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Basic Market Factors Affecting Innovative Activities

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Abstract

This article contains the results of the authors' complete research on basic market factors affecting innovative activities. Innovations are perceived to ensure competitiveness of goods produced by enterprises and of sustainable success of companies or corporations in the market on the whole. All market factors affecting innovative activities are ranked by the authors to internal and external. The authors emphasized the importance of innovation factors for the development of small and medium-sized enterprises. Of particular importance as an external factor in the development of innovative activities in this case are educational technology and

consulting services. This will allow more extensive use of the very limited research and development, limited human resources of small and medium-sized enterprises. The article says that the state offers options for innovative projects specifically to support small and medium-sized businesses. The basis of this support are state program of development of small and medium-sized businesses. Authors consider main features of the Russian modern paradigm of innovative activities.

Keywords: **Innovations; Innovative Activities; Innovation Process; Innovation Management; Market Factors**

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INTRODUCTION

Relevance of the study is directly related to the fact that innovation management is a relatively new concept for Russian scientific and the business community.

Currently Russia is experiencing a real boom of innovative activities. Old methods and styles of economic management are getting replaced with new ones. Basically, all companies and organizations – starting from economic entities managed by the state and ending with newly established limited liability companies falling under the category of small enterprises are literally forced to engage in innovative activities.

In market conditions, when profit organizations have full legal and economic independence, nobody can pressure anybody into doing something [1]. This fundamental distinction explains the difference in the definitions of some concepts used in the field of innovation management.

It is believed that the concept of “introduction of a novation” is the Russian version of the English word “innovation.” The literal translation from English is “introduction of a novation,” or in our understanding of the word – “introduction of novelties.” Under novelties we understand a new order, new custom, new method, an invention or a new phenomenon. Russian phrase “introduction of a novation,” or literally “introduction of something new,” implies a process of utilization of an innovation.

In a broad sense, the term “innovation” implies a profitable use of novelties, which come in form of new technologies, products and services; organizational, technical and socio-economic solutions of the industrial, financial, commercial, and administrative or other nature [2].

The time laps between the emergence of an idea, creation and dissemination of a novelty and its application is called the lifecycle of an innovation. Lifecycle of an innovation, with consideration of the sequence of work, is perceived the innovation process.

METHODOLOGY

General Theoretical Aspects of the Characteristics of Innovative Activities

Concept of innovation and types of innovations: An innovation is characterized by a more advance technology, new consumer qualities of a product or a service to compare to the older product. It should be noted that the concept of "innovation" is applied to all novelties, both in production and in the organizational, financial, research and development, educational and other areas of company operations as well as to any upgrades facilitating cost savings or simply creating conditions for such savings to be realized.

In their most general form, investments imply long-term investment of funds in various sectors of economy with the objective of gaining profit. Different versions of classification of investments can be found in professional literature. In terms of their economic essence and objectives, investments are identified as real and financial. When companies and other business entities acquire land, tools, intangible and other assets, they do real investments. Financial investments imply the purchase of securities of various issuers by business entities and individuals. In the latter case, the inflow of capital is achieved through the investment in securities [3].

In general context, innovations imply a renewal of long-term assets (fixed capital) or manufactured products due to the introduction of new scientific, engineering or technological developments; this is a typical, intrinsic process of improvement of public production. The following types of innovations exist:

1. By the degree of progressiveness (novelty):

- Basic innovations based on major inventions, which constitute a foundation for the formation of new generations and trends of technological development;
- Improving innovations – based, usually, on the inventions of small or medium significance, which usually constitute a base for a stable development of scientific and technological cycle;
- Pseudo inventions – with the objective to partially improve outdated equipment and technologies.

2. By the nature of their application:

- Product innovations – focusing on the production and application of new products;
- Technological innovations – aimed at the creation and application of new technologies:
- Social innovations – focusing on the construction and operation of new structures;
- Comprehensive innovations – representing groups of several types of new

developments;
- Market innovations – with the objective to satisfy the need for products or services in new markets.

3. **By the motivation for materialization (source):** innovations resulting from the development of science and technologies; innovations driven by the needs of manufactures; innovations driven by the needs of the market.
4. **By the role in the process of reproduction**: consumer innovations; investment innovations.
5. **By the scale:** complex (synthetic) innovations; simple innovations.

The given classification of innovations allows drawing a conclusion that processes of innovations are diverse and various in characters. Therefore, the forms of organization scale and the ways in which innovations affect innovative activities are also diverse.

Market competition is the most important mechanism that triggers the emergence of innovations. When using obsolete equipment and technologies, producers and consumers entail differential losses, which motivates them to reduce production costs through the application of innovations. Those entrepreneurial companies that pioneer certain effective innovations, are able to reduce the production costs and, therefore, the cost of goods (products or services) offered for sale. That puts such companies in a more advantageous position in the competition with companies offering similar goods (products or services).

Innovations can also be grouped as follows: technical and organizational innovations [4]. Technical innovations include: new products, new technologies and new services.
Often success of an enterprise is determined by the combined effect resulting from the introduction of a new product, a new technology or a new service. Technological innovations may be categorized based on their research intensity, total capital expenditures, payback periods or their impact on the development of a particular company or an industry.

In this case, they can be classified as basic and applied innovations, innovations improving products, technologies or services and modifying innovations. Basic innovations associated with the advancement of technical progress have the strongest effect on the success of an enterprise and the economy in general. The share of improving innovations is the largest in the activities of industrial enterprises, while the share of modifying innovations is the smallest.

New technological potential and new demands, on which two well-known models of the innovation process are based, constitute objective prerequisites (initial sources) of emergence of new technological developments. Statistical data on the results of analysis of initial cause of various innovations in different industries and in different countries demonstrates that demand plays the key role in the development of innovation processes superseding new technical potential. At the same time, practice shows that to succeed, both initial causes should be considered and promptly applied and appropriate

innovative models should be selected. As a rule, organizational advancements pay off quicker to compare to technological ones and, therefore, are also important for the success of an enterprise [5]. Organizational advancements include new developments in the organization of the production process, new methods of marketing, financial innovations, new methods of management, structural innovations, innovations related to the changes in competition, segmentation and specifics of the market and other innovations.

Thus, the concept of innovations, in the broad sense, covers a particular object or specific measures utilized in the production process upon a successful completion of scientific research or as a result of discovery (invention) featuring new qualities different from the preceding analogue [6].

Since the market of innovations is quite large, the entire range of innovations must be properly classified. Content is developed based on the classification attribute.

Stages of the Innovation Process

The innovation process represents a complete cycle from the emergence of a seed idea to its implementation (Figure 1).

The following elements constitute the content of the innovation process:

1) exploratory research works aimed at the identification of new processes, systems and devices, new types of treatments and methods of production of machinery, new forms and methods of the manufacturing process management;
2) research and development of new products, new technologies and new styles and methods of the manufacturing process management, including research and design as well as the process development;
3) development of experimental and pilot models of new equipment, widgets, machinery and their testing.

The innovation process involves a number of consecutive stages: systematization of incoming innovative ideas, development of a new product idea, cost-effectiveness analysis of the new product, development of the new product, testing of the new product on the market, generating a decision to commission a new product [7].

The systematization of incoming innovative ideas is the initial stage of the innovation process. Accumulation of ideas of potential innovations and their systematization is conducted on regular basis in the course of ongoing marketing, research and development and other activities of an enterprise. Such work, carried out at the enterprise, may result in the conception of innovative ideas. Once a possibility or necessity for an innovation arises, the innovation cycle kicks off. The following works are performed at the first stage of this cycle:

1. Collection of information on the market technological developments and data on the innovations received from research and development (R&D) departments and marketing services of the production departments. Study and analysis of consumer suggestions, demands and complaints, received from the distribution unit of the enterprise, resellers and customers. Accumulation of data pertaining to the potential of the enterprise in the area of design and development of new products.

2. Identification of the types of risks and of their impact on the results expected from the development and implementation of the innovation.

3. Collection and analysis of information concerning target markets and long-term trends of development of the parameters of the markets related to the innovation.

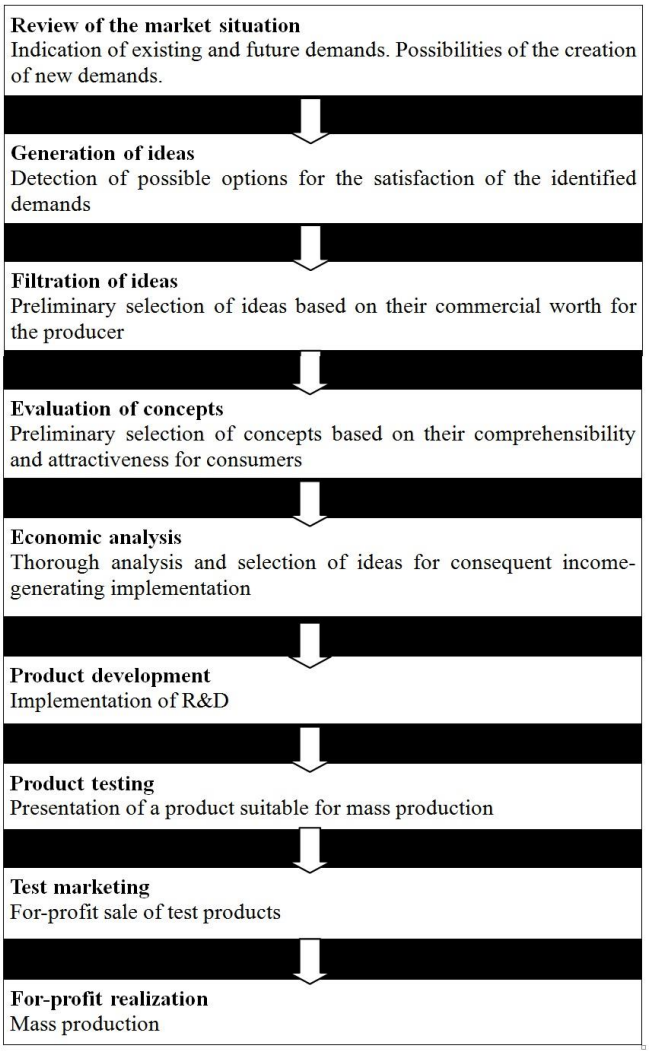


Figure 1: Stages of the innovation process.

The generation of a new product idea implies the selection of the innovation idea suitable for implementation. At this stage, all existing ideas are considered and the one that makes the best fit for the available resources and has a greater potential for generating profit in case of its implementation and sale is selected. The following works are executed at this stage:

1. Preliminary assessment of the potential commercial application of ideas;
2. Feasibility study of the ideas;
3. Evaluation of the degree of technological compatibility of new products with traditional products, manufactured by the enterprise;
4. Evaluation of the degree of conformity of new products to the company's image and its development strategy;
5. Performance of an infringement search in the relation to the idea of a new product [8].

The development of an investment project for the new product and its preliminary evaluation is an integral part of the cost-effectiveness analysis of a new product. As part of the project development, technical and economic parameters of a product or a project are defined and its quality and consumer properties are evaluated.

It is mandatory to conduct an evaluation (or forecast) of the potential demand and sales volume of the product on the market. A preliminary program of the product's development and commission in production is established. An assessment of the amount of investments required for the development and manufacturing process management of the product as well as evaluation of the payback period is conducted with the view of the preliminary program. An important element of the feasibility study is the analysis and assessment of the availability of resources required for the development and manufacturing of new products (the production method, machinery and equipment, raw materials, personnel, financial resources) as well as the estimation of the deadlines for the product development, implementation and release to the market. The present stage is concluded with the analysis and evaluation of cost-effectiveness (profitability) of production of the new product and the development of a marketing program for the product.

Creation of a new product is commenced after a relevant decision is generated by the management [9].

A decision to create a new product is generated based on the marketing program, elaborated for the product, containing all the necessary information pertaining to the new product and which factors influence in the results of the product's feasibility study, the analysis the sales market information and the impact on the overall performance of the enterprise resulting from the implementation of the product.

At this stage the following works related to the launching of new product are executed:

1. Elaboration of a new product (specific project) development program.
2. Implementation of the program (project).
3. Creation of a prototype model (production prototype) and its testing for the verification of technical parameters, manufacturing process, safety (including environmental safety) check.
4. Selection of a name for the product, trademark, design, packaging, labeling and addressing other issues related to the design of the new product of a particular enterprise.

Testing on a limited market, within a limited period of time (at least 3 months) of such parameters of the new product as its price and other commercial parameters. Based on the results of testing the following aspects are determined:

1. The most effective sales channels;
2. The means and methods of advertising of the new product;
3. Arrangement of (warranty and post-warranty) maintenance of the product and other issues related to the sale of the product on the target market.

Generation of a decision to launch new product concludes the innovation cycle of a new product development.

The decision regarding the launch of new product and the scale of production (limited edition, batch or mass production) is made based on the production marketing program. Elaboration and endorsement of such a program is carried out based on the product marketing programs and the results of testing of the new product on the market [10].

Production marketing programs of production unit marketing programs include:
1. Business rationale of the production program, its structure, the range and quantitative parameters of the products;
2. Volume of sales, product and production profitability;
3. Production capacity of the enterprise: utilization of existing production facilities; availability of resources and qualified personnel;
4. Channels and methods of distribution; publicity and image of the company in the market;
5. Financial capabilities (including the total amount of investment in the development of production and distribution) and sources of funding;
6. Forecast results (profit or loss) for an accounting period.

Thus, the innovation process involves a series of sequential steps.

Organizational forms of Innovative Activities

The innovation process engages a large number of participants and stakeholders.
It can be implemented at the national (state) and international levels, in regions and industry sectors or in local (municipal) districts [11].

All participants have their own goals and establish suitable organizational structure for their achievement.
Different intensity of innovative activities is typical of large and small companies. It is relevant to their missions, goals and strategies. Therefore, big corporations establish a network of small innovative firms and train their management in accordance with special "incubator programs." Such organizations are established in the form of "incubator firms."

Sometimes such schemes as "franchising" or "leasing" are used for the dissemination of new complex industrial products and methods of production.

Implementation of regional research and engineering and social programs requires the establishment of relevant associations of scientific (academic), industrial and financial organizations, i.e., various kinds of scientific and industrial centers.

Because investment projects are associated with risk, relevant types of investment companies, such as venture capital funds, or companies engaged in innovative activities – venture companies – are established.

Major, long-term state programs that attract significant resources require the establishment of scientific and technological parks and technopolises [12].

The evolvement of international research, engineering and trade relations is due to the globalization of markets for various products, international specialization of labor and the creation of various alliances and joint ventures.

Management of companies assume that to achieve commercial success, a rather high "density" of flow of the innovative ideas: inventions, proposals on the improvement of quality and design, reduction of cost required for the achievement of business success. The need to enhance the significance of such parameters of competition as product novelty, price, quality, reliability and customization, sets a task for nearly all employees, and, ultimately, for the entire staff of the company to engage in the ongoing full-blast brainstorming [13].

KEY FINDINGS

Market factors affecting the nature of innovative activities

External Factors

The innovative process plays the role of a resultant of many economic factors both objective and subjective, internal and external.

The objective factors include those external factors that are preconditioned by long-term trends and are not associated with strong-willed decisions of a particular subject.

They include economic laws strongly impacting investment activities:

- Law of gain and appropriation of profit, which may also be called the law of motion of the market economy, as profit is considered the driving force of production;
- Law of value governing the development of the economy and determining that any types of transactions must represent a mutually beneficial exchange;
- Law of supply and demand determining the economic mechanism of interrelation between production and consumption;
- Law of competition describing an economic mechanism that governs actualization and interaction of objective economic laws in particular type of markets;
- Pattern of cyclical economic development, which determines the relationship between certain business activity, including innovative, and the corresponding phase of the “cycle” [14].

External factors triggered by consciously generated decisions are said to be subjective in their nature. Among them are:

- State innovation policy – an important element of the state economic policy;
- Monetary policy of organizations acting as investors.

Implementation of innovative projects is often associated with borrowing of funds, which requires accounting for high risks of such investments.

- Strategies of competing companies. The significance of this factor is determined by the capabilities of other business entities to alter the structure of the market; by the intensity of competition; by the ability to interfere with the acquisition of necessary physical resources;
- Consumer behavior, which has strong influence on the demand for innovations, which emergency is triggered by the development of innovative relations. Enterprises involved in innovative activities, which account for this factor, have to make extra efforts to spur the future consumer demand for the new product, service or technology [15].

In this process, objective and subjective factors correlate, interpenetrate and form a system facilitating development of an innovative strategy.

Factors of the innovative activity can be classified as global, i.e., determined by the macroeconomy and ultimately by the society, and local, i.e., determined at the micro level of an individual enterprise [16].

The following factors are considered global: political situation in the country and in the world, competition in the international market, and the relationships with the authorities, tax policy.

In the context of environment beneficial for the implementation of innovations, the center of gravity in the innovative relations is shifted towards the innovative capacities of companies-innovators – internal factors influencing their innovation strategy.
When the external environment of the economic system is favorable for innovations, they entirely depend on the internal factors of the innovative activity.

Innovative potential of a company is represented as a set of physical, financial, labor, infrastructure, intelligent information and communication resources [17].

There are two groups of factors defining investment activity: internal, aimed at the establishment and management of innovative activities in an enterprise and external, contributing to the expansion of the limits of innovative activities.

External factors include the factors that facilitate interactions of an enterprise with the economic and social environments:

- use of external sources to support all phases of the innovation process, from discovery and development to commercialization;
- communication with customers, business partners, investors, competitors, research organizations and universities;
- lobbying in the state institutional structures.

Utilization of educational transfer and advisory services are of a particular importance for small- and medium-sized enterprises, being the external factors of the development of the innovative activity [18].

This opens new horizons for small- and medium-sized enterprises by giving them special opportunities to expand their limited, in terms of research and development and labor, resources. There are several types of transfer services:

- Issue and receipt of orders through autonomous and independent research organizations or institutes of universities, etc.;
- Collective research and research and development cooperation;
- Use of technological databases and services of state advisory institutions;
- Specialized literature.

Rich selection of options of the innovative project support, rendered specifically to small- and medium-sized enterprises, is offered as part of state development programs, for example:

- programs of support in the field of technology transfer for small- and medium-sized enterprises;
- provision of financial and intangible assistance as part of external innovation consultations;
- implementation of indirect measures promoting research and development (for

example, tax cuts);
- direct assistance for particular lines of technology;
- Assistance in the establishment of innovative enterprises.

As part of targeted innovation management, various assistance programs should be evaluated and those of them that deserve attention and may satisfy conditions of a particular company should be selected.

Small- and medium-sized enterprises should not be intimidated by bureaucratic obstacles and a large number of different programs offered, but look at them as at yet another, not overly complicated stage on their way to the successful implementation of innovative projects.

A part of problems of small- and medium-sized enterprises with the implementation of innovative projects is the weakness of their financial base. However, it can be resolved through targeted planning, which should be incorporated in the relevant financing concept. Such enterprises can benefit from state aid or resort to equity financing.

Early financial planning as well as identification of needs in financing at all phases of the innovation process, to ensure receipt of funds at the appropriate time, is of crucial significance.

Internal Factors

Internal factors – essential features of an enterprise differentiating it from its competitors and defining its innovation capabilities. They include:
- motivated management;
- integration of technological, organizational and managerial innovations;
- high efficiency;
- productive relationships with the staff; its broad involvement in the innovation process;
- continuous company training;
- quality, infrastructure, organizational development management.

Internal factors can also be divided into two groups.
The first group includes the factors shaping the system of internal economic relations and methods of interaction with factors of the external environment. The second group is comprised of the factors that characterize the “internal resources” of an organization.

The first group of factors is as follows:

- the type of property of the means of production, which determines the nature of the economic interests of enterprises, inter-economic relations, including management;

- organizational structure determining mobility of the economic system in the process of generation of management decisions and the extent to which these decisions impact the external environment;
- company size: whether the company falls under the category of small- or medium-sized companies, or corporations;
- sectoral profile: specialization of the company, the main objective of its business, market share and its competitiveness in the market.

The size of the company affects its ability to accumulate not only financial, but also human resources, necessary for the implementation of innovation.

As a rule, the larger the size of the company, the more opportunities it has for innovate and attract productive resources to this activity.

The second group of factors includes:

- the company's financial standing, which identifies its financial stability, the degree of dependence on external sources of financing of innovations, its solvency and its consequential ability to attract loans for the financing of innovative projects;
- research and engineering potential, which defines capabilities of the company to implement R&D;
- production potential, which characterizes the company's production base, the ability to produce a particular product and the production capacity;
- human resources, determining the level of expertise of the company staff, required for the implement of innovations.
-

Restructuring of enterprises plays the role of a tool for the development of a system of internal economic relations and methods of interaction with environmental factors.

Restructuring processes that are categorized as “passive,” are manifested in the closure of unprofitable divisions, reduction of staff, reduction of expenditures on social facilities, debt restructuring, etc. Restructuring processes can also be termed “active,” which implies the introduction of new manufacturing process and management technologies, investment in education, introduction of traditional products to new territorial markets, development of new products, their promotion in the market, etc. The following types of restructuring are identified in scientific literature: production (horizontal and vertical), technical and technological, organizational and administrative innovations [19].

Product innovations represent the most common type of innovative activities of Russian enterprises in the course of their restructuring. The essential difference between innovations in the general sense of this term and product innovations is, in particular, in the source of innovative activities: they might be implemented through simulation, borrowing of existing technologies or products from other companies or through own research and development. The former refers to simulation, and the latter – to innovations.

Competitive factor facilitates the selection of innovations in the commodity market. At the same time, the term “competition” also implies that the economic environment is a specific market where other economic factors also interact.

There is a strong connection between competition and innovation relationships. In a sense, innovative relationships are the product of competition, and the results of such relationships are a tool in the competitive struggle.

Competitive struggle with other companies is as a significant factor stimulating innovation activities of an enterprise.

Y. Simachev points at an inverted dependence of innovative activities of enterprises on the level of competition in the market [20].

At the beginning, the number of competitors in the market of innovative activities increases, and then it stabilizes or even decreases.

Moderate competition helps to speed up the process of implementation of innovations. However, with the tightening of competition, monetary resources are getting depleted, and the innovation process either slows down or is ceased altogether.

Factors stimulating innovative activities of an enterprise are associated with the emergence of new consumer demands and preferences as well as with the reduction of the life cycle of products and soaring of products' research intensity.

The following types of the innovative activity are recognized as horizontal product innovations: expansion of the range of products manufactured by the company in the earlier periods; creation of a new appearance and packing of the product.

The following types of the innovative activity are categorized as vertical product innovation: the creation of a brand new product; replacement of obsolete discontinued products; improvement of the product quality; introduction of a new system of after-sales service.

In horizontal competition growth of the innovative activity represents a means for the occupation of new market niches or strengthening of position in the existing niches. Innovations with vertical connections represent a response to either increasing demands of buyers of raw materials and semi-finished products for supplies, or the desire of suppliers to ensure an appropriate level of market promotion of the product.

Process innovations imply an improvement of the existing or implementation of brand new technologies or equipment upgrades.

Managerial innovations focus on the transformation of the management structure of a

company, improvement of the system of corporate finance and personnel management. While competition promotes the innovative activity, transfer of technologies assists companies in the acquisition of new ideas in the circumstances when the innovation process occurs through copying and simulation. Transfer of latest technologies is most often implemented via horizontal connections between enterprises. Here it refers to a simple copying of a new product, of new manufacturing process or of a new management solution, developed by companies operating in the same market, i.e., competing companies.

It should be noted that Russian enterprises actively involved in innovations have significant differences from their western peers, because western companies operate in a highly competitive market, saturated with quality products. In case of Russia, it lags behind the quality standards of the international market. A significant part of new products is such only for the Russian market and is not competitive. To bring them to the world's standards requires so much effort and will be so costly that many businesses cannot afford it. Three types of Russian enterprises, classified according to the nature and scale of innovations, can be identified [20].

Type 1 – innovative enterprises operating at the global level. These are predominantly large companies contracted by the state, with well-developed physical and technical base, selling their products in the international market.

Type 2 – innovative enterprises operating at the level of the Russian market and pursuant to its standards. These are companies producing goods intended mainly for the Russian market and only partially for export. The production base of such companies usually does not comply with world standards and implemented innovations focus mostly not on the upgrade of the production capacities, but on the improvement of company's financial standing and other aspects of its operations.

Type 3 – companies not engage in innovations. Unfortunately, most of Russian enterprises – as many as 78% – represent this type.

These are mostly small- and medium-sized enterprises with outdated physical base, idle capacities, not operating in foreign markets.

An important factor in the development of the innovative activity is the quality of the labor force. Higher quality workforce with higher levels of education and qualifications of employees results in more efficient use of production resources. It is the level of education that defines creative abilities of employees and their openness to new ideas emerging in the market. The ability of the company to carry out its own research and development of new products or to just copy what other companies produce depends on the quality of its workforce [21].

A company operating on the basis of the “learning organization” principle is regarded as an attractive workplace for highly skilled creative workers and enjoys better

relationships with customers and partners. Research plays a special role in this process. Therefore, it should be deeply rooted in the production process and should be a permanent element of the cycle of development, dissemination and application of innovations.

Competitive opportunities of a company can be evaluated in terms of the relative market share controlled by the company, the swiftness of its reaction to the changing market conditions, etc. Technical capabilities depend on the equipment specifications, the pattern of the manufacturing process, etc. The role of corporate culture in the promotion of innovations and significance of strong leadership in the creation of such a culture should be noted separately.

DISCUSSIONS

It should be noted that, as a result of the ongoing technological revolution in the past decade, some shifts can be seen:

- from predominantly process innovations to product innovations;
- from incremental product innovations to radical innovations;
- from engineering innovations to the innovations based on the application of basic knowledge, i.e., to fundamental and similar applied results;
- from self-reliance to the outsourcing of the early stages of technology development, that is, to creation of companies on the basis of a single new technology.

To determine how well the modern paradigm of development of Russian enterprises conforms to these trends, we must, first of all, answer the following questions:

1. What type of innovations dominates Russian business environment today?
2. How high is the quality of Russian innovations, that is, whether they are incremental or radical innovations?
3. What shapes the basis of creative innovations in Russia – engineering or fundamental science?
4. How high is the quality of innovation management in Russian companies?
5. Are there small- and medium-sized engineering enterprises that are engaged in innovative activities in Russia and what is their number?

First, let's recall that technological innovations are divided into two types:

- Product innovation that imply the creation of a new or significantly improved product;
- Process innovations aimed at the creation of new or significantly improved method of production.

Discussing the degree of radicalism of Russian innovations, it should be noted that, as it has already been said above, even among new for the Russian market innovative

products, the products that do not conform to the standards of foreign markets dominate.

That means that Russian innovations, for the most part, are either of a diffusional or incremental nature. What's encouraging and gives hope that Russia will steer toward creative, radical innovations is the fact that in recent years the contribution of high- and medium-tech economic activities amounted to about 70% of the total volume of innovative products presented in the Russian market.

To assess the impact of engineering and fundamental science on the process of the development of Russian innovations, let's refer to the results of surveys of Russian enterprises regularly conducted by Russian Federal Statistics Agency (Rosstat). According to these surveys, in 2013, among the voting organizations that recognized the sources of information directly related to the educational institutions as core and significant, only 8% of votes were cast in favor of the academic sector (Research Institute of Russian Academy of Sciences and universities), while 19% of all votes were cast in favor of the industry-specific applied sector of science (industry-specific universities). Provided these data are trustworthy, the applied and not academic component of R&D has more influence on the content of Russian innovations [22].

Insufficient qualifications of the management team and low level of management poses an additional risk in the transition to innovative development of a company. Culture and organization of management, ability to think strategically, collect and apply data as well as the ability to establish necessary connections to obtain additional resources and skills are viewed as essential aspects. The results of surveys conducted in October-November 2012, in which 218 companies, representing a rather broad array of businesses, participated disclosed that there are serious problems in this domain in Russia.

Suffice to say that almost a third of respondents (32%) believed that the causes of unsuccessful innovative activities were: internal miscalculations and incorrect assessments of the forecast effects of innovations, calculated by the company, while almost a fifth of the respondents identified the insufficient level of marketing of innovations as the cause of failure.

Now we have to address only the last of the above questions, that is, to determine whether small- and medium-sized engineering companies involved in innovation activities exist in Russia. And if it is so, what is their number. To do that, let's once again refer to the data collected by the Federal Statistics Agency of the Russian Federation.
It shows that, on the one hand, Russia has a cluster of small- and medium-sized companies, which can be identified as engineering companies, are actively engaged in innovative activities.

This is confirmed by the following facts: in 2013-2014 the share of R&D expenses among medium-sized enterprises actively engaged in innovative activities was 1.5 times

higher than the national average, as for small-sized enterprises (fewer than 50 employees), their share of R&D expenses was close to the national average. However, it should be noted that, unfortunately, the cluster of such engineering companies in Russia is not significant. The fact that in terms of the number of workers employed by small- and medium-sized enterprises, they constitute less than 7% of all enterprises engaged in the innovative activities and that their share is only slightly higher than 20% as far as expenses on engineering innovations is concerned confirms that fact [23].

CONCLUSION

Summarizing the aforesaid, we can conclude that Russian paradigm of innovative activities is still far from that state when it could drive economic development to a new quality level and give the country new impetus to gain a competitive position in the international market.

Thus, the following conclusions can be made to finalize this research paper.

Currently, Russia is experiencing a real boom of innovative activities. Old methods and styles of economic management are getting replaced with new ones. Basically, all companies and organizations – starting from economic entities managed by the state and ending with newly established limited liability companies of the “small business” format are literally forced to engage in innovative activities.

Innovations are perceived to be the principal means of ensuring competitiveness of goods produced by enterprises and of sustainable success of companies or corporations in the market on the whole.

“Innovation” is defined by a higher technological level, new consumer qualities of a product or service comparing to the previous product. It should be noted that the concept of “innovation” is applied to all novelties, both in production and in organizational, financial, research and development, educational and other areas of a company's business as well as to any upgrades facilitating cost savings or just simply creating conditions for such savings.

Depending on the selected criterion, innovations are classified in a certain way.

The innovation process involves a number of consecutive stages: systematization of incoming innovative ideas, development of a new product idea, cost-effectiveness analysis of a new product, development of a new product, testing of a new product on the market, taking a decision to launch its production. Sustainable mechanisms of management of the research and engineering activities have formed in modern conditions. They reflect specifics of the process of integration of science and production. The main characteristic of this process is as follows: research and development zooms in on the needs of the market; goals and strategies of enterprises are being formulated under a stronger influence of market factors and market conditions.

Many various forms of the research organization and management have been developed.
All factors affecting investment activities of a company are divided into two categories: external and internal.

The Russian paradigm of innovative activities is still far from the state when it could drive economic development to a new quality level and to give the country a new impetus to gain a competitive position in the international market.

REFERENCES

1. Golstein GY (2003) Fundamentals of Management: Educational Aid. Taganrog: Publishing House TRTU.

2. Fagerberg J (2005) The Oxford handbook of innovation. Oxford University Press.

3. Agarwal R, Echambadi R, Franko AM, Sarkar MB (2004) Knowledge Transfer through Inheritance: spin-out generation, development and survival. The Academy of Management Journal 47: 501-522.

4. Clark J (1995) Managing Innovation and Change. People, Technology and Strategy. SAGE Publications.

5. Tidd J, Bessant J, Pavitt K (2005) Managing Innovation: Integrating technological, market and organizational change. 3rd Edition. John Wiley, Chichester.

6. Hippel, Eric von (2005) Democratizing Innovation. The MIT Press Cambridge, Massachusetts.

7. Schumpeter J (1982) The Theory of Economic Development. Moscow: Progress.

8. Freeman C, Soete L (1997) The Economics of Industrial Innovation. 3rd Edition, Pinter, London.

9. Kabalina V, Clark C (2000) Innovations at the Post-Soviet Industrial Enterprises. Issues of Economics 7: 50.

10. Durand T, Probert D (2004) Bringing Technology and Innovation into the Boardroom Strategy. Innovation for Technology and Innovation Management, Palgrave Macmillan.

11. Dussauge P, Garrette B, Mitchell W (2000) Learning from competing partners: Outcomes and durations of scale and link alliances in Europe. North America and Asia Strategic Management Journal 21: 99-126.

12. Verstina NG, Taskaeva NN (2013) Features of practical approaches toward strategic planning of urban areas Economics and Entrepreneurship 8: 244-249.

13. Schoemaker PJH, Amit R (1993) Investment in Strategic Assets: Industry and Firm-Level Perspectives Advances in Strategic Management. Strategic Management Journal 10: 3-33.

14. De Wit B, Meyer R (2004) Strategy: Process, Content, Context an International Perspective. London: International Thomson Business Press.

15. Helfat CE, Peteraf MA (2003) The dynamic resource-based view: Capability lifecycles. Strategic Management Journal 24: 997-1010.

16. Drucker PF (1985) The Discipline of Innovation. Harvard Business Review pp: 67-72.

17. Eisenhardt KM, Santos FM (2000) Knowledge-based view: A new Theory of Strategy? Handbook of strategy and management. Sage publications.

18. Agarwal R, Echambadi R, Franco AM, Sarkar M (2004) Knowledge transfer through inheritance: Spin-out generation, development, and survival. The Academy of Management Journal 47: 501-522.

19. Verstina NG, Akimova EM, Kisel1 TN, Taskaeva NN (2015) Organizational and Economic Mechanism of Integration Restructuration of State-Owned Enterprises in Russia. Asian Social Science 14: 169-168.

20. Simachev YuV (2001) Trends and Factors of Industrial Enterprise Reforming. Economic Journal of Economics 3: 328.

21. Mukhamedyarov AM (2008) Innovation Management. Moscow: INFRA-M.

22. Krasnova LV (2008) Theoretical Aspects of Technical and Technological Innovations Management. Modern Aspects of Economics, Management and Innovations pp: 266-267.

23. Krasnova LV (2007) Internal Problems of Innovation Management. Issues of Economics 5: 79-81.