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Periodic Table of Management Elements as a New Management Paradigm

Tabla periódica de elementos de gestión como un nuevo paradigma de gestión

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Content

- 1. Introduction
- 2. Methods
- 3. Results
- 4. Discussion
- 5. Conclusion

References

ABSTRACT:

In order to efficiently manage any organization, whether this is a small firm with several people or the largest corporations, as well as governmental bodies, it is necessary to have basics of management. Management is the science about managing and governing. Its principles and functions make it possible to learn management regularities, forms and methods. The periodic table of management elements is a vivid example of the comprehensive approach to managing an organization. The present article includes the results of researches on forming a new paradigm of management. It considers interpretations of the term "management paradigm", defines factors of the national specificity of management. It offers a comprehensive approach to managing a company (an enterprise) by using the Periodic Table of Management Elements that is a vivid example of a comprehensive approach to managing a company (an enterprise). **Keywords:** Management, management paradigm, periodic table of management elements.

RESUMEN:

Para administrar de manera eficiente cualquier organización, ya sea una pequeña empresa con varias personas o las corporaciones más grandes, así como también organismos gubernamentales, es necesario tener los principios básicos de la administración. La administración es la ciencia sobre la gestión y el gobierno. Sus principios y funciones permiten aprender regularidades, formas y métodos de gestión. La tabla periódica de elementos de gestión es un vívido ejemplo del enfoque integral para administrar una organización. El presente artículo incluye los resultados de investigaciones sobre la formación de un nuevo paradigma de gestión. Considera las interpretaciones del término "paradigma de gestión", define los factores de la especificidad nacional de la gestión. Ofrece un enfoque integral para administrar una empresa (una empresa) mediante el uso de la Tabla periódica de elementos de gestión que es un claro ejemplo de un enfoque integral para administrar una empresa (una empresa).

Palabras clave: gestión, paradigma de gestión, tabla periódica de elementos de gestión.

1. Introduction

Over the recent century of the dynamic development of management as an area of expertise, ideas of researchers and practitioners have repeatedly and essentially transformed. Scientific publications and specialized magazines on management contain a number of scientific works devoted to the management crisis and need to change management paradigms (Drucker, 2004; Sven Modell 2010; Vinokurov 2006). This can be an evidence that the researchers' and practicing managers' ideas about the reality in management do not comply with this reality any more, and the concepts that used to work before and make up basis of the enterprises activity must be reconsidered (Sirotkin 2012).

A paradigm (Greek – "an example, a model, and a sample") is a combination of essential scientific attitudes, ideas and terms accepted and agreed on by the scientific community and the majority of its members (Dictionary of foreign words and expressions, 1998).

In the science methodology the term "paradigm" is a combination of values, methods, technical skills and means accepted in the scientific community within the established scientific tradition at a certain period of time ([Philosophy of management: problems and strategy]. Institute of Philosophy of the Russian Academy of Sciences, 2010).

According to researchers, the management paradigm is a scientific approach (theory) based on a system of motions that shows essential aspects of the management activity including management functions, goals of the activity, efficiency, communications, and motivation (Gorlenko, Borbats' and Mozhayeva 2016).

To our mind, the management paradigm is a system of notions, ideas related to the theory and practice of management, based on the research, analysis and generalization of the reality, and altered according to changes of the external and internal environment of organizations.

One of the important tasks of management as a professional activity is the forecast of external environment changes and formation of the management system focused on taking into account future tendencies and decreasing the level of their indefiniteness. Management was developed from the system of reactive adaptation to the management system based on supposed changes and impact on them (McKenna, Richardson and Manroop 2011).

It is clear that the management paradigm formation is closely interrelated to the state, peculiarities of the existing entrepreneurship model, and conditions of its functioning. It is necessary to emphasize that the management paradigm is constantly being changed, updated according to the development of social and economic conditions of production. At every stage it reflects the leading ideology of efficient management and influences the practical managerial activity.

In spite of the fact that the modern Russian management was formed under the conditions of changing over from the planned to market economy within a short term, the national model of management inherited numerous negative attributes of the previous system that contradicted to the current requirements. Researchers define the following questionable peculiarities of the national management system (Borisenko and Manuilova 2014; Askanova and Kasatkina 2010):

- 1. Belief in the absolute manageability and a low level of the management culture, i.e. many top managers are sure that they are the only ones who know how to behave correctly and if someone's position does not comply with theirs, it is a priori wrong,
- 2. Concentration on obtaining surplus profits says about the entrepreneurs' focus on earning money and lack of sufficient attention on self-fulfillment (their own and HR), morality, creativity, and organizational culture,
- 3. Lack of the efficient system of motivation and stimulation of the personnel's labor, which is expressed as economy on the labor payment, depreciation of lower echelon employees because of the assurance that they can be easily replaced by other employees, delay in payment of wages, applying fines as a means of motivation, paying hidden wages, undue labor conditions at workplaces,
- 4. Deformed individualism and inability to work in a team expressed in a certain dogma: the personnel is guilty for failures in the organization, and success happens only through personal efforts of a manager,
- 5. Unwillingness to change anything, aptitude to maintain sustainability, urge to maintain status

quo, one's position, office, and best practice, to be proud by the former merits and achievements, and continue doing everything as before, to maintain the fixity of processes at the enterprises that caused success once,

- 6. Domination of operative management, long-term planning is not a popular tool,
- 7. Phobia of risks when the majority of managers are not ready and cannot risk, and
- 8. Shady management when managers are appointed under the principle of personal acquaintances or devotion rather than under the modern management competence.

To our mind, the key goal of management lies in its essence and is defined as the purposeful impact on the team of employees or separate executors to fulfill the set tasks and achieve the determined objectives. Actually, we consider the purposeful impact in the context of the problematics under research not as a way or means of constraint, but as a mechanism that complies with today's development and fulfills the set tasks and achieves the determined objectives of the enterprise that will be accordant to and identified with the goals of executors bearing intellect, knowledge, creative ideas, i.e. generators of competitive advantages of the enterprise.

That is why the above transformational processes require a comprehensive approach in the society, economy, education, culture, consciousness, as well as a system reconsideration of many theories and formed notions. Certainly, they will change the paradigm of management of enterprises towards the dynamic development of employees' intellectual potential, formation of the enterprise intellectual capital. The main requirements to the enterprises personnel will include not only readiness, sense of duty and responsibility, but also continuous educating, creative initiative, creativity, personal interest and participation in creating the future result of the enterprise. Specialists from various areas being bearers of intellect, knowledge, and competences will become independent from employers. The prevailing form of their cooperation with management systems of enterprises will be moving from one project to another based on their cocreativity when creating a new product (production) and coparticipation in allocating profits and property on the matching contribution basis.

The scientific discourse about forming a new management paradigm is becoming more and more popular. However, before offering the authors' view on this process, we will consider the history of transforming the key views on this problem. To understand the essence of forming a new management paradigm of enterprises in the modern entrepreneurship, it must be considered in terms of the evolution of basic management concepts that have consistently replaced one another over the recent decades and in the context of the general system of the enterprise management.

In the late XXth century and nowadays the theory of management was considerably developed in the area of expert systems, technologies of knowledge management, structuration and generalization of knowledge about management techniques, HR management, corporate systems of knowledge management, development of the organizational culture, management of intellectual capital, various concepts of motivation and leadership, etc. It is important to note that every new concept does not disaffirm the previous one. However, it supplements it and takes into account the state of the internal and external environment of the enterprise.

At the early XXIst century, management started understanding the need to form a new paradigm because the traditional management as a mechanism of influencing the people's consciousness as expressed in various models, forms and systems had reached its limits (Babak Daghighi, Miss Laiha Mat Kiah, Shahaboddin Shamshirband, Salman Iqbal and Parvaneh Asghari 2015). The management theory ceased taking into account needs of experts. To a certain degree, it became a break in developing the entrepreneurship. According to A. Vikhanskiy, "in some methods of performing the management activity, principles of management that were introduced within the existing paradigm, did not provide the desired results anymore; on the contrary, they started causing negative consequences. The managers who based their activity on the "anti-management" principles achieved success" (Vikhanskiy 2004).

That is why the fundamental issue about the ways to modernize the existing management paradigm and what a new paradigm must look like is still disputable. P. Drucker made a

considerable contribution to stipulating the importance of forming a new management paradigm (Drucker 2012). He offered his understanding of this paradigm: Management must define what results to be achieved; management must mobilize resources of the organization to achieve these results".

National researchers also fruitfully work at the problem of establishing a new management paradigm. Thus, I.N. Drogobitskiy (2011) thinks that there is an objective need to formulate the management paradigm of the XXIst century – management of creativity. It includes the following:

Counteraction to processes of the personality's self-destruction and destructive tendencies of the external environment,

Creating conditions for harmonizing open self-regulating systems: person, organization, society, etc.,

Creating conditions for using the creative potential of every person (regardless of the level of his/her consciousness), and

Forming and implementing the mechanism to manage creativity on all levels of any open system.

Researchers offer a paradigm of the managed development that is implemented via the integration of self-organization and purposeful management processes. Paradigms of the modern management, and such concepts as synergetic, institutionalism, concept of sustainable development, managerial post-modernism, and concepts of managed transformations of management processes make up their conceptual and applied basis (Radchenko and Shekhovtsova 2012).

The main dominants of a new management paradigm formulated by national and foreign researchers in the late XXth and in the early XXIst centuries are suppositions that the hierarchy, tough rules and schedules are replaced by the search for an acceptable state during continuous changes.

2. Methods

It is necessary to take into account that in practice principles and functions of management are closely interrelated. It means that they must be considered comprehensively. **The Periodic Table of Management Elements** (hereinafter referred to as PTME) gives a comprehensive idea about the management process. It is a vivid example of the comprehensive approach to the organization management.

The metaphoric name "periodic" is explained by the fact that the essence of this table somehow reminds the periodic table of chemical elements made by D.I. Mendeleev, and partially by the authors' wish to attract attention to this development because it is a convenient and vivid tool. Using the metaphor, we try to understand one of the components of the managerial experience as related to another one.

The goal of the PTME is to show levels and stages of management, interrelation and interdependence of elements and their combination in a system manner. It is offered to analyze management in terms of general principles, and divide it into separate elements. It will help to quickly define weak points in a certain segment of the manager's activity. This approach motivates trainees not only to actively perceive theoretical knowledge but also to show their practical skills. It allows practitioners to see the integrity of the management system or its separate part. The PTME gives a vivid visualized idea about the system of managing the organization regardless of its size and form.

3. Results

The PTME systemizes and defines basic notions of the management framework: goals, tasks, stages, functions, and areas of the subject and object managerial interrelations. During the consideration using the PTME, there is an opportunity to monitor the interrelation and mutual impact of various basic elements of management: from goal-setting to fulfilling the set tasks, achieving goals, control and correction of the integral process of management,

as well as periodic repetition of this process in time.

It is known that to implement the management is, first of all, to consider it as a system characterized by the succession of the following actions:

- Development of the strategy and tactics to achieve the goal,
- Setting certain tasks,
- Development and selection of efficient management methods,
- Organization and control of the main areas of activity and development of the organization,
- Analysis and estimation of the efficiency of the taken decisions, and results of fulfilling them,
- Selection and placement of subdivisions managers and management apparatus,
- Analysis of problems, opportunities of development and their impact on the activity of the enterprise,
- Selection of the best alternative,
- Guiding programs including communication and motivation, and
- Repeating some and all above actions.

The logics specified in the PTME shows the interrelation of various management functions. At the same time the above functions follow one another as gradual states of the managerial activity. In the reality, these functions are regularly adjoined and combined in the managerial activity and make up a general managerial cycle.

In management the enterprise is represented as a complex scheme that can be considered as an organized aggregate of separate interrelated and interrelating elements. Every element contributes something certain to the integrity that is unique by its characteristics. Due to it, the PTME offers to analyze the main stages of the management process, such as planning, organization and control in terms of the notion "level". The latter is interpreted as the consideration of the management process at the enterprise in terms of fulfilling separate functions or subsystems of the organization.

Levels are defined in accordance with the basic subsystems of the organization. To our mind, five determined levels are basic components of the management process. However, their number as well as stages of the management process can be higher depending on the organization needs, specialization and scales, and, certainly, the science development. In case it is necessary to get a more accurate idea, it is possible to single out additional levels, such as political, level of risks, etc. that will supplement the basic PTME and can be described in separate PTME of a similar structure.

The consideration of management stages by means of levels provides the supreme system with understanding of the management process. In the PTME the management process is analyzed by two areas. Below is an example of such consideration (See Table 1).

Table 1Periodic Table of Management Elements

		STAGES			
		Planning	Organization	Control	
LEVEL	Strategic	 Analysis of the external environment Analysis of the internal environment Defining the mission Defining goals Developing a strategy 	 Formation of the organizational structure in accordance with the selected strategy Formation of determining statutory documents that provide the strategy implementation 	 Collection and analysis of indicators on the strategy implementation Analysis of the efficiency of the adopted work standards Analysis of the organizational structure 	

	6. Defining key indicators of the strategy implementation7. Business planning	3. Formation of the documents flow and informational flows system4. Taking decisions about implementing the business plan	efficiency 4. Analysis of the documents flow and informational flows system 5. Developing the correction of goals, strategy, standards of work 6. Collection and analysis of results on the business plan implementation
Financial	 Forming long-term, medium-term and short financial plans Budgeting Planning monetary flows Taxation planning 	 Accounting policy of the organization Management and business accounting Development of the taxation policy, optimization of taxation Budgeting Formation of the economic security of the organization Raising, allocation, and use of the organization funds 	 Control over implementing financial plans Control over monetary flows Control over veracity of accounting, business and taxation Monitoring and analysis of the budget implementation Analysis of financial indicators of the organization activity
Marketing	 Forming long-term, medium-term and short-term marketing plans Development of the program of marketing actions Marketing budgeting Planning goods and services sales Planning development and introduction of new goods and services on the market 	 Forming the system and analysis of the marketing information Development of the price formation system Formation of the goods flow system Formation of the promotion system (stimulating sales) Goods and services sale, servicing Market researches and development of new goods and services 	 Control and analysis over implementing marketing plans Estimating the competitiveness of goods and services Control and analysis of the level of goods and services sale Analysis of sales profitability Analysis of marketing efficiency Control over implementing new goods and services
Technical	 Planning technical and technological development of the organization Planning investments in the production and 	 Development and implementation of new technologies and equipment Compliance with the labor protection regulations 	 Control over implementing the production program (plan) Estimation of the impossion activity officions.

- 2. Planning investments in the production and technologies development
- 3. Planning measures on providing industrial security of the organization
- 2. Compliance with the labor protection regulations, safety rules, industrial sanitary, fire- and accident protection security
- 3. Organization of
- 2. Estimation of the innovation activity efficiency
- 3. Control and analysis of the efficient and rational use of material and production resources, developing offers

4. Planning repair works, production and supporting on expenses reduction current maintenance of processes 4. Control and analysis of buildings (constructions), 4. Managing intrathe goods and services equipment, and instruments production material flows quality 5. Planning production 5. Reserves management 5. Control over the labor 6. Planning measures on protection regulations, 6. Repairing and servicing improving goods quality safety rules, industrial works sanitary, fire and accident 7. Planning purchases 7. Providing material protection security resources 6. Analysis of production processes efficiency **Personnel** 1. HR planning 1. Forming the HR policy of 1. Control over achieving HR the organization goals of the organization 2. Planning the need of the organization in HR 2. Selecting, hiring and 2. Control over complying adaptation of the HR with the HR policy of the 3. Planning the need in organization forming the skill pool 3. Allocation and assigning of powers, obligations, and 3. Estimation of the 4. Planning rotation and responsibility (delegating efficiency of managing HR of promotion of the HR powers) the organization 5. Planning training of the 4. Keeping HR records 4. Control over correct keeping of HR records 5. Providing HR security 6. Budgeting the HR 5. Estimation and department 6. Forming a system of assessment of the HR of the motivating and stimulating 7. Planning the employees' organization HR career 6. Control over fulfilling 7. Conflicts management budget on HR management

The vertical shows stages of the management process: planning, organization and control. There can be more stages. This example singles out the basic and most frequent ones to mainly visualize the system of grouping. It is confirmed by periodic features of the above table.

The horizontal includes two subsystems that show strategic and situational aspects of management in terms of five levels. There can be a higher number of management levels. The strategic level shows the basic stages of the strategic management process. Stages of the situational management are considered in terms of financial, marketing, technical and HR levels.

The overlap of vertical and horizontal areas is formed by fifteen registers that are filled with basic elements of the management process – a set of tools that makes it possible to see the entire, to take optimal decisions that minimize negative consequences, and helps to decompose the arising problems, simplifies managing complex processes. Besides, elements in every register can be changed, supplemented and are an example, one of possible variants.

At the same time, elements are not final because the management development causes the occurrence of new tools, methods, and technologies that can constantly supplement the PTME. This is the principle of the PTME.

The general functions of the management process that are not singled out in the PTME as stages are allocated within the PTME as the main components of management in registers of the level that considers and implements them, e.g. motivation of personnel is shown on the HR level.

It is necessary to emphasize that elements within the PTME registers are singled out by the principle of the most frequent and applied in the management practice. A professional

manager must obligatorily know them. However, the PTME does not exclude components of management that are not included in it. This is the essence of the PTME because every new component can supplement the existing PTME.

When solving various tasks, from forming the structure of the organization to control over the activity efficiency and correcting actions, the manager works within levels and stages of the management process described in the PTME. Due to this, the manager's full and system idea about the management process and its components causes more efficient practical activity. If at least one element (level or register) falls out of the manager's functions, the management logics can be broken.

4. Discussion

The attempt to generalize basic ideas about the process of management in one table – the PTME - allows a top manager to simply and clearly see the whole range of the tasks imposed on him and processes. It helps medium-rank and lower-level managers to define their place in the system of the organization management, as well as the whole range of its activity.

The use of PTME in forming a process approach will also simplify the determination of processes and creation of the map of processes. Combining basics of both functional and process management allows to see vividly and in a system manner the ways of moving from the functional to process management, which is one of the most urgent issues today.

PTME can be practically applied by several ways:

1. Applying in the educational process when training managers

Applying the PTME in the educational process can be considered as an innovational approach to training managers.

Firstly, the PTME can be implemented as an educational course that consists of theoretical and practical parts. The theoretical part studies the substantial part of registers, and then the management theory and the practical part solve constitutional tasks of various business models of organizations by using the PTME. Such approach is substantiated by the fact that it gives an integral and system idea about management and its certain functions. The control over knowledge includes checking how the theoretical material was mastered in the form of tests and tasks, and assessing skills of practical use of theoretical knowledge in the form of using situational tasks.

Secondly, the PTME can be used as a tool when forming curricular and educational programs to train management personnel. This system approach can be applied both in higher educational, professional, graduate and additional educational establishments, and when forming programs of the intra-corporate education. Thus, applying the PTME in the education, it is possible both to master theoretical knowledge on management process, theory and practice, and obtain skills of applying this knowledge in practice at due to implementing systemized and graphic information in the process of training. As a result of introducing the PTME when training managerial personnel, it is possible to improve the quality of education of specialists of this area.

When studying basics of management as a scientific discipline, the main task is to acquire a complex of knowledge related to selecting new forms and methods of management when creating a unified, efficient and flexible system of the organization management in the context of the constantly changing environment.

The PTME systemizes groups and generalizes the knowledge of management theory and practice into a simple, convenient, and vivid tool that makes it possible to vividly visualize new elements of management in one table. The compactness of information shown in the PTME allows simplifying the process of acquiring and teaching it, and makes the use of knowledge in the management practice easy.

2. Assisting the work of top, middle-rank and lower-level managers

The PTME is a vivid practical tool that can be applied as

- A tool of time management in the everyday work of a manager that will help to define the priority of tasks by covering the management system as a whole,

- A tool to define centers of responsibility, delegating powers,
- A tool to develop, implement and control the Balanced Indicators System, KPI, etc.,
- A tool to define and automate business processes,
- A tool to test, estimate the efficiency of the organization management system,
- A tool to estimate the investment attractiveness and business planning, and
- A tool of short-, medium- and long-term planning, organization and control over the organization activity.
- 3. Generalizing software product based on PTME

The software product generalizes the experience of the modern science and management practice. It can be applied for educational purposes, as well as in the automation of planning, organization, and control over the practical activity of the organization, testing the management system efficiency, and estimation of the organization's activity, etc.

5. Conclusion

Modern problems and basics of forming the general theory of management in terms of paradigm are multifaceted and multifunctional. They take into account interests of the real entrepreneurship, owners, and managers, scientific schools and system of education as a type of business. They also depend on the level of development of the informational and communicative technologies system.

The developed PTME described herein is a vivid example of a comprehensive approach to managing an organization. At the same time adopting the basic components of the management process in such systemized and vivid form will help the future manager to master the knowledge that is an efficient tool of the managerial activity.

Taking into account the evolution of the management development as a scientifically substantiated and qualitatively formed system of the enterprises management and the offered concept of the comprehensive idea about the process of management, the idea of management participation and involving frontline highly qualified employees to management processes is urgent. In the future it is reasonable to form principles, develop criteria and indicators that will allow stipulating new management reality in the context of involving the HR of the organization in management.

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[Index]

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