



INNOVATIVE SYSTEM OF STRATEGIC MANAGEMENT OF KNOWLEDGE FLOWS IN CORPORATIONS

Marek Garbowski

Ph.D in Economics, Associate Professor,
University of Warmia and Mazury in Olsztyn, Poland

Vasily Kupriichuk

Doctor of Science in Public Administration, Professor,
National Academy for Public Administration under the President of Ukraine, Ukraine

Natalia Kyrylko

Senior Teacher,
Kyiv National University Technology and Design, Ukraine

Nataliia Tkachova

Doctor of Sciences in Public Administration, Professor,
National Aviation University, Ukraine

ABSTRACT

The article presents the scientific and methodological bases for the formation and introduction of an innovative system of strategic management of knowledge flows in corporative structures. There are defined methodological and practical circuits of the unified innovative system for the corporation. There are developed the model of knowledge flows functioning in the corporation and the main factors of strategic ensuring efficiency of the functioning. There are characterized the sources of knowledge acquisition at different stages of implementation of the strategic management model.

Key words: strategic management, corporation, knowledge flows management, corporative knowledge, unified innovative system, R&D, mechanism for promoting innovations

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1. INTRODUCTION

The opportunities for extensive growth of corporations and leading industries in the modern world economic system are almost exhausted, this leads to the fact that to ensure new market positions, corporations should create and maintain new types of competitive advantages. Important factor in gaining a competitive advantage in the market is “corporate knowledge” – the exclusivity and the ability to manage them to increase innovative potential. Research in this area is in the infancy at this stage of development of the world economy and world scientific thought. That is why the analysis of knowledge flow in R&D, definition of key criteria to effectively manage the “flow of knowledge” and the application for increasing the innovative potential of the corporation is a pressing issue in the study of innovative processes, and solve these problems in the economic activity of a particular company can provide the strategic advantages in the market.

2. NEED FOR THE STUDY

The methodology of knowledge flows management is reduced to the model of corporate informational support. Knowledge flows management involves working with a variety of information resources, including scientific and technical information and processing operations, so the relationship with informational support and intellectualization is direct. Knowledge flows management in the methodological context is understood as: 1) complex function in relation to all types of works, which aims to ensure that they are carried out rationally; 2) implementation of a set of measures in the internal and external environment related to the acquisition, continuance, dissemination and use of knowledge; 3) management section with relevant subject, covering the effective use of human capital and information and communication technologies. It should be noted that in modern companies that are more innovative and focused on working with knowledge, there are special routines, environment with intensive communication and knowledge transfer, new understanding of human, social and information capital. Knowledge flows management is included in the achievement of the main objectives of the corporation and falls into the area of strategic management.

3. OBJECTIVES OF THE STUDY

Modern scientific research does not pay enough attention to the management of “knowledge”, organization and systematization of the flows in corporations. The most famous scientists who have conducted research on the knowledge flows management issues in corporations include (Davenport and Prusak, 2000; Jain, Mnjama, (2016; King, 2008). Previously, there were attempts to form a unified model of the corporation, which would cover the scheme of “knowledge flow”. So scientists (Oliver and Kandadi, 2006; Wei et. al. 2002) have conducted research among foreign corporations and proposed the model of knowledge flow. However, I believe that it is not complete and does not fully disclose the entire mechanism of the passage of “knowledge” in stages. We believe it is necessary to propose a more effective model for strategic knowledge management in corporations.

4. METHODOLOGY

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5. RESULTS AND DISCUSSION

5.1. The Importance of a Unified Innovative System for the Corporation

The main purpose of the article is to consider the issue of creating a single innovative system (single innovative system – SIS), which will provide effective management of the “flow of management” in corporations, and at the same time will be able to increase the innovative potential of the corporation. The progressive role of science, innovations and technologies in the economy of developed countries in the XXI century becomes leading, as extensive growth factors among which are: the increase in the number of people employed in production, the scales of extraction and development of non-renewable resources and energy carries, the possibility of increment of new areas of fertile lands, fresh water reserves, etc on a global scale are approaching the maximum level of use (Hunitie, 2017). The importance of knowledge management in corporations is becoming increasingly relevant at the same time (Drobyazko et. al., 2019a; Drobyazko et. al., 2019b). Each corporation chooses the best way to manage various aspects of knowledge in order to obtain predictable market position and obtain the corresponding competitive advantages. Such advantages, as it is known, follow from special opportunities of knowledge as a competitive resource – the exclusivity, importance and impossibility of replacing. The importance of R&D, as an attribute of innovation is an instrument in global competition, and therefore the basis of such importance is the knowledge and management. This aspect of corporative strategic innovative management led to the creation of a special subcommittee on knowledge management within IRI (Industrial Research Institute) research committee.

The purpose of the study is: a) identification of the knowledge flow model in the R&D process; b) identifying aspects of knowledge management that are unique and important to R&D and creation innovation potential; c) creation of the imperatives in this area. It was considered the activity of leading corporations in knowledge management in the process of research. The study involved data from companies with: a) identification of last activity (industry characteristics, business sizes, specificity of knowledge management programs, resource allocation); b) driving forces behind knowledge management; c) the implementation of knowledge management (planning, events, barriers and general effectiveness); d) methodologies (knowledge management indicators); e) organizational cultures; f) other aspects (open problems, use of consultants and so on) (Broadbent, 1997).

It was previously noted that knowledge management research in R&D is in the infancy. According to experts opinion, who have conducted research in this area, it is necessary to talk about the flow of knowledge, which contains selected data, accumulated information, conditions for the creation, capture, use, recovery and reuse of knowledge in R&D. Although knowledge cannot be controlled, the flow can be stimulated and directed. Knowledge flow models are great objects for exploring the role of knowledge management in R&D. It is possible to present a model of the knowledge flow and factors influencing the efficiency in the form of a diagram (Fig.1). This model is mainly used in foreign corporative governance practice. The model shows how knowledge is formed in corporations and how they are transformed into the net result.

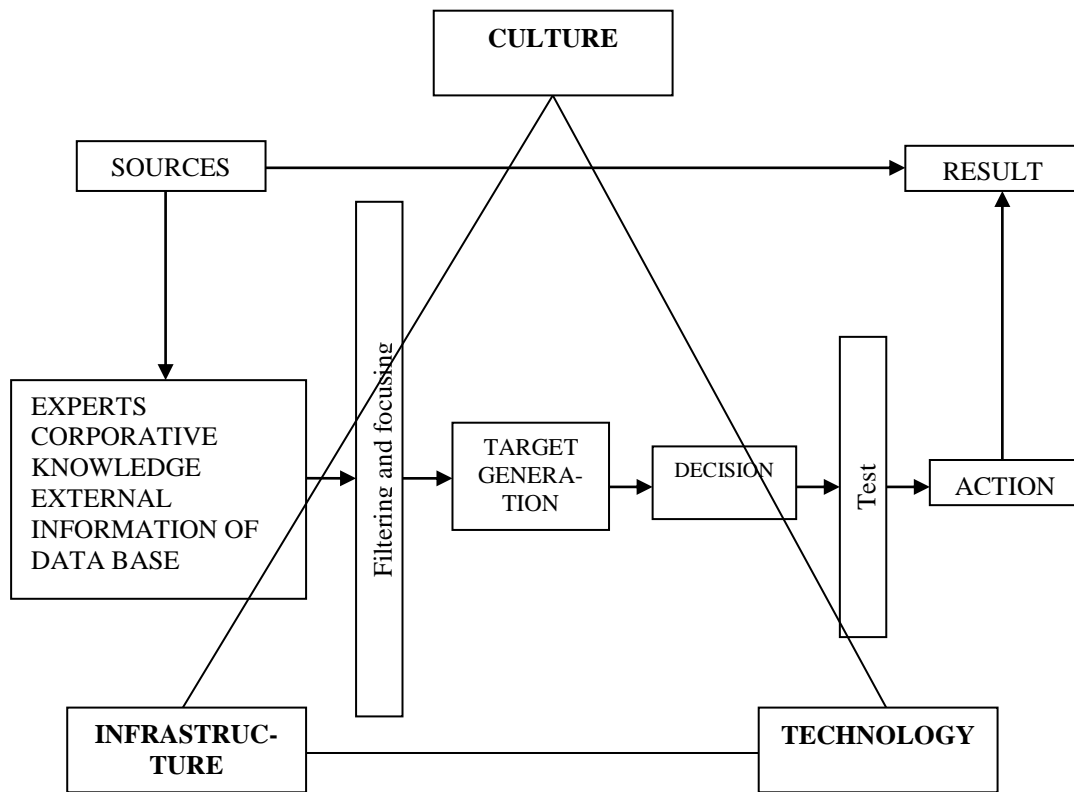


Figure 1 The model of knowledge flows functioning in the corporation and the main factors of strategic ensuring efficiency of the functioning

The choice of knowledge management style varies in corporations that focus on knowledge creation, continuous learning and that focus on the best use of existing knowledge (Mciver & Lepisto, 2017). Six imperatives can be identified and formulated from the model in Figure 1:

- widespread implementation of the corporation’s targeting and strategies;
- increasing access to the accumulated, existing knowledge of the corporation;
- providing ease of use of the instrument “search and recovery” of internal and external information;
- promotion of ingenuity;
- implementation of new learning;
- providing a culture of support.

Sources of acquiring of knowledge within the corporation are presented in Table 1.

Table 1 Sources of knowledge acquiring at different stages of operation of the control system in the implementation of the strategic management model

Generalized stages of operation of the control system in strategic management	Types of involved knowledge	Stages of the knowledge life cycle			Examples of alternative sources of knowledge work
		production	distribution	usage	
The process of internal orientation in a situation	Idealistic	generation			database systems mining

Assessment of factors leading to the situation	Systematic, practical		broadcast	assimilation	cognitive modeling of knowledge representation system
Assessment of readiness\ unwillingness to the intervention of the system	Practical			evaluation	systems of knowledge representation, evolutionary modeling, agent-based modeling
Decision-making	Systematic, practical, automatic			search	process modeling (event-driven, graph technologies), soft computing (methods of fuzzy sets theories, neural networks, genetic algorithms and other uncertainty modeling methods and processing techniques), tough measurements
Implementation of management influence by performing a sequence of management operations	Practical, automatic			application	productive expert systems, agent-based modeling, cognitive modeling
Analysis of the implementation of management decision	Systematic, practical		broadcast	evaluation, elimination	method of relative importance valuation of the criteria (according to V.V Podinovsky), tough measurements, networked object-oriented knowledge bases of management systems

The peculiarity of knowledge flow and knowledge creation in R&D is the incompleteness, keeping an open field for growth. However, these processes support human interaction, they cannot relate exclusively to information technologies. Changes take place in the underlying business processes and culture, and that is much more difficult in the implementation of the corporation. Consequently, there are emerging patent applications of knowledge management processes. They create further processes in this area and serve as the basis.

5.2. Strategic Management of Knowledge Flows in the Corporation

It is necessary to realize the benefits of increasing the information field and rapid technology developments and to adapt to product life cycles are shrinking, corporative culture, structure and information technologies should change dramatically to maintain the necessary growth in knowledge. However, those factors are so intertwined that changes in one can give the same result in another. Infrastructure changes relatively quickly, but essential accordance with practice requires a slow evolution of culture. Culture that promotes the open dissemination of knowledge can be implemented if leaders clearly define the importance of knowledge management and it will be supported at all levels of staff. Knowledge management requires minimizing hierarchy and creating the necessary resources. Information technologies can easily adapt and disseminate information and knowledge (Ternai et. al., 2017). The

technology should be chosen in such a way as to meet the goals of corporative culture and rapid implementation, rather than a long wait for the “best” technology.

Corporations have just begun to manage knowledge in the organizations and are able to combine in practice the unique culture, infrastructure and information technologies. Studies have also focused on how knowledge flows through all stages of R&D. However, we believe that in addition to controlling the flow of knowledge in R&D, it is necessary to simultaneously form the innovative potential of the corporation. Innovation potential refers to the ability of an enterprise to create new value by leveraging all of the existing tangible and intangible assets in order to the innovative development (Metelenko et. al., 2019; Klymenko et. al., 2019). It is proposed to create a Unified innovative system (Fig. 2) to collect the necessary information on the formation of knowledge, effective management of the flows in the corporation, transformation into innovative potential and further development (improvement).

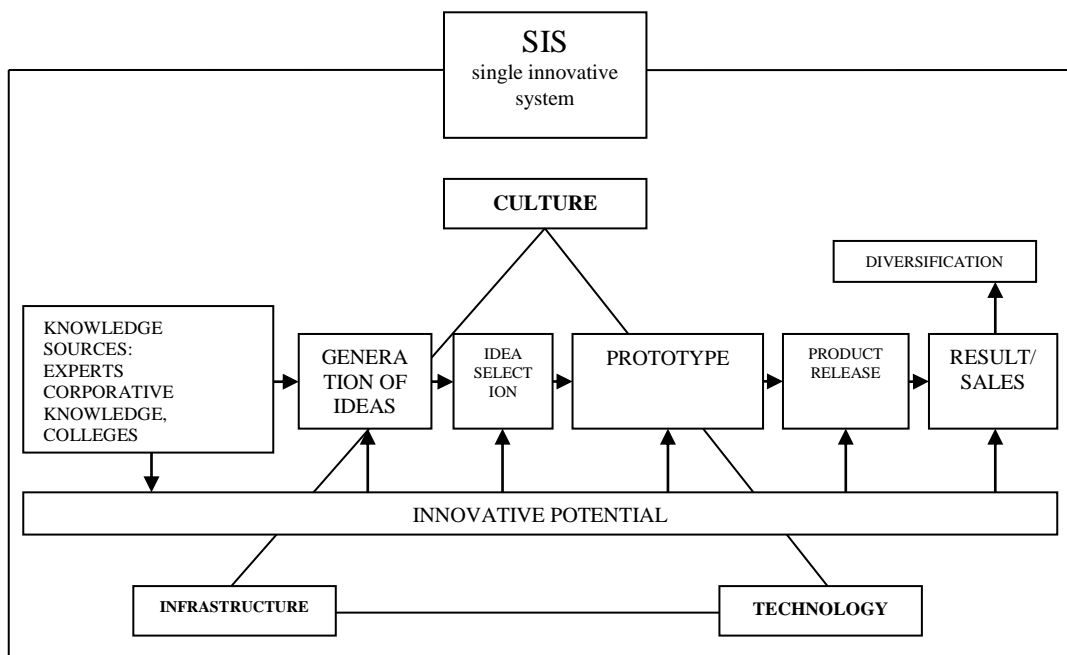


Figure 2 Knowledge flow model under the control of “Single innovative system”

The main tasks of SIS should be: definition and establishment of the basic norms of innovations in the corporation; preservation and distribution of all information related to innovations; search for the main sources of knowledge; selection of the main idea proposed by the specialists of the corporation; formation of the innovative potential of the corporation; control of the process of knowledge flow at all stages; stimulation of personnel involved in the process of knowledge flow (Fink, 2011). The proposed model of knowledge flow management will be able not only to control the flow of knowledge in the corporation, but also to form the innovative potential of the corporation (Fig. 2).

It is known that the necessary conditions for accelerated and sustainable innovation and technological evolution in developed countries are determined by the presence and active use of a set of factors that ensure both the formation and effective implementation of ideas for the creation of new inventions, acceleration of R&D, as the main component of innovation and the entire innovative potential of the corporation. The combination of factors will ensure economic growth and improve the quality of life. Among the factors of forming the potential of innovative development of corporations, we propose to include:

- scientific research and development potential, including basic research (R&D);

- grounded and periodically corrected priorities of scientific and technological development and lists of new technologies developed on the basis;
- regularly filled potential of higher and secondary education and forecast estimates of the development of large markets of new technologies;
- flexible adaptive economic mechanisms to promote innovations, development and adoption of new technologies;
- incentives that promote economic growth through innovations and new technologies.

The successes of accelerated scientific and innovative development can be based on the optimal balance between competition and cooperation in the field of science and technologies with active state support. The most successful management innovation can be a variety of incentives for the development of research and technology partnership, aimed at increasing the use of new technologies, primarily on the basis of commercialization of the results of budgetary research and developments. R&D developments can have benefit from earlier research in this area in the practice and promotion of works in the relevant corporations and finding gaps or if you want to improve the practice, as mentioned earlier, it will provide SIS.

Knowledge flow management in R&D and in the formation of innovative potential has certain features. SIS can use a wide range of information technologies to store and reproduce information, support collaborative activity, search for web-based resources of innovative information- for all stages of the knowledge flow. This is important because knowledge management programs determine the choice of information technologies, not the other way around. Thinking contains the most essential knowledge and knowledge management forces us to overestimate these reserves. Improving the ability to review, interact with knowledge from refined knowledge bases generates new knowledge, positively reflected in the key processes of R&D and in the formation of innovative potential.

It is recommended that state employment policy should be closely linked to the processes of organizational structuring of entrepreneurship, the tasks of innovation and industrial development of industries, and be based on the idea of redistributing workers from low-performing industries to more productive ones. For the purpose, it is necessary to change the proportions between small, medium and large enterprises and to stimulate productive employment in enterprises that operate in the form of joint stock companies, holdings, vertical and horizontal corporations, clusters, etc.

The policy of creating productive jobs that are capable of influencing innovation and delivering sustainable development is actively pursued in the EU where the conceptual approaches to implementing employment policies were changed, which are based on the shift from a policy of stimulating demand to a policy of stimulating labor supply by employers and the state.

6. CONCLUSION

Given the importance of knowledge as a resource that allows to get a competitive advantage, there is a problem of knowledge management because only managed knowledge can provide a positive result to increase the intellectual and information capital, and, ultimately, the financial result of activity. It is necessary to introduce new knowledge management in innovation activity to improve the chances of obtaining significant benefit of all activity of the corporation. It is necessary to make each strategy visible, necessary for the corporation developing business, and to implement corresponding changes of culture. Incorporating majority of the corporation's members into design, connecting with other business, if it is possible, and planning for further expansion, including management, modeling and culture- are all necessary if the corporation is to succeed

It was developed and presented a single innovation system in the process of writing the article. The purpose of creation of which was to collect necessary information for the formation of knowledge, effective management of the flows and transformation into the innovative potential of the corporation. The main tasks of SIS are: definition and establishment of the basic norms of innovations in the corporation; search for the main sources of knowledge; formation of innovative potential of the corporation; control of the process of knowledge flow at all stages. The innovative potential of the corporation should include all knowledge related to the development and introduction of new products to the market. It is also necessary to use at each stage through which the flow of knowledge passes to the final result.

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