as organization engineering. Leadership had the mission of choosing key values and then creating a social structure that embodied them.

The behavioral scientists had a concept of organization as a system and management as a dynamic force that generated dependency, tensions, frustrations, and conflicts in members of organizations. They approached their studies in organization with the intent of determining the causes of "human costs" resulting from leadership forces and organizational deficiencies. Their contributions to management thought provided new concepts of leadership, human motivations, and organizational conflicts from interpersonal actions.

**Summary**

1. During the nineteen fifties, the management thought streams began to converge from the management scholars, the behavioral scientists, and those working in the area of management science.

2. The concept of a management process became generally accepted by both business managers and college professors in the management field. There was general agreement among management authorities that management consisted of identifiable elements that could be combined into a process of management. There was no general agreement concerning the names or the exact nature of some of the elements or functions of management.
3. The concept of professional management in relation to ownership-management became prevalent in the nineteen fifties. Professional managers began to feel the pressure from the public, labor unions, and governmental sources for the justification of business enterprise and statements of the purpose of business. The concept of a social responsibility of management developed. Professional managers became interested in developing management philosophies, which consisted of statements of purpose and beliefs for the conduct of their businesses. Such management philosophies began to be used to create corporate images or personalities. The concept of a management philosophy changed from a management process to a set of statements of business purpose and ethical beliefs regarding the conduct of business.

4. The general acceptance of a process of management or a theory of management was reflected in the trend of a general management approach to business as well as specific functional fields such as marketing management and management of finance. Scholars in the functional fields began to use the conceptual framework of the management process.

5. The developing areas of management science and operations research contributed quantitative methods that implemented the management functions of decision-making and planning. The planning and decision-making functions of management were given conceptual tools and quantitative techniques that greatly improved long-range planning activities.

6. The social scientists, through research and experimentation, contributed to management thought in the areas of leadership, human
motivation, and organizational relationships. A conceptual theory of organization began to emerge that explained the causes of tensions, frustrations, conflicts, and feelings of dependency in members of organizations. Concepts were advanced to help minimize the "human costs" of waste and inefficiency in human effort.

7. By the end of the nineteen fifties, the field of management was definitely established as a distinct and identifiable intellectual activity. The management process with identifiable elements of management was in general use. The management approach was adapted to the functional fields of business as well as to business as a whole. A theory of management was emerging. A new concept of management philosophy was developing that included the responsibilities of management for social and economic values. The physical and social scientists were contributing to management thought in the areas of decision-making, planning, organizational relationships, and communication. The concept of professional management was prevalent in which management was considered a distinct type of professional skill that required an understanding of a body of knowledge and certain ethical attitudes.

8. Management education was widely established in university courses, university executive development programs, company management development courses, and management courses sponsored by the professional management associations.
CHAPTER IX

CONCLUSIONS

A thorough, chronological, and analytical study of the development of management thought during the twentieth century leads to the following conclusions:

1. Management exists as a distinct and identifiable intellectual activity that lends itself to study, research, teaching, and practice.

2. The philosophies, theories, fundamentals, and principles of management are stated in terms of concepts.

3. The development of management thought indicates a chronological relationship to the development of the economic and industrial climate of the countries where it originated and evolved.

4. In the United States the genesis of management thought was from the area of operative work; in Europe it was from the executive level of general administrative management.

5. Management thought developed in successive stages that may be identified and characterized.

6. The development of management thought resulted from the contributions of certain established disciplines and evolved into a distinct and separate discipline capable of contributing concepts in return to the disciplines that nourished the origin and development of management, as well as other functional fields.

7. The conceptual framework for a process or theory of management consists of elements or functions which may be identified and combined...
in accordance with the requirements of the desires of the institutions and the economy.

**Management Exists as a Distinct and Identifiable Intellectual Activity**

From the genesis of management thought, as reported and described in the literature of management, to present day concepts of management, evidence indicates that management is an intellectual activity separate and distinct from operations in business and industry. Management has a body of classified knowledge that can be applied through the means of professional proficiencies and attitudes.

The classified intellectual body of management knowledge pertains to the process or ways and means of achieving objectives or desired results through the intelligent utilization of human effort, regardless of the type of industry, business, operating function, or purposive human activity involved. The process of management requires the use of knowledge and understanding; but the ultimate goal is not mere description, classification, or understanding as it is in science. The objective of management is not knowledge for the sake of knowledge only. Management is dynamic by nature. The end product of management is the achievement of some predetermined purpose; the purpose is a set of actions which yields desired results. Management involves the use of the intellect to visualize the objectives desired and the least cost actions, human and material, that will lead to the realization of the objectives before human and material resources are expended in operating activities.
Management Depends upon Concepts

Management philosophies, theories, fundamentals, and principles are stated in terms of concepts. The history of management thought indicates that all progress in management thought has been related to conceptual discoveries in the field. Though some of the concepts of management now seem to be obvious, their origin required creative thought. Management is definitely concerned with the choice of objectives and the choice of actions to attain the objectives. Therefore, management is concerned with the future consequences of action, both prior to the initiation of action and during operative performance. The choices of objectives and future actions require a conceptual framework for a system of managerial thought that can provide a guide to action and resolve any problems which prevent or interfere with the realization of desired objectives. The conceptual framework of management concepts serves as the foundation for a theory or a philosophy of management. Without distinct management concepts, it is impossible to develop a theory or philosophy of management. Distinct management concepts have evolved in the development of management thought.

Management Thought is Related to the Economic and Industrial Climate

Conceptual frameworks for management thought were developed independently by different management authorities in various countries during the same period of time. The genesis and development of management thought appears to be related to the stage of economic and industrial development of the countries where some system of management thought originated and evolved.
Evidence exists to indicate a close relationship of the degree of industrial development in an economy and the degree of interest in management thought. During the early part of the nineteenth century, there were isolated contributions to management thought from scholars who were a mathematician, a physicist, and a militarist. Their contributions to management thought had little influence at that time. There was little development or influence of management thought in an economy until the economy became highly industrialized. It was not until a factory system and large industrial organizations developed in an economy that there also developed a need and an interest in a system or philosophy of management thought. Consequently, the development of management thought occurred in the twentieth century with contributions to it coming mainly from the United States, England, and France.

Character of Management Thought from the United States and Europe

In the United States, a system of management thought originated in response to the desire of pioneering engineers to separate waste and inefficiency from work at the operative level of human performance in industrial enterprises. In France and England, management thought originated in response to the desire of top management industrialists to identify the vital functions of a business and formulate some principles of management to serve as guides for more effective managerial performance in the conduct of the activities of a business enterprise.

Despite the wide variance in the points of origin of management thought in different countries, the course of progress in the development
of management thought during the twentieth century resulted in the convergence of the fundamental concepts of management thought into similar conceptual frameworks or philosophies for all. The development of management thought to the stage of universally accepted conceptual frameworks for management philosophy or theory was facilitated by management education or research in: (1) colleges of engineering and commerce or business; (2) professional management societies such as the Society for Advancement of Management, the American Management Association, the Academy of Management, the British Institute of Management, and the Comite National de l'Organisation Francaise; and (3) the International Management Congresses.

**Stages of Management Thought**

Management thought developed in successive identifiable stages during the twentieth century.

**First stage.** The first identifiable stage of management thought was the so-called scientific management movement. Scientific management was conceived by the pioneers in management thought as a philosophy or a mental attitude toward the intelligent use of human effort. The emphasis in scientific management was on maximum output with minimum effort through the separation of waste and inefficiency from human work at the operative level of performance. The conceptual approach to scientific management was: (1) experimentation; (2) setting standards; (3) planning the work; and (4) maintaining the standards which were set. This conceptual approach to scientific management was modified during the
nineteen twenties to: (1) management research; (2) management standards; 
(3) management control; and (4) cooperation.

By means of experimentation or research, proper tasks and standards 
were established. The tasks were the objectives; the standards pertained 
to standards of personnel, standards of conditions, standards of equipment, 
standards of procedures, and standards of performance. Planning was 
separated from operative performance. This resulted in a management 
responsibility for the proper planning of the work and the employees' 
responsibility for the proper performance of work. An organizational 
framework was necessary for the specialization of the management functions 
and the work functions. Consequently, the functional type and the line 
and staff type of organization structures developed. Wage payment plans 
were invented to provide incentives for workers and to gain worker 
motivation and cooperation. The managerial function of control developed 
to assure actual performance in accordance with planned performance as 
established by the task and standards which were set.

The scientific management approach to the utilization of human 
effort in work assignments included the vital elements or functions 
of management, viz., an objective, a managerial process for achieving 
the objective (planning, organizing, and controlling), and the use of 
people for the performance of work projects.

Second stage. During the nineteen thirties, management thought 
developed to the stage that involved the conceptual framework of organiza-
tion and system. This conceptual framework required the concepts of both 
administration and management.
Administration represented the ownership point of view. It involved the formulation of policies and the establishment of the organization. Then the organization became the machine or mechanism of management for carrying out work assignments through the system which was conceived of as a network of routine operating and control procedures. The main function of management consisted of the exercise of executive control to assure the proper performance of work within the organization. The scientific management approach to work at the operative level continued in use for the purpose of separating waste and inefficiency from the operating procedures.

The vital management functions were inherent in the organization and system conceptual framework. Administration performed the functions of setting goals, formulating policies, and establishing the organization. These were general planning and organizing functions. Administration also performed a general control function. Management performed the functions of leadership, operative planning and operative control within the organization. The concepts of administration and management were used later by some authorities as administrative management and operative management. The former was concerned with the general management of the enterprise; and the latter was related to the management of specific projects or operative functions.

Third stage. The general management approach to the attainment of desired objectives characterized the third stage in the development of management thought. During the nineteen forties the conceptual framework for management developed into a process of management that could be used
as a general approach to the achievement of objectives for an enterprise as a whole or any functional portion of it. Whereas management had previously been associated primarily with production and personnel, the concept of the management process also was being associated with the functions of selling, marketing, and financing.

Management thought became oriented around the identification and refinement of the elements or functions in the management process. The concept of professional management diminished the distinction between administration and management. Either or both were conceived of as a management or an administrative process. The terms were used synonymously. The governmental, institutional, and political pressures on professional management to justify the existence of private enterprise generated interest in the setting of socially justifiable as well as economic objectives for business. The experiences in the war economy and the subsequent period of reconstruction stimulated interest in the planning and decision-making functions because of changing conditions and situations. The growth of organizations in size and numbers of employees necessitated the study of divisionalized or decentralized type of organizations.

There developed the concept of management as a process that consisted of definite and identifiable elements or functions, viz., (1) the setting of goals; (2) the formulation of policies as guides to thought and action; (3) planning to achieve goals; (4) organizing to put plans into effect; (5) leading or motivating the people in the organization to carry out the plans; and (6) controlling the activities in conformance to plans. The concepts which were inherent in the
scientific management approach and the organization and system framework became sharply identified and combined into a system of thought or a management philosophy.

Fourth stage. The fourth stage of management thought has developed from the concept of the management process as a philosophy of management to a broader prospective of a management philosophy which includes statements of the purpose of business and ethical beliefs concerning the conduct of business affairs in addition to the process of management. The management process has also become the conceptual framework for a theory of management.

Thought streams and conceptual contributions from the disciplines of mathematics, psychology, sociology, and anthropology are being integrated with the concepts of a management process and a theory of management.

Contributions to Management Thought from Related Disciplines

The development of management thought was facilitated by the conceptual contributions from certain established disciplines, viz., engineering, economics, psychology, sociology, statistics, and mathematics. The origin of the scientific management approach to the separation of waste and inefficiency from human effort in the performance of work was the contribution to management thought from engineers. The scientific management movement resulted in the recognition of management as a distinct and identifiable field for study and practice.

Management became a subject for research and study in colleges of engineering and commerce or business. Management education further
developed and improved management practices and refinements in management thought. Contributions to the development of management thought came from economists, statisticians, and mathematicians in the areas of planning and decision-making. The use of mathematical models for decision-making and predictions improved the effectiveness of the creative planning function; the use of game theory and strategies improved the planning of courses of action for the attainment of predetermined objectives. The sociologists and psychologists contributed concepts and methods concerning theories of leadership, human motivation and organizational relationships. The historical development of management thought indicates that more significant concepts and methods for management have been contributed from disciplines related to management than from scholars professing management as their discipline.

The conceptual framework for a management philosophy or theory which has been developed by the contributions to management thought from related disciplines has become so generally accepted that it can be applied to some of the disciplines that helped create it as well as other functional fields such as marketing, finance, production, personnel, et cetera.

Conceptual Framework for Management Philosophy or Theory

A conceptual framework for the development of a universally accepted management philosophy or theory consists of certain factors, elements, or functions which can be identified and combined into a system of thought. Management thought has developed to the stage where it has its own identity
distinct and separate from other disciplines and subject areas of business.

An example of a proposed conceptual framework for management is illustrated in Figure 5. An explanation of Figure 5 is as follows:

An economic and social environment always exists within organized society; and reciprocating institutional forces are always at work. A choice of objectives for business enterprise must be made that are economically, socially, and psychologically justifiable and acceptable to organized society.

Owners, professional managers, or some type of leadership must use a process of decision-making to choose the objectives desired for the enterprise as a whole or any segment of it. A decision-making process involves a sequence of intellectual activities like or similar to the following.

1. Problem must be identified and clarified.
2. Alternative courses of action must be discovered.
3. Consequences of alternative courses of action must be considered.
4. Evaluation of consequences of alternative courses of action must be made against desired standards.
5. Decision for action results.

Facilitating aids to the decision-making process in choosing courses of action for setting objectives or planning actions to achieve objectives are: (1) economic concepts such as opportunity costs or felicific calculus; (2) model building for considering and evaluating consequences of alternative courses of action; (3) strategies for courses of action from game
FIGURE 5
CONCEPTUAL FRAMEWORK FOR MANAGEMENT

Economic and Social Environment

The Choice of Objectives

Organized Society

Process of Decision-Making

Scientific Method

Process of Creative Thinking

Concepts

Models

Strategies

Techniques

Decisions for Action

Objectives Set

Process of Management

Planning
Organizing
Motivating
Controlling

Human Effort for Performance

Psychology

Sociology
theory such as the minimax, random choice, or coalitions; and (4) techniques for problem solving such as operations research or management science methods.

After the decision for action is made and the objectives have been set, the management process comes into use as the ways and means to attain the objectives. The management process involves: (1) planning to achieve the objective; (2) organizing to put plans into effect; (3) motivating (leadership, human relations, communication, and training) the people in the organization to carry out the plans to attain the objectives; and (4) controlling the activities in operative performance to assure conformance with plans to achieve the objectives. The management process operates in a cycle through time.

Human effort, facilitated by the required resources, is required for the performance of the operative functions and operative procedures essential to attain the objectives through the management process. The "human costs" resulting from frictions, tensions, frustrations, et cetera are minimized by the use of psychological and sociological concepts and theories to develop morale, incentives, and motivations for maximum output with minimum effort.

The conceptual framework for management indicates the factors, elements, and functions of management which can be identified and combined into a philosophy or theory of management. Although different terminologies exist for identifying the factors, elements or functions of management, the concepts have been established and accepted. Management thought has developed to the stage of establishing management as
a distinct and identifiable intellectual activity with a universal application for the achievement of any purpose by the intelligent use of human effort.
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AUTOBIOGRAPHY

I, John Franklin X., was born in Ada, Ohio, July 10, 1908. I received my secondary school education in the public schools of Oxford, Ohio. My undergraduate training was taken at Miami University, which granted me the Bachelor of Arts degree in 1930. From the University of Maine, I received the Master of Arts degree in 1933. While in residence there as Teaching Fellow in the Department of Psychology, I was assistant to Professor Charles A. Dickinson. During the years 1932-34, I served as Dean of Beal College. In 1935, I was enrolled as a graduate student at The Ohio State University where I specialized in the Department of Business Organization. While in residence there, I was appointed Graduate Assistant in 1936 and Instructor in 1937; I held this latter position until I was appointed Assistant Professor at Indiana University in 1939. In 1941, I was called to service as a first lieutenant in the United States Army. After serving in the United States Army until 1946, I was separated as a colonel and returned to Indiana University as Associate Professor. I was on leave of absence as visiting Associate Professor at U.C.L.A. in 1948. For the year 1949, I served as Commissioner of Revenue for the State of Indiana. During the years 1950-52, I served as Consultant to the Executive Office of the President, The White House Office. I was appointed Professor at Indiana University in 1952 and held this position while completing the requirements for the degree Doctor of Philosophy.

in Indiana, Directory of American Scholars, American Men of Science, and The International Blue Book.