

Managerial innovation for small and medium enterprises

Innovación gerencial para PyMEs

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ABSTRACT:

The modern market challenges and global globalization processes make the small and medium enterprises (SMEs) constantly search for new opportunities for development and adjustment to the environment, as well as improve the quality of products and services. Managerial innovation is an efficient tool for improving the performance of SMEs, as they allow creating the necessary conditions for the implementation of the product and technological innovations and underlie the organization of innovation. The article provides the concept of managerial innovations; their classification and place in the managerial processes at enterprises are presented. An empirical study of the level of innovation culture at the domestic SMEs is conducted, and the need to introduce managerial innovations into their activities is substantiated. The existing managerial innovations and prospects for their implementation in the activities of the SMEs are explored, including the terms of the transition of the world economy to the knowledge economy.

Keywords: innovation, managerial innovation, small and medium-sized enterprises, innovative culture, anti-innovation barrier, knowledge management.

RESUMEN:

Los desafíos del mercado moderno y los procesos de globalización hacen que las pequeñas y medianas empresas (PYMES) busquen constantemente nuevas oportunidades de desarrollo y adaptación al medio ambiente, así como también mejoren la calidad de los productos y servicios. La innovación de gestión es una herramienta eficiente para mejorar el rendimiento de las PYME, ya que permite crear las condiciones necesarias para la implementación del producto y las innovaciones tecnológicas y es la base de la organización de la innovación. El artículo proporciona el concepto de innovaciones gerenciales; se presentan su clasificación y lugar en los procesos gerenciales en las empresas. Se lleva a cabo un estudio empírico del nivel de cultura de innovación en las PYME nacionales y se verifica la necesidad de introducir innovaciones de gestión en sus actividades. Se exploran las innovaciones gerenciales existentes y las perspectivas para su implementación en las actividades de las PYMES, incluidos los términos de la transición de la economía mundial a la economía del conocimiento.

Palabras clave: innovación, innovación de gestión, pequeñas y medianas empresas, cultura innovadora, barrera contra la innovación, gestión del conocimiento.

1. Introduction

The current stage of the management theory development is of multivector nature, described by the destruction of the traditional principles of classical (scientific) management, as well as significant contradictions between planning and spontaneity and between regulativeness and flexibility of managerial decisions for achieving the objectives of enterprise development. A variety of operating conditions for SMEs, competition models, and organizational conditions necessitate the formation of new scientific and methodological management tools.

Innovation in the modern society is a result of the scientific and technical activities designed as an object of intellectual property, materialized in the production sector (performed in the service sector) and demanded by consumers.

Material, technological, service, social, and managerial innovations are distinguished, according to the criterion of the embodiment scope. The latter should be understood as a special form of changing the existing principles, structures, procedures, methods, techniques, and/or any elements of the organization's management system into new ones that are a result of the creative activity (Chechurina, 2010; Batkovskiy et al., 2018; Chkalova et al., 2019; Hasanudin et al., 2019; Vlasov et al., 2019).

The most important direction for improving the SMEs' activities is refocusing on an innovation-driven growth model – in particular, using the latest technologies in the production of goods and services, expanding the range of innovative goods and services, developing comprehensive organizational and managerial solutions, and introducing advanced marketing tools aimed at optimizing production processes. The innovation-driven growth of enterprises in the modern conditions is impossible without the advanced tools in the management system – in particular, in the introduction of managerial innovations.

Birkinshaw et al. (2008), believe that managerial innovation is the introduction of innovations in the enterprise management system in order to increase its efficiency, enhance competitiveness, and secure long-term success. These innovations are associated with the introduction of new principles, procedures and methods of management, innovations in the organizational configuration of enterprises, and decision-making technology, which predetermines changes in the enterprise management system. (Ibidem)

According to P.I. Vaganov, managerial innovation is a chain of interconnected and consciously initiated changes associated with the qualitative reforming of the management unit and aimed at improving the stability, efficiency, and competitiveness of the enterprise. From this standpoint, managerial innovation reflects a qualitative step-by-step transformation of the organization's management system (Vaganov, 2003, p. 46).

S.B. Murashov and A.S. Korezin understand managerial innovation as the newest methods and technology implemented in the management system and aimed at achieving the goals and increasing the productivity and performance of the enterprise (Murashov and Korezin, 2018, p. 102).

Managerial innovation at SMEs is classified into the following main directions:

- improvement of organizational structure of the enterprise (creation of new departments, divisions, and areas, and liquidation of the existing ones, provision of new services or expansion of the existing ones; transfer of individual functions to outsourcing, etc.);
- mechanization and automation of the managerial labor, including the introduction of various information management systems; and
- professional development of managers.

The introduction of managerial innovation is an efficient way to ensure the uniqueness and effectiveness of the enterprise management system. This is because the managerial innovations are individual for each organization. The role of managerial innovation in improving the production efficiency is measured in terms of three aspects: technical conditions for the implementation of innovations, impact on the technical progress

materialization rate, and impact on the innovations spread rate (Voronkova et al., 2017). The introduction of managerial innovation is based on the change in the tasks that the enterprise solves, which is caused by objective reasons that occur in the external environment.

Managerial innovation has for a long time been considered as a satellite of technological changes that occur as a result of the search for new forms of purposeful influence on the enterprise management system. However, the development and implementation of managerial innovation at enterprises have recently become independent, self-sufficient projects that contribute to their development and aim at securing long-term competitive advantages.

Managerial innovation mostly remains behind the scenes when solving problems of the operation and development of SMEs in the modern conditions, which negates their importance in improving the qualitative and quantitative performance of the enterprise. However, it must be noted that managerial innovation creates the conditions required for the introduction of other types of innovations – in particular, product, technological, marketing, and sales innovations – and serves as the basis for organizing the innovation at the enterprise.

Overall, managerial innovation is a way to improve the organizational structure, decision-making style and methods, as well as the use of new information processing tools. They hold an important place in the innovation activities of enterprises. Although it is considered that using the product innovations is the basis for any enterprise development, the managerial innovations should be considered more important. They secure obtaining long-term competitive advantages that cannot be copied by competitors, solving strategic problems, etc. In this context, an important task is to form an entrepreneurial culture favorable for innovations. The desire of employees for continuous improvement and growth contributes to the innovation-driven growth of the organization. This atmosphere also contributes to the generation of new ideas, inventions, and extraordinary offers.

The goal of this article is to explore the level of innovation culture at the SMEs as a potential for introducing managerial innovation, justify the need to introduce managerial innovation in their activities, and identify ways to implement them as a factor in improving competitiveness.

Hypothesis of the study is as follows: introduction of managerial innovation in the management of SMEs necessitates emergence of a new type of managers capable of managerial innovation.

According to the results of the study, it can be concluded that the goal of the study has been achieved.

2. Methods

An expert sociological survey "Diagnosing the Innovative Climate and the Innovative Potential of the SMEs" has been conducted.

The main reasons for the study and introduction of innovations in organizations are the following: increasing competition and attempts to gain competitive advantages in the market and maximize profits; consumer demand growth; ensuring the prestige of the organization and rapid resolution of problems that may arise in the organization; and exploration of scientific innovations and their introduction into the production process in order to improve the performance of the organization.

Thirty-two heads of SMEs participated in the study. The information was collected using a questionnaire-based survey.

3. Results and discussion

The results of the questionnaire-based survey to determine the level of innovative culture of the SMEs' managers are presented in Table 1.

Table 1
Level of innovation culture of SMEs' managers

Question	Results, %		
	"always"	"sometimes"	"rarely"
Assess your attitude to innovation using the following rating scale:			
Do you follow advanced/international practice in your business?	59	28	13
Do you use/adapt the best practices/international practice to meet the changing market needs?	53	34	13
Do you engage in self-education in innovation?	31	28	41
Are you ready for the implementation of innovative ideas, innovative products and technologies?	63	25	12
Do you use creativity in your work?	53	31	16
Average	51.8		

The generalized results of the survey of the SMEs' managers indicate that the average level of innovative culture of managers is medium (51.8 %).

The level of informational readiness of managers to innovation in the service sector is demonstrated as the rating of sources for obtaining information about innovation (Table 2).

Table 2
Rating of sources of information on innovation

Source of information on innovation	% mentions	Rating
Internal workgroups/meetings	22	2
Internal trainings	12	4
External trainings, workshops, conferences	9	5 – 6
Media	9	5 – 6
Internet	34	1
Communication with colleagues	16	3
Books on management and innovation	6	7 – 8
Domestic and international exhibitions	6	7 – 8

Of the eight above sources, the following are the most used in the work of the SMEs' managers: Internet – 34 %; communication with colleagues – 16 %; and internal workgroups/meetings – 22 %.

The sources that are used the least are internal trainings – 12 %; external trainings, workshops, conferences – 9 %; media – 9 %; domestic and international exhibitions – 6

%; books on management and innovation, etc. – 6 %.

Consequently, the level of information readiness of the managers is below average because external sources important for the formation of an innovative culture, such as domestic and international exhibitions, books on management and innovations, external trainings, workshops, and conferences have scored very little – they are used passively. The rating of anti-innovation barriers, which are an obstacle to the development of innovation, also reveals the state of readiness of the managers to innovation (Table 3).

Table 3
Rating of anti-innovation barriers

Anti-innovation barriers	% mentions	Rating
Heavy workload	18	3
Lack of funds for training and development in the organization	22	2
Unstable financial situation in the organization	28	1
Belief that effective management is available without innovative technologies	0	9
Poor health, other personal reasons	12	4
Disagreements, conflicts in the organization	6	6
Weak awareness of possible innovations in the organization	9	5
Lack of monetary incentives	3	7 – 8
Fear of negative results	3	7 – 8

The question "What are the three major anti-innovation barriers that hinder your innovation-driven growth?" was responded by 66 % of the respondents as follows: unstable financial situation in the organization – 28 %; lack of funds for training and development in the organization – 22 %; heavy workload – 18 %; and poor health, other personal reasons – 12 %. Only 3 % of the respondents named fear of negative results, and 6 % named disagreements and conflicts in the organization.

A rather positive fact is that nobody named belief that effective management was available without innovative technologies in the survey.

Based on the results, the following tasks for the near future are the most relevant:

1. The issues of introducing innovation into the SME management system are currently relevant, and their relevance will grow as Russian business moves towards the world market. Innovative thinking in the organization is the key to success, since a favorable innovative culture awakens incredible energy, initiative, and responsibility associated with achieving high goals and results.
2. Major anti-innovation barriers include the financial instability of the SME sector, as well as the lack of funds for training and development in the organization.

As such, there is an urgent need for new type of managers capable of managerial innovation in SMEs.

Let us consider the existing managerial innovations and the prospects for their implementation in the SMEs' operation.

The following managerial innovations have received the greatest recognition in the world:

1. The Model of the Continuous Improvement (KAIZEN), which includes such components as substantiation of methods and tools for the refocusing of management activities, a focus on defect-free management, and a detailed coordination of the entire management process (Abdulmouti, 2018),
2. The Concept of the Radical Improvement (KAIRYO), which combines such approaches as benchmarking (an efficient tool for determining the position of the company in comparison to others), reengineering, targeted drastic innovation projects, and systemic innovation processes (Kraśnicka et al., 2016), and
3. The Concept of Total Quality Management (TQM), which is aimed at implementing innovative changes in the management system based on improving the efficiency of management processes (Tanninen et al., 2008).

Managerial innovations may also include the Balanced Scorecard system, the ABC analysis, the Six Sigma defect reduction system, the TPS (Toyota Production System), the 5S workplace management system (Sorting, Straightening, Systematic cleaning, Standardizing, and Sustaining), the efficient time management system TBM (Time Based Management), the efficient customer service system ECR (Efficient Consumer Response), the total quality management system TQM (Total Quality Management), and the LM system (Lean Management) (Rahimi et al., 2011).

The introduction of managerial innovation in SMEs involves the successive passage of the following stages.

1. Preparatory stage (a comprehensive analysis of the enterprise operation and identification of weaknesses and problems that need to be addressed).
2. Information stage (overcoming the personnel resistance). This stage includes personnel training for the introduction of nontraditional management methods, familiarization with the results of previous innovations, and trainings.
3. Generation of ideas. The employees should be constantly encouraged to formulate new ideas and have the necessary conditions and resources for conducting experiments to complete this stage efficiently.

Brainstorming is one of the common methods of the team creativity. Both foreign and domestic managers quite often use the 5 Whys method to get a nonstandard solution of the problem. This method allows defining the deeper cause of the problem, which is invisible at first glance. The practice of reframing is interesting, which allows viewing the problem from various perspectives.

4. The most optimal alternative idea can be chosen in different ways. Due to the lack of funds and time, not all new ideas and proposals can be implemented at the enterprise. That is why it is important to adjust the mechanism of their evaluation, selection, ranking, and implementation.
5. Analysis and evaluation of possibilities to implement innovations (analytical stage). At this stage, it is expedient not only to calculate the efficiency of the innovation implementation, but also to assess the compliance of the expected results with the strategic goals of the SME.
6. Embodiment of the idea (direct implementation of innovation at the enterprise).
7. Evaluation of the implementation results (measuring the beneficial effect from the implementation of the managerial innovation).
8. Monitoring and adjustment (Wang and Ahmed, 2004).

Consequently, managerial innovation with a scientifically justified use reveals new forms and methods of planning, organization of entrepreneurial activity, and regulation of labor and production. It also influences pricing, motivation and performance evaluation.

In terms of the future prospects for the introduction of innovations in the SMEs management, it must be noted that the present knowledge is the decisive driver for the development of entrepreneurship, innovation, research, and information technology, and the key source of growth for the global economy.

The efficient knowledge management technology will have a new dimension in the context of the knowledge revolution and its dominance in securing the competitiveness of SMEs. The knowledge economy shifts the management's attention towards intellectual assets that form the basis of the enterprise's capitalization and ensure the innovation-driven growth. The cross-functionality and versatility of the knowledge management technology are manifested in the formation of the organization's knowledge base, development and implementation of information products that allow collecting, codifying and preserving the internal organizational knowledge, and forming a culture of learning organizations, where the principle of information exchange reigns and the creation of new knowledge is encouraged. This is why building the knowledge management processes is part of such management technologies as customer relationship management (CRM), benchmarking, business process reengineering and improvement (BPR), competence management (Core Competency), supply chain management, etc. (Altaher, 2010).

The understanding of how to transform knowledge into unique, liquid products by the SMEs' management generates new competencies and is the key to the efficient creation of competitive advantages. It is vital for SMEs to develop internal communications, create networks for communication and information sharing for the successful application of innovative knowledge management technologies. In the context of the knowledge economy, the development of an organizational culture towards openness and trust, creation of conditions for active personnel communication, creation and development of the professional community networks, and creation of conditions for informal communication should be also important. This format demonstrates the most efficient generation of nonstandard innovative ideas for business development today. The SMEs obtain the greatest return from the use of knowledge management technologies by an integrated approach to the formation of the information infrastructure, professional development of personnel, and motivation of teamwork.

Information management technologies are inseparably linked with the knowledge management system. Availability of the information technology is becoming an immanent feature of the management process and management competencies for SMEs. The modern information technology changes the scale, structure, and sectoral horizons, contributes to the creation of new markets and the destruction of traditional entry barriers, and expands market access for SMEs.

The digital era opens up new opportunities for the integration of SMEs and implies the expansion of forms and mechanisms of interaction with customers, partners, suppliers, and other stakeholders. The new logic of the partnership cooperation transforms the SME business model based on the principles of the value chain optimization, which can significantly change its organizational and production limits. Such changes determine the organizational and structural reconfiguration of SMEs, which leads to an update in the management matrix of the enterprise. The role of the analytical competencies of SMEs is changing dramatically under the new conditions. Their ability to handle large arrays of unstructured asymmetric information that needs to be quickly processed using analytical structures and turned into data and knowledge secures a competitive advantage due to an advanced response to changes. Creation of the efficient information infrastructure integrated with cross-platform apps and cloud storage technologies and capable of quickly processing large arrays of heterogeneous information will be relevant for future SMEs, regardless of the sector. Information technology of the future will be organically integrated into business processes and become an integral part of the analytical work of managers. (Bebensee et al., 2010)

The growth of volumes, variability, speed, and diversity of information flows requiring the creation of a flexible management system that instantly adapts to new tasks have become the obvious realities of the present. The emergence and wide dissemination of innovations in information management today are aimed at optimizing operation with databases. Big Data Analytics management technologies (analysis of large databases) allow creating and analyzing large amounts of information, creating integrated real-time databases, and quickly identifying correlations and patterns for making managerial

decisions. The speed of the managerial decision-making due to the active implementation of Big Data Analytics helps ensure increased productivity of business functions, technological and economic security, and the creation of competitive advantages. Due to the increasing complexity of processing large amounts of information and significant investments in creating the independent information systems, there will be an increasing trend to outsource this specific information management function to SMEs (Claver-Cortés et al., 2007).

The dynamic ability to generate, implement and exploit innovations that are a source of strategic advantage and business capitalization should be the immanent sign of a future SME. This is why the creation of business models of companies able to ensure an efficient process of creating innovations and their rapid implementation should be a strategic priority for the development of any company. Business models that secure rapid introduction of new technologies, products, and services become drivers of success and sources of opportunities and capitalization growth. Therefore, modern innovations in the enterprise management matrix aimed at reconfiguring its business model should ensure the formation of a motivational organizational and economic platform for the regular rapid creation and implementation of innovations. Tools for optimizing the entrepreneurial model of enterprises, as well as their organizational configuration and business profile based on outsourcing will be enhanced in order to increase flexibility, quick response to changes in the environment, and efficient use of resources. Improvements in the company performance as a result of the introduction of outsourcing technologies are backed by economies of scale and the use of highly qualified specialists. This contributes to the efficiency of their use and the rationality of the personnel structure for internal operations (Santos-Vijande et al., 2007).

The extreme turbulence of the environment where the management of enterprises operates outdates the development of the company's strategic plans, which were formed for five to ten years. Different philosophy and management culture are needed for a quick response to challenges and changes in the conditions of the innovation environment. The need for a quick response to changes in the business environment and the appearance of sudden events led to the emergence of flexible management tools – in particular, Agile management (Horn and Brem, 2012; Akhmetshin et al., 2018). The use of Agile technology becomes a sign of the dynamic management, when the management defines the main goal and the motion vector, but the operational plans, tasks, milestones, and teams are specified during the progress towards the goal. The most flexibility is achieved due to the teamwork dominance over the rules of the described procedures, quick reaction to changes, and constant cooperation with customers. This is why a change in the management format, a transition to the so-called emergent strategies that focus on shaping future scenarios, choosing strategic directions, and ensuring a flexible response to environmental changes should be expected in the future management system.

4. Conclusion

As such, the SMEs' behavior is primarily secured by their management and innovative personnel management technologies, which are capable of turning it into the HC. Enterprises should look for new ways and forms of transforming their personnel into the HC amid demographic deformation and severe changes in the motivational nature. Such prospects for the development of management technologies require a certain willingness of management to transform the management system, understand and be aware of new objects and methods of targeted impact.

The key to the SMEs' success in the long term is their ability to change alongside with the changing market conditions, using management mechanisms. These mechanisms are managerial innovation in the form of a chain of interrelated and consciously initiated changes associated with the qualitative reform of the management unit and aimed at improving the stability, efficiency, and competitiveness of the enterprise.

The process of introducing managerial innovation involves a targeted change in the management system based on the identified patterns and factors of the innovation

development at all life cycle stages of the product, technology, and enterprise by reforming and improving the management system, organizational structure, and technological, production, and marketing processes. The relationship between various types of innovation sets the pace of the enterprise development. The innovative activity of an SME aimed at modernizing the technology and production technology of innovative products should be coordinated with changes in the tasks, functions, and control systems.

The establishment of the knowledge economy and formation of the digital era are becoming the driving forces for the development of such managerial innovation as knowledge management technology tools and information technologies changing the business models of enterprises and creating new competencies and competitive advantages.

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