

CYCLICITY OF INNOVATIVE DEVELOPMENT AS THE BASIS OF COMPETITIVENESS

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Abstract. *The article examines the essence of innovation processes and their impact on the formation of the competitiveness of enterprises and the national economy in the context of global transformations. It is substantiated that the cyclical nature of innovations is a key condition for ensuring sustainable competitive advantages and long-term development. It is proven that the formation of an effective innovation environment and cooperative interaction of entities contributes to achieving a synergistic effect and increasing the effectiveness of innovation activity.*

Keywords: *innovation processes; competitiveness; innovation environment; cyclical development; cooperation; innovation management; synergistic effect.*

In the current context of global economic transformation, innovation processes are becoming a key factor in ensuring the long-term competitiveness of enterprises, industries and national economies. The acceleration of scientific and technological progress, the digitalisation of business models, the spread of platform solutions and the development of the knowledge economy are shaping new rules of competition, in which the ability to generate, implement and commercialise innovations is becoming a determining factor for market success. This issue is particularly relevant in the context of intensifying global competition, structural shifts in the world economy and the growing role of intellectual capital. For enterprises, innovation is becoming not only a tool for adapting to change, but also a means of proactively shaping market trends. In this context, studying the impact of innovation processes on competitiveness allows us to identify strategic development priorities, outline effective management mechanisms, and justify directions for improving the effectiveness of economic activity.

Innovative processes encompass a set of interrelated stages - from the emergence of an idea and research and development to the introduction of new products, technologies, management approaches and business models [1]. Their systematic and continuous nature ensures the formation of unique competitive advantages, increased resource productivity, cost optimisation and expanded market opportunities [2]. At the same time, innovative activity is associated with a high level of uncertainty, the need for investment resources and an appropriate institutional environment, which necessitates a deep scientific understanding of the mechanisms of innovation management. It is fundamentally important that innovation processes become cyclical, as it is the repeatability and consistent updating of innovative solutions that ensure the sustainability of competitive positions in the long term. A one-off introduction of innovation creates a temporary advantage that is quickly levelled out in a dynamic market. On the other hand, the formation of a continuous innovation cycle - from the generation of ideas to their commercialisation, evaluation of results and initiation of new changes - contributes to the constant renewal of the product portfolio, technological base and management practices. Such cyclicity is necessary not only at the level of an individual enterprise, but also at the level of the national economy, since it is the systematic reproduction of innovations that ensures productivity growth, structural modernisation and strengthening of the country's competitiveness in the global environment.

The development of an innovative environment involves improving the conditions for innovative processes, which allows companies in an innovative environment to achieve better results than their competitors. Accordingly, the key object of development is the conditions for innovative activity, which lead to the formation of a higher-level innovative environment. Innovative companies make decisions about cooperation depending on their chosen innovation strategies.

Under the influence of the conditions of the innovation environment, the innovative activity of entities develops more actively, but taking into account the level of resources and constraints that exist in the current time period [3]. Relationships between participants in innovation processes begin to develop and then deepen, and cooperative ties emerge. However, in the process of building cooperative relations with other participants, a transformation takes place in the organisation of companies' innovative activities in terms of opportunities for technological development, material and technical base, exchange of knowledge and experience, i.e. there

is an expansion of the possibilities for using resources among all participants in the cooperation process.

Thus, the result is a synergistic effect from cooperation, expressed in economic benefits. The functioning of the innovation environment stimulates the innovation activities of its participants, which is reflected in the country's innovation performance indicators. The cyclical nature of the model is achieved by achieving the set result and moving on to setting new goals, which are formed in the region's innovation development strategy, and achieving the result. Thus, the functioning of the innovation environment is presented as a cyclical development process in which goals are set, planned measures are implemented, and a new, higher level of development is achieved.

The development of an innovative environment is a process of analysis, planning, organisation, motivation, coordination and control, carried out with the aim of creating the necessary conditions for the implementation of innovative activity. The development of the innovation environment is characterized by cyclicity, since the creation and commercialization of innovations form the basis for the next stage of technological development. Each new innovation gives an organization or country a competitive advantage and stimulates economic and technological progress, but over time its impact decreases due to the spread of technology among other market players or the emergence of improved analogues. This leads to the fact that in order to maintain and improve the technological level, it is necessary to start a new cycle of research and development, creating new products, processes or methods. Thus, the development of innovations is not linear, but goes through a sequence of cycles, where the completion of one stage prepares the ground for the next.

The cyclicity of the innovation process is also due to the nature of the market and the speed of technological obsolescence. In modern conditions, technologies quickly become obsolete, and companies or scientific institutions that do not initiate new cycles of innovation risk losing their positions. The commercialization of one innovative product creates resources - financial, intellectual and human - for subsequent developments, which stimulates the continuous movement of technological development. Each new cycle allows the organization to adapt to changes in the external environment, implement more effective solutions and maintain technological competitiveness.

Theoretically, the cyclical nature of innovation is confirmed by models of the innovation life cycle and the concepts of technological trajectories. They show that after implementation and commercialization, the product enters the maturity phase, when its ability to provide strategic advantage decreases. It is to overcome this limitation that organizations must initiate a new cycle of research and development, which allows to restore or increase the technological level. As a result, cyclicity becomes not only a regularity of innovation development, but also a strategic necessity for maintaining long-term competitiveness and dynamic development of the technological environment. The cycle of the innovative environment's development is the sequential implementation of the stages of a complete process: analysis, planning, organisation, motivation, coordination and control until the relevant goals are achieved (Fig. 1).

The cycle of innovation environment development in a region may be repeated until the goals set in the regional innovation strategy are achieved. If the result has already been achieved, the cycle can be repeated after a certain period of time, for example, every 3 or 5 years (when updating innovation cycles in the sectors that form the core of the region's industry). The proposed tool can be applied by relevant ministries and agencies, executive authorities, and scientific organizations at the regional level. Each cycle should focus on the factors that most significantly determine the development of the innovation environment. Obviously, the direction of management interventions will differ in different regions or at different stages of the cycle. The first stage involves a theoretical and practical analysis of the development of the innovation environment, in particular, a study of strategic planning documents at the state and regional levels, the definition of strategic guidelines taking into account the specifics of the region, an assessment of the prospects for the development of innovative technologies and an analysis of instruments for stimulating innovation activity. The next stage is development planning, which involves the formation of long-term and short-term goals, the development of appropriate strategies for their achievement and the identification of the necessary resources and mechanisms for their distribution.

Subsequent stages include the organization of the implementation of the strategy through the development of phased action plans, the implementation of development programs and measures, as well as the control and evaluation of the results obtained by comparing actual indicators with planned ones. The final element is the transition to a new cycle, which again includes analysis, planning, organization, implementation of development instruments and control of results, which ensures the continuity and consistency of the development of the innovation environment of the region.

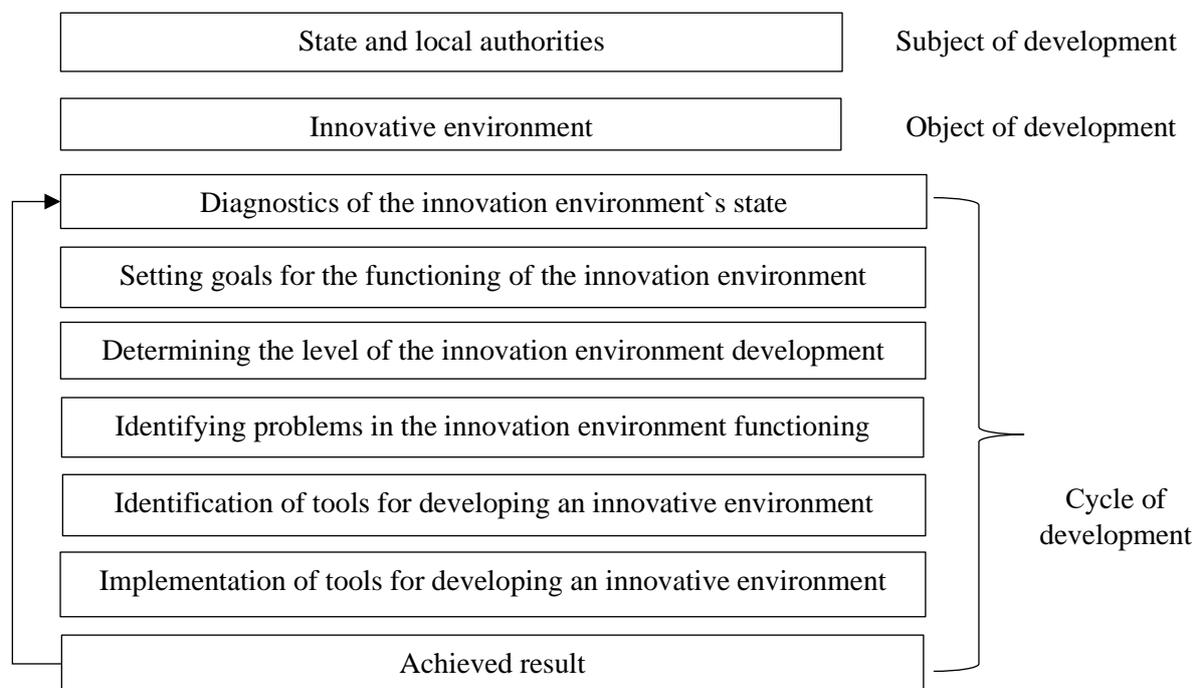


Fig. 1: The cycle of the innovation environment's development

Thus, innovation processes are a system-forming factor in ensuring the competitiveness of enterprises and national economies in the context of dynamic transformations in the global environment. Their impact is manifested through the formation of unique competitive advantages, increased efficiency of resource use, development of the technological base and creation of new market opportunities. It has been proven that the key characteristic of effective innovation processes is their cyclical nature. It is the continuous reproduction of the innovation cycle - from setting goals and generating ideas to commercialisation and evaluation of results - that ensures the sustainability of competitive positions in the long term. One-off innovative solutions only create temporary advantages, while the systematic organisation of innovative activity creates the basis for strategic development. It has been proven that the development of an innovative environment is based on the management functions of analysis, planning, organisation, motivation, coordination and control, which are implemented as successive stages of a single cycle. The intensification of cooperative ties between innovation actors contributes to expanding access to resources, knowledge and technologies, creating synergies and increasing the economic returns from innovation. Thus, ensuring the competitiveness of enterprises and the country as a whole requires the formation of a higher-level innovation environment focused on continuity, strategic coordination and cooperative interaction. Prospects for further research should be linked to the development of methodological approaches to assessing the effectiveness of the cyclical development of innovation processes and the identification of tools for their strategic management.

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