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## APPROACHES TO INNOVATION PROCESS MANAGEMENT AT MACRO- AND MICROECONOMIC LEVELS

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### Abstract

*Though the words 'innovation', 'business', 'management decisions' and phrases formed from these terms have been used for many years already, this does not mean that Russia is following the innovation-oriented development line. The main reason for this is that the current approaches to the innovation process management at the macro- and microeconomic levels have not been properly developed by experts in the theoretical aspect. The innovation process as a background for sustainable development of the social and economic system should be fundamentally manageable. There is a necessity to encourage development of innovative activities, to transform the activity into the innovativeness at the national level (into the ability of the society and the economy to produce and consume innovations without the active participation of the state), as well as the ability to transform innovative ideas into commercially successful products or processes. The article conveys the author's view to some methodic principles and approaches to the innovation process management at macro- and microeconomic levels.*

**Keywords:** innovations, innovation process, development sustainability, social and economic systems, management, research intensity, research efficiency, world experience in innovative transformations.

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The innovative component of operation and development of social and economic systems is a major condition for their transformation and transition to a new type of social and economic relations, currently identified as a knowledge (cognitive) economy and information society.

Innovative transformation of the present-day environment cannot occur by itself because innovation is both a knowable and management category.

The modern economic science faces the necessity to form new coherent methodological principles and approaches to the innovation process management at the macro- and microeconomic levels. The developed countries of Europe, North America and the Asia-Pacific region, featuring the knowledge economy and public relations of the information society, as well as countries with transformation economies like the Russian Federation seek new opportunities for further sustainable development through synergies and integration effects derived from innovations.

Thus, the innovative process at the level of the national social and economic system, as well as at the global level (the World-System level) must be principally manageable in terms of the best satisfaction of the current social needs and the needs of future generations. The innovation process as a

management category should be based on the key principle of sustainable development according to which satisfaction of the current public needs does not harm the development of future generations and their ability to meet their own needs that they will surely have and that may be radically different from the present social needs.

We believe that the innovation process is a systematically implemented process that aims at transforming innovative ideas into a product (a product is understood as the desired result or the result intended to be received at the end of the process) through the stages of production, development, testing and implementation of innovations in a certain field or line of a social and economic system.

A new social and economic system that is formed first of all due to the innovation processes and that the mankind aims to achieve will feature the relative abundance of non-material resources (in particular, the relative abundance of information, intellectual assets, etc.) and the lack (in some cases by significant limitation) of physical natural resources. There is every reason to believe that some traits of specific features of a new economy (knowledge economy) can already be traced now. The relative limitation of natural and physical resources alongside the

relative abundance of knowledge, information and intellectual assets should be transformed into a certain society's ability to use the knowledge assets and information for creation purposes. So, we can distinguish two methodological principles managing the innovation process:

- 1) the principle of developing the national innovativeness;
- 2) the principle of transforming knowledge into a commercially or socially successful product.

The principle of developing the national innovativeness was once formulated in the US innovation development strategy.

This principle is based on the assumption that all incentives (economic, non-economic, fiscal, legal, etc.) that the state can use when executing its powers to develop innovative activities may be ineffective or have short-term effect, if social and economic relations lack developed effective demand for innovations and innovative solutions.

The second of the above-mentioned principles, the principle of transforming knowledge into a commercially or socially successful product, is a logical extension of the principle of developing innovativeness. It should be borne in mind that the existence or development of a new innovative idea aimed at solving any problems in the society does not necessary mean complete commercial or public success. New knowledge developed must be successfully transformed into a product that will be offered to the market or the society and that will be in sufficient demand. Thus, not only aspects of the development of innovative solutions but also their successful implementation in the society or economy should be encouraged.

However, the analysis of the experience of innovative transformation of social and economic systems shows that not all national governments are aware of the fact that to develop social and economic relations of a new type it is more important to transform knowledge into a successful product (promotional and operational aspects of the innovation process) than just to possess the knowledge. For instance, despite a rather sufficient innovative potential in Canada, researchers mention the gap between the country and other developed countries with postindustrial economies precisely because the state support of innovative activities encourages not creation of the needs, but constant production of new knowledge that often is not converted into a final product required the society<sup>1</sup>.

Returning to the accumulated experience in innovative transformations of the national social and economic systems and features of innovative process management at the national level, it should be mentioned that there are two basic approaches to encourage the intensity and dynamics of these processes that can be formulated as follows:

- 1) encouragement of innovation activities in commercial and non-commercial (including research) fields by the direct involvement of the state in the intensification of innovative processes through preferences (tax and non-tax ones), subsidies, budget financing, etc.;
- 2) encouragement of social and economic innovativeness through the combination of indirect methods of the state support (development of the innovative infrastructure, support of the demand for the R&D results, complete protection of intellectual property, etc.).

The first approach is implemented in some EU countries (e.g. France, Italy), as well as in Canada, Japan and China, while the second approach is implemented in the US. Based on the data available, we can conclude that transformation of a national social and economic system based on the processes of innovativeness intensification develops sustainable or strategic motivation in the economy and society to produce, implement and consume innovations. In contrast, transformation of a national social economic system based on processes of innovation activity intensification develops an unstable or tactical motivation for innovations. This can cause a sharp decrease in innovative activities if the character of the stimuli used is reduced or changed. The concept of the relationship between methodological principles and approaches to innovation process management can be represented as follows (see Figure 1).

Thus, we consider the sustainability of social and economic systems to be a fundamental principle that in its turn is formed by the principles of developing national innovativeness and transforming knowledge into a successful (commercial or social) product. Sustainability of social and economic systems is based on the integration of the two approaches: the research intensity-to-research efficiency balance under stimuli used to develop strategic motivation of economic agents and society to innovations.

The research intensity-to-research efficiency balance is achieved through regular transformation of fundamental and practical knowledge (researches and developments) into objects or processes that are

<sup>1</sup> See, for instance: Canada's Economy 2010 – 2011 and the State Policy // Publications of the Institute of World Economics and International Relationships [Electronic Resource] Mode of access <http://www.i-g-t.org/2011/06/17/> free access

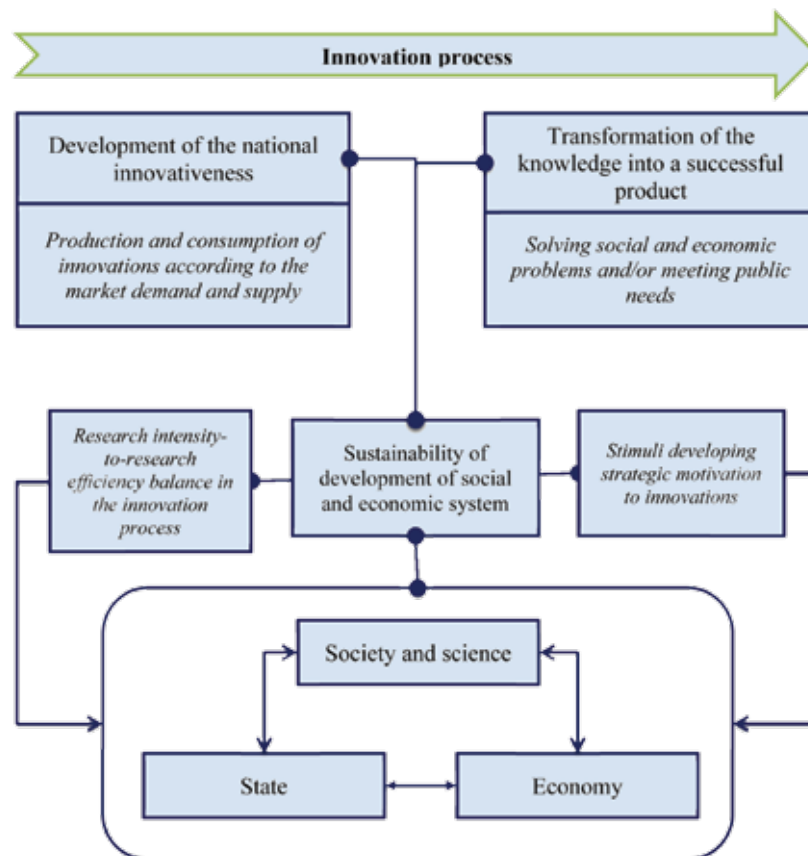


Figure 1. The concept of the relationship between methodological principles and approaches to innovation process management<sup>1</sup>

goals of national development strategies. Indicators of research intensity and research efficiency can be calculated differently. For example, the international practice uses the following indicators (see Table 1) to determine research intensity and research efficiency.

Table 1

Indicators of research intensity and research efficiency in development of social and economic systems<sup>2</sup>

Indicator	Indicator elements
Research intensity	The share of R&D expenditures in GDP (GRP). For business entities: the share of R&D expenditures in the costs and revenues
	The number of employees engaged in R&D activities per 1 thousand employed in the economy. For business entities: the share of engineers and scientific and technical personnel in a total staff number
Research efficiency	The share of high-tech products and information technologies in GDP (GRP) and / or merchandise export. For business entities: the share of high-tech products in total production output

<sup>1</sup> Developed by the author.

<sup>2</sup> Developed by the author using: Lenchuk E.B. Innovative process in transitive economy (on example of the countries of Central and Eastern Europe and the CIS): abstract of a thesis Ph.D. in Economy. Moscow, 2007; OECD, Main Science and Technology Indicators.

Summing up, it is worth noting that the innovation process management at any level should be based on the triad of principles, with that ensuring the sustainability of a social and economic system being the main one. The implementation of these principles is possible within the framework of complementarity of the two approaches: ensuring the research intensity-to-research efficiency balance provided that the stimuli to innovations generate strategic motivation to innovations in the society, scientific sphere, public administration and economy.

Thus, the development of a new theoretical and methodological basis for the innovation process management on the one hand is based on the basic social and economic patterns of operation and development of the systems, but on the other hand it takes into account the experience gained previously. Integrating the experience and laws at the initial stage of the innovation process provides a synergy of positive effects at the final stage of the process.

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**ИННОВАЦИИ**

## СОВРЕМЕННЫЕ ПОДХОДЫ К УПРАВЛЕНИЮ ИННОВАЦИОННЫМ ПРОЦЕССОМ НА МАКРО- И МИКРОЭКОНОМИЧЕСКОМ УРОВНЕ

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### Аннотация

Многолетние употребления слов «инновация», «предпринимательство», «управленческие решения» и словосочетаний, образованных от данных терминов, так и не привели к тому, что наша страна идёт по инновационно-ориентированному пути развития. Основная причина кроется в том, что современные подходы к управлению инновационным процессом на макро- и микроэкономическом уровне не проработаны в должной мере специалистами теоретически.

Инновационный процесс, как условие, обеспечивающее устойчивость развития социально-экономической системы, должен быть принципиально управляем. Необходимы стимулы для развертывания инновационной активности, преобразования этой активности в инновационную способность национального уровня (в способность общества и экономики без активного государственного вмешательства производить и потреблять инновации), умения трансформировать инновационные идеи в коммерчески успешный продукт или процесс. В статье изложен авторский подход на некоторые методические принципы и подходы управления инновационным процессом на макро- и микроэкономическом уровне.

**Ключевые слова:** инновации, инновационный процесс, устойчивость развития, социально-экономические системы, управление, наукоёмкость, наукоотдача, мировой опыт инновационной трансформации.

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