

DEVELOPMENT OF MANAGEMENT SCIENCE AND SCIENTIFIC MANAGEMENT

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ABSTRACT: *The term “management” originates from the Latin word “manus,” meaning to lead and coordinate human activities in order to achieve efficient goals. Management science developed relatively recently as a result of research aimed at formulating the principles, laws, and methods that govern organizational activity. Scientific management represents the practical application of these theoretical concepts through the direction and organization of activities to achieve established objectives. The evolution of management has been influenced by the emergence of several schools of thought—classical, behavioral, quantitative, and systemic—each contributing to a deeper understanding of managerial processes. The relationship between management science and scientific management is one of interdependence: the former provides the theoretical foundations, while the latter validates them in practice. Today, the application of scientific knowledge in management is a key factor in economic progress, enhanced competitiveness, and improved organizational performance.*

KEY WORDS: *management, management science, scientific management, evolution, schools of thought, efficiency, organizational performance, competitiveness, theory and practice, economic progress.*

JEL CLASSIFICATIONS: *M-10, M-11, L-20*

1. INTRODUCTION

The term *management* derives from the Latin word *manus* (hand), signifying “to handle” or “to steer.” Later, the term was adopted into Italian as *maneggio* (handling by hand), and subsequently into French as *manège*, a word that mediated its introduction into Romanian with the meaning of “the place where horses are trained.” In English, the verb *to manage* was borrowed from French (*manège*), acquiring the meanings “to lead”

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and “to administer.” However, more significant for the later evolution of management was the abstract meaning attributed to this term—namely, the ability to think and properly arrange relationships with various things or beings in order to achieve desired results (Nicolescu & Verboncu, 2008).

The concept of *management* associated with this term has been assigned a multitude of meanings within economic theory and practice. Thus, in the specialized literature, one can find a wide range of definitions.

A nuanced definition describes management as the study of managerial processes and relationships within organizations, aimed at discovering the laws and principles that govern them, as well as designing new systems, methods, techniques, and managerial approaches capable of ensuring the attainment and enhancement of competitiveness (Nicolescu, et al, 2025).

In a more comprehensive approach, management is viewed through several interpretive lenses. It is regarded as:

- an art, reflecting its pragmatic dimension, embodied in the manager’s skill to effectively apply scientific knowledge to diverse real-world situations, achieving positive outcomes under conditions of efficiency;
- a state of mind, expressed through a particular way of perceiving, aspiring toward, seeking, and embracing progress;
- a science, understood as an organized and coherent body of knowledge—comprising concepts, principles, methods, and techniques—through which the phenomena and processes occurring in organizational leadership are systematically explained.

Nevertheless, management as a science crystallized only relatively recently, as a result of extensive research conducted by numerous specialists seeking to provide an appropriate response to the pressing needs of social practice.

2. PRESENTATION OF THE CONCEPT

The science of management entails the synthesis and generalization of practical managerial experience, the pursuit of new ideas, the formulation of managerial laws and principles, and the identification of optimal approaches and methods that can be applied in directing the activities of human organizations.

The science of management represents a body of accumulated and recognized knowledge that is systematized and formulated in accordance with the discovery of general truths or the operation of general laws. If the task of management science is to establish a foundation of laws, methods, techniques, procedures, and managerial rules, the actual implementation of these at the microeconomic level falls within the domain of *scientific management*.

Scientific management designates the set of processes through which all the theoretical and methodological elements provided by management science are operationalized in social practice.

“Scientific management comprises the totality of activities related to the direction, guidance, and coordination of human organizations in order to achieve their specific objectives - activities derived from the application of the principles, laws, rules, systems, and methods formulated by management science, adapted to the characteristics of each firm” (Cornescu, et al, 1994).

At the same time, scientific management encompasses not only an *applied* dimension but also a *creative* one. The latter arises from the continuous effort to adapt the principles of management science to the concrete realities of each organization, as well as from the necessity of selecting the methods and techniques that best correspond to the organization’s specific features or the problems that need to be addressed.

From a functional perspective, scientific management can also be regarded as an activity that integrates both a **technical-organizational** component (stemming from the nature of any production process) and a **socio-economic** component (arising from the nature of interpersonal relations within society) (figure 1).



Figure 1. The Dimensions of Scientific Management

By analyzing the definitions of *management science* and *scientific management*, one can conclude that several authors employ the term *management* interchangeably, using meanings attributed both to management science and to scientific management, even though specialized literature clearly distinguishes between the two.

In the earliest social formations - primitive communal systems, slavery, feudalism, and the Middle Ages - it is not possible to speak of a *science of management* due to the absence of structural-organizational, informational, and decisional foundations upon which such a science could be based. However, one can speak of the existence of *pragmatic management*.

In the primitive commune, the first rudimentary forms of management processes emerged, conceived and carried out within human groups organized by kinship ties (family, clan, tribe). At the same time, initial forms of managerial activity took shape through simple rules and prescriptions. Both *unipersonal management* (represented by the clan leader, religious leader, or war chief) and *democratic forms* of governance (such as the communal assembly or the council of elders) began to appear.

The slave-owning society was characterized, from a managerial perspective, by the emergence of the first forms of *macrosocial management*, reflecting the growth of human communities, the deepening of the social division of labor, and the development of productive forces.

The principal form of macrosocial management during this period was the *state*. At the *microsocial* level, more complex and well-defined structural -organizational, informational, and decisional elements began to develop.

During feudalism, both theoretical and practical progress was made in the field of management. In this context management systems became more diverse, reflecting the personality of individual managers, authoritarian management styles predominated, within structural - organizational systems, the degree of hierarchy increased in correlation with the multiplication of hierarchical levels.

The crystallization of management as a science occurred during *capitalism* - at the beginning of the twentieth century. Its development was closely tied to the economic and social evolution of society, to industrialization, and to the establishment of epistemological (theoretical) and educational premises, which provided a sufficient knowledge base.

A major contribution to the development of management science was made by Frederick W. Taylor and Henri Fayol, rightly considered the “founding fathers of management science.” In their works - *The Principles of Scientific Management* and *General and Industrial Management* - they provided the first systematic, scientific approach to the management process, emphasizing its structural components and formulating a set of principles, rules, and methods for scientific management (Taylor, 2004).

3. SCHOOLS OF THOUGHT IN MANAGEMENT

The most widely accepted classification of management school - endorsed by the majority of management specialists in the academic literature - is the one that employs as criteria the functions of management, the functions of the firm, and the nature of the concepts and methods used.

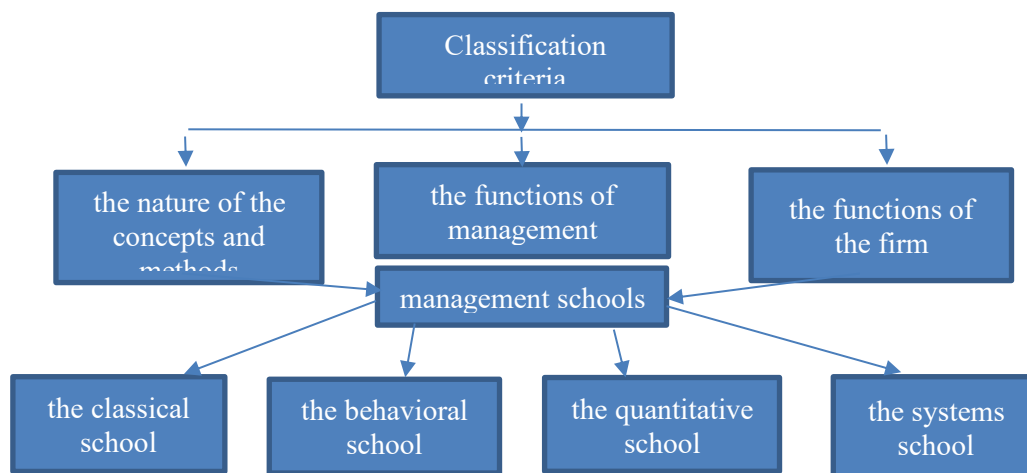


Figure 2. The Main Schools of Management

According to these classification criteria, the following major schools of thought in management can be distinguished: the Classical (Traditional) School, the Behavioral (Human Relations) School, the Quantitative School, and the Systems School (see Figure 2).

Considering the stages in the development of management science and the ways in which managerial problems have been addressed, the following schools of thought have crystallized: the Management Process School, the Empirical School, the Human Behavior School, the Social Systems School, the Decision Theory School, the Mathematical School, and the Dynamics School (see Figure 2).

Taking into account the views expressed in the specialized literature, the advantages and disadvantages of the main management schools have been extensively debated.

3.1. The Classical School

The principal representatives of the Classical School are Frederick W. Taylor and Henri Fayol, who laid the foundations of management science.

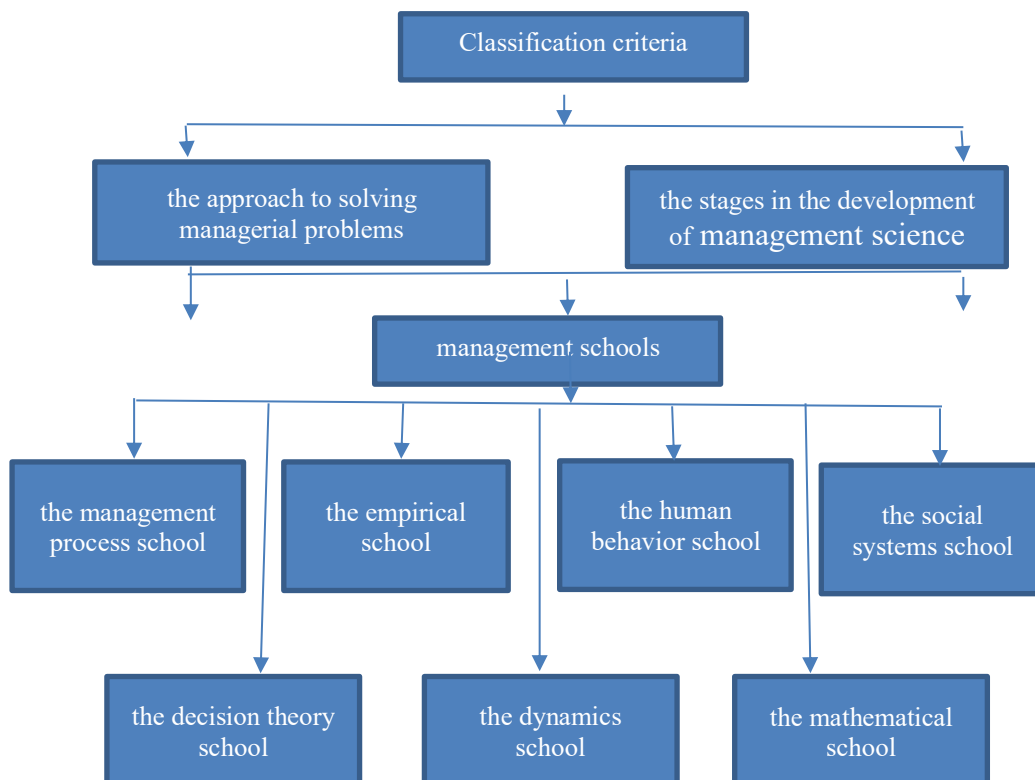


Figure 3. The Main Schools of Management

The outstanding merit of this school lies in the fact that it established the *scientific basis of management*, focusing primarily on the organizational function of management - both at the enterprise level and within the production function. The main economic categories employed in the studies produced by the Classical School include: profit, costs, turnover, discount rate, and investments, among others.

The decisive contribution of the representatives of this school consisted in the definition of a coherent body of concepts and principles that became the fundamental basis of management science. They also analyzed the rational design and functioning of organizational structures, emphasizing the *formal dimension* of organization.

However, several disadvantages of the Classical School can be identified: the limited importance assigned to the *human factor* in management issues; the rigid orientation toward maximizing *individual labor productivity*; the treatment of the enterprise as a closed, self-sufficient system, with an *exaggerated focus* on formal organizational structures.

3.2. The Behavioral (Behaviorist) School

The defining characteristic of the Behavioral School lies in its *extensive application of psychological concepts and methods*, such as motivation, sociograms, value systems, group dynamics, aptitude testing, and status analysis.

These tools are used to study key managerial functions such as leadership, control, coordination, and organization. The firm's functions primarily addressed by this school are those related to production, human resources, and research and development.

The major contribution of the Behavioral School to the development of management science is the emphasis placed on human resources within the management process, with a particular focus on the *motivational factors* that drive individual and group performance. The main criticisms directed toward the principles promoted by this school concern primarily the limited operational effectiveness of its proposed concepts and theories, as well as the overemphasis on the role of the organizational climate in achieving economic results.

3.3. The Quantitative School

The Quantitative School is characterized by the use of mathematical and statistical tools, adapted to the needs of economic practice. Its development is closely linked to the expansion of electronic computing. Among the most frequently used techniques are graph theory, queueing theory, combinatorial analysis, and linear programming, whose applications are primarily concentrated in the managerial functions of forecasting and organization.

The main merit of this school lies in its contribution to providing a superior scientific foundation for managerial decisions and actions, thereby advancing the development of microeconomic management. However, its limitations stem from its predominantly quantitative approach, which often overlooks *qualitative aspects*, leading to a one-sided treatment of certain managerial functions.

3.4. The Systems School

The Systems School is characterized by several distinctive features that grant it both *complexity* and *broad applicability*: it employs a wide range of concepts and methods derived from other scientific disciplines, including economic analysis, sociology, psychology, finance, statistics, mathematics, law, computer science, and logic; the concepts and methods used by this school assign approximately equal importance to each of the five management functions—forecasting, organizing, coordinating, leading (motivating), and controlling/evaluating—while emphasizing the management process as an integrated whole; according to systems theory, the firm is viewed as a system, and its five functions are treated as subsystems, a perspective that provides greater *realism* and *dynamism* to the solutions formulated.

The Systems School is the youngest of the management schools and essentially represents a synthesis of its predecessors. Its major contribution lies in its multidimensional, integrative, analytical, and synthetic approach to the enterprise, beginning with its fundamental objectives and taking into account the multiple interdependencies among its components.

Furthermore, the Systems School places at the forefront the economic purpose of the enterprise, within a complex and forward-looking vision, thereby making an essential contribution to the arsenal of tools available for addressing managerial problems.

A synthetic presentation of the contributions of the main schools that have shaped the development of management science leads to the conclusion that these schools have collectively achieved a continuous refinement of managerial concepts and instruments, reflecting the broader evolution of capitalist relations.

Throughout social evolution, particularly in the former socialist countries, there was a massive political interference in the sphere of management. From the very onset of socialism, management assumed a predominantly ideological character, subordinated to the fundamental goal of maintaining and consolidating the power of the ruling communist party elite in each country.

4. CONCLUSIONS

The relationship between management science and scientific management is strongly marked by its specific human determinant, being reflected in economic practice through the collaboration between management specialists and practitioners. Thus, the application of the principles, methods, and procedures developed by management science must always be confronted with and validated by scientific management. The reverse *feedback* process is ensured through the provision of the informational material necessary for designing the methodological and theoretical components of management science, supplied by the very firms in which scientific management is practiced.

From this dynamic derives the essential distinction between management science and scientific management - namely, the greater diversity and heterogeneity of the latter. While management science presents a unified theoretical and methodological content, its translation into practice takes on a wide variety of forms.

Management has evolved from an empirical activity into a rigorous science grounded in principles and methods. The diversity of management schools highlights the need for multiple perspectives and continual adaptation to changing social and economic realities. Today, the synthesis between theory and practical application remains essential for organizational performance and development.

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