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**INDIVIDUAL AND GROUP COMPONENTS OF THE STRATEGIC
INNOVATION DEVELOPMENT OF THE COMPANIES**

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Abstract. *The article highlights the basic theoretic and methodological framework on the implementation of selected components and the coherent complex of strategic innovation development for companies. One modeled a unified way of setting up strategic innovation development, based on the identification of formalized stages and methodological approach in the form of the interaction between the company's goals and its resource component. The major criteria of acceptability were expressed for each of the vectors of the innovative development of the company in light of the factors of the external environment. One developed the methodological basis for implementation and evaluation of the innovation strategy of the company on the principles of goal-setting and the target model implementation.*

Key words: *strategic innovation development, external environment, components of strategic development, assessment of efficiency, resource component.*

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Introduction

The innovative development is one of the perspective ways to economic growth for companies. The management practice shows that innovative changes in the modern stage of the companies' development can provide not only high figures of economic growth but also improve their competitiveness, export potential, and solve economic, ecological, and social problems. The innovation activity is one of the key components of the provision of the successful functioning of companies. That is why modern economic conditions require intensive innovation activity, effective research, and invention organization, change adoption, innovation risks reduction, and strategic management in the innovative activity of each company.

The innovation development in the company is a complex process that requires careful planning and management of the innovation strategy tools according to the particular capabilities of the companies, based on the results of the evaluation of all forms of possible innovative activities. At the same time, the target of choosing an effective direction of innovation development of the company lies in the

determination such an optimal variant from the range of alternatives, which in the process of the innovation adoption would reflect the future behavior of the company in regard to the external environment, namely, to other business entities, taking into account individual internal capabilities.

As you can see, the list of factors, which require analysis, can be boiled down to the concept of the resource component as the individual potential of the company and the realization of goals that make the chosen strategy unique and original. The formation of the goal as a component from the range of factors is due to the fact that strategic targets of the company, directed at an extensive conquering of the market, greatly differ from the strategic tasks of the company, which hardly makes the ends meet.

Literature Review

The relationship of the innovation strategy with its resource allocation was highlighted by the researcher Afuah (2009). He determines the innovation strategy as a system of conceptual installations that come up out of long-term targets and define the character of the resources allocation between the development pathways of the system as well as their reallocation in the case of the changes within external and internal conditions of its work. Burgelman, Christensen & Wheelwright (2004) put the content of strategic innovation management into the timely concentration of efforts on the assimilation and use of the promising scientific and technological research, and timely resource provision of innovation dynamics to achieve the goals of the company, thereby creating the conditions for long-term efficiency of its activity.

Robben & Roks (2010) think that it is the resource set, which determines the phases of the innovation development of the companies, which he proposes to rank starting from the least risky, requiring the least amount of effort investments: managerial innovations, market innovations, modernization innovation, technological updating, and technological innovations. The work of Drucker (1985) serves as the methodological basis for the determination of the given phases. It depicts the classification of resources of the innovative ideas and research investigations of the American scientists regarding the expenses on the innovation activity, which are grouped according to its specific directions and highlighted in the research work.

While recognizing such an approach to the definition of the stages of the innovation strategy, we suggest to expand the given set, based on the individual and group components of the innovations in relation to the innovative goals, keeping to the concept of the stage formation, starting from the least risky and least expensive ones, and treating the innovation strategy as the set of components, inherent to different types of innovative activity (Johnston & Douglas, 2013). The restatement of such a principle of the stage formation is found in the works (Schroeder, 2013), who states that the types of a strategy of any level depend on the prevailing type of the innovation. The research investigations (Freeman, 1987; Talke, Kock & Salomo, 2011) treat the scientific and technical, technological, social and social-organizational innovations as a substantive component of the innovative strategy. The indirect

reference to the phases of the innovation strategy is found in the classic classification, developed (Schumpeter, 1934), who distinguished five types of innovations:

- the production of a brand new product or a product with a qualitatively new level of properties;
- the adoption of new ways of production that will be based on the new scientific discovery or a new approach to commercial use of the goods;
- the development of a new sales outlet by the specific industry of the production sector of the country, regardless of its prior existence or absence;
- the development of new resources of raw materials and semi-finished products irrespective of whether they existed earlier or not;
- the introduction of new organization forms.

Methods

One should base his choice of the innovation strategy on the analysis of the key factors, which characterize the company's activity: the state of industry and place of the company in this area, objectives of the company, interests and attitude of higher management, financial resources, skills of workers, the company's responsibilities, the rate of dependency on the external environment, and the time factor.

By considering the company's development as a continuous process of obtaining and expansion of its recourse capabilities, one should mention that since the course of development of each company is strictly individual, and therefore, each company possesses an individual set of resources, one could not miss noticing the impact, produced by the available set of resource on the choice of the company's strategy. By stating that resource allocation in the organic combination with the strategy objectives is a crucial factor that is able to influence the choice of a specific type of the innovation strategy by the companies, we are going to study the interaction of these two factors and their influence on the formation of the strategy of innovation development to the companies, noting that the innovative goals of the company derive from the general strategic objectives, and the company's resource set forms the required innovation potential.

The development of the strategy includes the process of analysis and identification of strategic benchmarks on the market, which correct and find their reflection on the form of various strategic programs and projects. The innovative goal as the constituent of the general strategic objectives constitutes the desired result of the company's activity (specific executants and responsible executives) innovation that is carried out within a limited period of time, based on the limited resources, and directed at qualitative (revolutionary) development of the company. Therefore, the definition of the innovative goals, which makes it possible to direct strategic innovative decision to accomplish specific tasks, related to the company's activity, should take place based on the realization by the team management of their internal capabilities, presented by the available innovation potential. Accordingly, the management of the innovation development, oriented at achieving the given goals, can be effective only if specific strategic goals can be supported by the realism of their content.

Results

Strategic innovation development of the company

The innovative development management of the company goes far beyond the determination of the objectives of the innovation strategy and requires evaluation of the possibilities on their implementation. In this context, it means that the innovation goal forms a vector of development, which is called to provide the achievement of goals. However, the company can obtain better results only if the target goals of the company correspond to the existing innovation potential, through which the development of the company takes place. That is why the choice and implementation of the innovation strategy depend on the state of the innovation potential, the formation of which can take place using the components and elements of the company's internal environment. The input bundle (financial, material, informative, social, etc.), the company possesses, forms its innovation potential and characterizes its readiness to systematic innovative growth, thereby influencing the structure and directions of the innovation strategy (Figure 1).

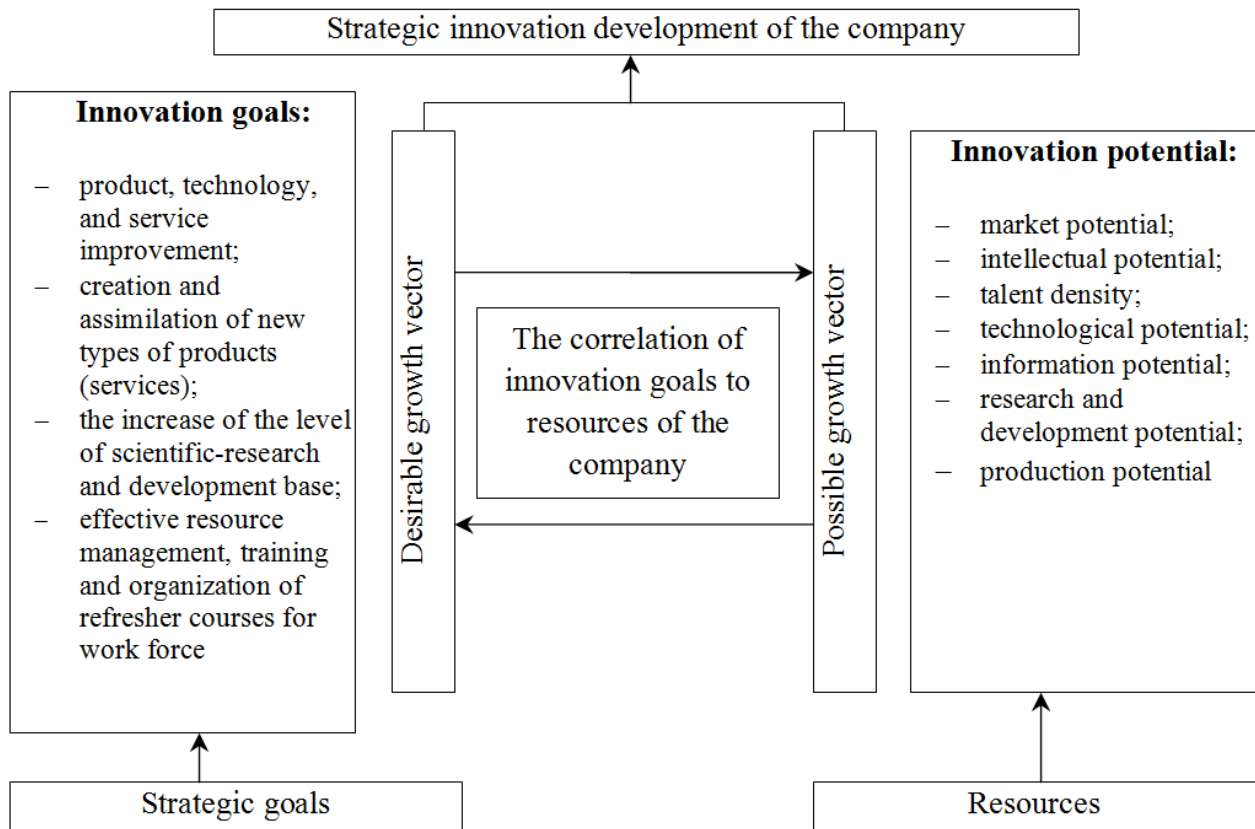


Figure 1. The formation of strategic innovation development of the company jointly with the goals of the company and its resource component

The modern classification of innovations distinguishes the following types of companies, based on the content of their activity: technological, manufacturing, economic, trading, managerial, and social innovations. Having modeled the received results on the area of strategic activity, we will construct the process of choosing an innovative strategy in the form of the combination, including the following components: social-psychological – organizational and management – marketing –

economic – manufacturing – scientific and technical (Aiman-Smith, et. al., 2005). Such an approach to the phases of the innovation strategy characterizes innovation activity as actions, aimed at bringing a wide range of innovations under cultivation (adoption), which have relation to:

- the production of new products and services;
- the adoption of new technologies and/or mastering of new techniques;
- the use of new sources of raw materials;
- the introduction of new forms and methods of industrial engineering techniques, labor, and management;
- market development or the promotion of new markets.

The stage of formalization and implementation of the innovation strategy of the company

We believe that it is appropriate to form the phases of the innovation strategy using the gradual formation as it allows to simultaneously (parallel) adopt the homogenous innovations and gradually form the adoption of the interdependent innovations, distributing innovative goals between the phases of the innovation strategy on one hand, and efficiently reach the target goal of the systematic innovation development by integration of subsystems of the company on the other hand (Figure. 2).

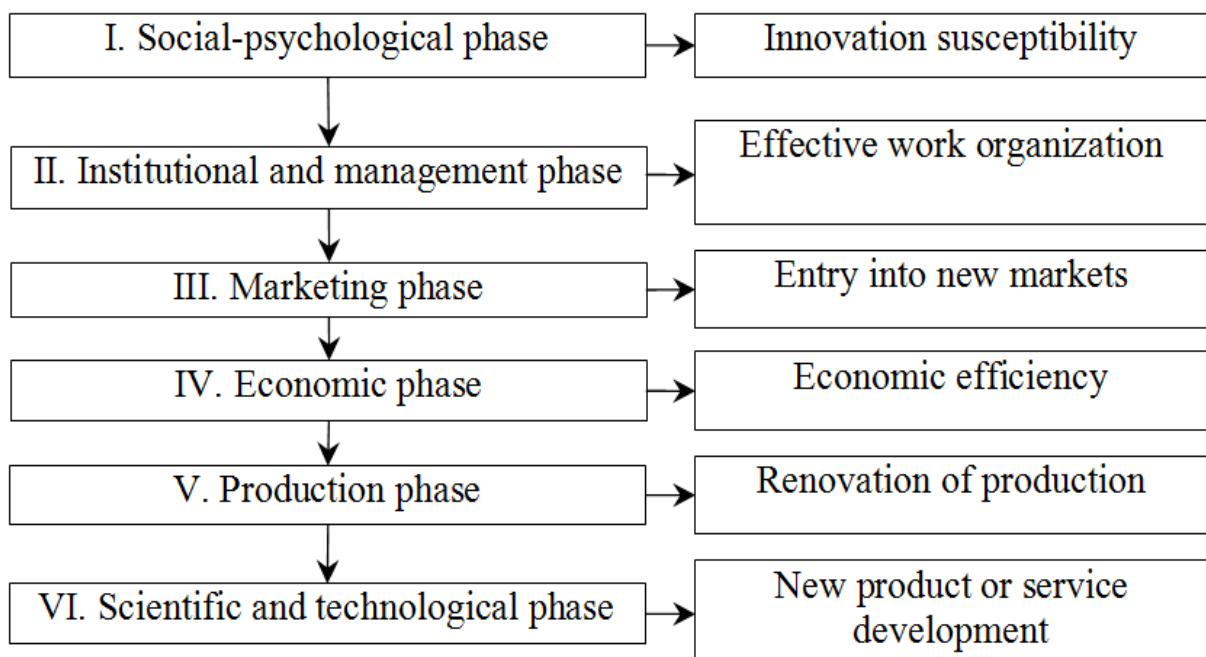


Figure 2. The system of innovative goals teaming up with the phases of an innovation strategy

Let us have a closer look and analyze each of the given phases of the innovation strategy in detail (Table 1).

The socio-psychological phase is the basic element in the formation of any type of innovation development strategy, which includes the availability of professional personnel, the necessary knowledge and information, experience, motivation, and strategic innovative thinking in the company (Balsano et. al., 2008).

Table 1. Phases of the innovation strategy of the company

Type of innovation activity	Lines of activity
Social-psychological	<ul style="list-style-type: none"> • the adoption of new forms of staff activation (the promotion of creative search, use of new knowledge, improvement of labor protection conditions, health protection, etc.); • staff training and reeducation; • the improvement of professional standards of employees; • the formation of susceptibility to innovations, strategic innovative thinking.
Organizational and management	<ul style="list-style-type: none"> • the improvement of the organizational structure and system of management; • the adoption of new industrial engineering techniques; • service improvement; • the improvement of control forms; • the change of interaction methods with the supplementary and auxiliary departments.
Marketing	<ul style="list-style-type: none"> • the new directions of the market boundaries expansion (coverage of new market segments, new ways of the product use, and entry into new regions); • the diversification of production and sales (the offer of novelties on the new markets, promoting traditional directions of the company's activity; the offer of novelties on the new markets, which have no relation to the former types of activity, orientation on new markets); • the new methods of the price policy; • the new forms of interaction between suppliers and requestors; • the new ways of the product promotion and improvement of the trade process efficiency.
Economic	<ul style="list-style-type: none"> • the new financial instruments and methods of the cost distribution; • the improvement or modification of the financial system; • the change of methods and ways of planning; • cost-saving; • the rationalization of an accounting system; • the investment policy.
Manufacturing	<ul style="list-style-type: none"> • mastering new types and sources of supplies, materials, and/or new approaches to the use of traditional ones; • the expansion of production capabilities; • the improvement of labor efficiency; • the change in the structure of production.
Scientific and technical	<ul style="list-style-type: none"> • the adoption of new or modified technology; • the adoption of new or modified product models; • the environment protection measures implementation; • the scientific development and research practice.

Let us use the scale given in the research (Tidd & Bessant, 2014), which is regarded as the most efficient tool to use, compared to the rest of the scales of this type, for expert evaluation of paired comparisons and the possible type of a strategy.

Let us hold the evaluation of the correlations between the acceptance criteria for each component of macro-environment in the groups of paired ratio on two levels and mark the first component as the economic factors {a company, customers, suppliers, competitors, labor market} through $X = \{x_1, x_2, x_3, x_4, x_5\}$, the second component as the technological factors {a company, consumers, suppliers, competitors, labor market} through $Y = \{y_1, y_2, y_3, y_4, y_5\}$, the third component as the political factors {a company, customers, suppliers, competitors, labor market} through $Z = \{z_1, z_2, z_3, z_4, z_5\}$, the fourth component as the social factors {a company, customers, suppliers, competitors, labor market} through $C = \{c_1, c_2, c_3, c_4, c_5\}$, and the fifth component as judicial factors {a company, customers, suppliers, competitors, labor market} respectively $K = \{k_1, k_2, k_3, k_4, k_5\}$. The identified groups of correlations were set by the matrices respectively $\{XY\}$, $\{YZ\}$, $\{ZC\}$, $\{CK\}$ (at the very beginning, in the course of the model formation, the matrices were filled with random values, generating in accordance with the normal law of the random variable distribution). After that, one determined the major acceptance criteria for each of the vectors of the instant environment.

For the first component (economic factors {a company, consumers, suppliers, competitors, labor market}) we use the markers: $x^1 = \{x_{1,12}^1, x_{2,1}^1, x_{3,1}^1, x_{4,3}^1, x_{5,5}^1, x_{6,19}^1\}$, $x^2 = \{x_{1,4}^2, x_{2,3}^2, x_{3,6}^2\}$, $x^3 = \{x_{1,5}^3, x_{2,4}^3\}$, $x^4 = \{x_{1,3}^4, x_{2,4}^4\}$, $x^5 = \{x_{1,3}^5\}$; for the second component (technological factors {a company, consumers, suppliers, competitors, labor market}) – $y^1 = \{y_{1,12}^1, y_{2,1}^1, y_{3,1}^1, y_{4,3}^1, y_{5,5}^1, y_{6,19}^1\}$, $y^2 = \{y_{1,4}^2, y_{2,3}^2, y_{3,6}^2\}$, $y^3 = \{y_{1,5}^3, y_{2,4}^3\}$, $y^4 = \{y_{1,3}^4, y_{2,4}^4\}$, $y^5 = \{y_{1,3}^5\}$, for the third component (political factors {a company, consumers, suppliers, competitors, labor market}) – $z^1 = \{z_{1,12}^1, z_{2,1}^1, z_{3,1}^1, z_{4,3}^1, z_{5,5}^1, z_{6,19}^1\}$, $z^2 = \{z_{1,4}^2, z_{2,3}^2, z_{3,6}^2\}$, $z^3 = \{z_{1,5}^3, z_{2,4}^3\}$, $z^4 = \{z_{1,3}^4, z_{2,4}^4\}$, $z^5 = \{z_{1,3}^5\}$, for the fourth component (social factors {a company, consumers, suppliers, competitors, labor market}) – $c^1 = \{c_{1,12}^1, c_{2,1}^1, c_{3,1}^1, c_{4,3}^1, c_{5,5}^1, c_{6,19}^1\}$, $c^2 = \{c_{1,4}^2, c_{2,3}^2, c_{3,6}^2\}$, $c^3 = \{c_{1,5}^3, c_{2,4}^3\}$, $c^4 = \{c_{1,3}^4, c_{2,4}^4\}$, $c^5 = \{c_{1,3}^5\}$, and for the fifth component (judicial factors {a company, consumers, suppliers, competitors, labor market}) respectively – $k^1 = \{k_{1,12}^1, k_{2,1}^1, k_{3,1}^1, k_{4,3}^1, k_{5,5}^1, k_{6,19}^1\}$, $k^2 = \{k_{1,4}^2, k_{2,3}^2, k_{3,6}^2\}$, $k^3 = \{k_{1,5}^3, k_{2,4}^3\}$, $k^4 = \{k_{1,3}^4, k_{2,4}^4\}$, $k^5 = \{k_{1,3}^5\}$.

For defining the correlation between $\{XZ\}$, $\{XC\}$, $\{XK\}$, $\{YC\}$, $\{YK\}$, $\{ZK\}$ among other components of a macro-environment, we perform sequential closure of ratios using the compositional rule, which for the closure of the ratio $\{XY\}$ on the ratio $\{YZ\}$ has the following form:

$$(x_i, z_j) = \frac{\sum_k (xy)_{ik} \times (yz)_{kj}}{\sum_k (xy)_{ik}} \tag{1}$$

The compositional rule type (1) is also used to find the closure of the newly obtained ratio on the ratio figures, which was put based on the expert estimations (the figures are rounded up to the whole number).

The compositional rule is used in the same way to find the closure for other correlations, used by the corresponding matrices:

the ratio $\{XZ\}$ on the ratio $\{ZC\}$ for receiving $\{XC\}$:

$$(x_i, c_j) = \frac{\sum_k ((xz)_{ik} \times (zc)_{kj})}{\sum_k (xz)_{ik}} \quad (2)$$

the ratio $\{XC\}$ on the ratio $\{CK\}$ for obtaining $\{XK\}$:

$$(x_i, k_j) = \frac{\sum_k ((xc)_{ik} \times (ck)_{kj})}{\sum_k (xc)_{ik}} \quad (3)$$

the ratio $\{YZ\}$ on the ratio $\{ZC\}$ for getting $\{YC\}$:

$$(y_i, c_j) = \frac{\sum_k ((yz)_{ik} \times (zc)_{kj})}{\sum_k (yz)_{ik}} \quad (4)$$

the ratio $\{YC\}$ on the ratio $\{CK\}$ for receiving $\{YK\}$:

$$(y_i, k_j) = \frac{\sum_k ((yc)_{ik} \times (ck)_{kj})}{\sum_k (yc)_{ik}} \quad (5)$$

the ratio $\{ZC\}$ on the ratio $\{CK\}$ for obtaining $\{ZK\}$:

$$(z_i, k_j) = \frac{\sum_k ((zc)_{ik} \times (ck)_{kj})}{\sum_k (zc)_{ik}} \quad (6)$$

The ratios obtained after the application of these compositional rules are characterized by matrices (the figures are rounded up to the whole number). Thus, the data obtained on the given phase of analysis make it possible to determine the quantitative ratios between the factors of the second hierarchical level of the business environment – how meaningful is each of the components, compared to other components in this hierarchy.

The methodological component of the company's innovation strategy implementation and evaluation

By strategic innovative thinking, we mean a new creative approach to strategic thinking (irrational thinking), which makes the company completely different from its competitors in the innovative sense and makes it possible to use drastically new approaches to customers; and is characterized by the realization of the fact that the changes take place much faster, and the future will be much different from the way we imagine it to be now.

The essential nature of socio-psychological phase in the work (Sullivan, 2010) is included to the notion of the innovative management and is expressed through the process of management of new knowledge, the creative potential of the new knowledge creators, the introduction of innovations, social and psychological aspects of innovations implementation. Social-psychological innovations can be also regarded as psychological readiness of the company to innovations and as a system of methods on the formation of the interest of the team to innovative transformations, without which all other phases will not be effective enough, which is confirmed in the research (Wischnevsky & Damanpour, 2008).

The importance and priority of this stage consist in the study of other phases of the innovation strategy as those based on the socio-psychological innovations as their content lies in the introduction or anticipation of the new patterns of corporate behavior, reflected in the implementation of other innovations.

While studying the research methods of the company, Marinova & Singh (2007) put an emphasis on the following peculiarities of social innovations:

1. dimensions – the social innovations have a larger sphere of application, compared to the material ones;
2. the dependence of social innovations on the group and individual traits;
3. the absence of the manufacturing phase;
4. a relatively small amount of expenses for implementation of social innovations, but more stressful as they have a relation to the interests of people.

The organizational and managerial phase includes the totality of innovations, aimed at improvement of the organization structure, style, methods of decision-making, the use of new means of data and document processing, rationalization of administrative work, the change of methods and ways of planning of all types of production and business activity, the improvement of kick-off meetings (methods of material incentives, increase of the employees' interest), and rationalization of accounting system (Govindarajan & Trimble, 2005). Thus, the innovations of this phase can be determined as the totality of solutions, methods, and forms of the activity organization and management, which differ from the currently used in the company by their novelty for the given company. The organizational and managerial innovations are associated primarily with their low capital intensity in relation to maximum efficiency and quick implementation, and they can be presented in the company in two main forms (Dillon et. al. 2005):

- the organizational innovations do not have relation to technological innovations, the target goal of which is the improvement of activity and use of the corresponding labor resources and company property;
- the organizational innovations, cause by technological innovations.

The American researchers offer to express the general of the acceptance of the organizational and managerial innovation by the companies in the following way (Anderson & Markides, 2007):

$$Ch = f(L, S, K) \quad (7)$$

where Ch – the acceptance of innovations by the companies;

L – personality and psychological characteristics of members of the organization;

S – the characteristic of organizational structure (structural changes);

K – the characteristic of environmental and inter-organizational relationships (contextual changes).

This formula shows the priority of socio-psychological innovations. Therefore, the organizational and management innovations belong to the second stage of strategic innovative development of the company.

Organizational and managerial innovations gradually replace technical and technological innovations in terms of their efficiency. The innovations of this phase should be adopted in the company in the form of modern management concepts. The principles of these concepts and problems of their introduction are highlighted in the work (Ahmed & Shepherd, 2010), while the directions of their use in the innovative development of the company, depending on the objective of the innovation development and implementation of the corresponding concept are depicted in the work (Prince et. al., 2014).

The next marketing phase of the innovation strategy formation takes place through marketing innovations and includes the use of the latest technology and ideas regarding the creation of new products, services, and technologies, contributing to the company's goal achievement in the best way. Marketing innovations run ahead of other types of innovations through their diversity, which is explained by their relatively small cost on one hand and variability on the other hand. The marketing innovation is an introduction of a new method into production, including considerable changes in the design or package of the product, its stocking up, an promotion on the market or assignment of a new price, targeted at satisfaction of the consumer's needs, development of new markets or gaining new positions for the company's products on the market to increase its sales results.

Among the most widespread types of marketing innovations, one can distinguish the following ones (Schindehutte & Morris, 2009): the use of new methods of marketing researches, the choice of new strategies of the market segmentation, the change of the product portfolio policy, the modification of the product life-cycle curve, the use of a new pricing strategy on the establishment of the exit price or the discount system, and the development of new trade channels.

However, one should mention that the marketing phase of the innovation strategies formation often follows as the necessary component of the production and scientific and technological phase, especially when it comes to the development of product innovations, although it may have an isolated character, for example, efficient promotion of an old product or services.

The economic phase of the innovation strategy is characterized by the changes in the financial, accounting, and other spheres of economic activity of the company, new methods, and figures.

Economic innovations are a combination of economic resources, which are reflected in the creation of new methods, indicators, and approaches to carrying out economic activity. The creation of such innovations is connected with a chain of continuous improvements, the combination of ready-made elements, as a result of which we have an innovation in the given area.

While studying the economic innovations, Schroeder, (2013) gives the following examples of the company activity: the introduction of the new finance system to make the money motivate the efficiency of the economic activity of the given company; the system of payments, which can provide the material motivation

for all groups of employees, the growth of the labor efficiency; and the system of advanced planning.

Thus, the economic innovations, in contrast to the innovations of the above-mentioned phases, can be used for both the needs of the innovator and for sale (this peculiarity provides a link between the innovations of this phase and innovations of the engineering and manufacturing and scientific and technological phases).

The manufacturing stage is related to the production or modification of modes of manufacture and is therefore determined by the production potential of the company, which characterizes the ability to stable production activity within the framework of the chosen strategy under the condition of a complex and variable external environment. The innovations of this stage relate to all components of the organization of business and operating system and act as the innovative changes of the given manufacturing system, which transform those factors of the production, which are found at “the system entry”.

One distinguishes three main directions of innovations in the area of modern manufacturing technologies:

1. the transition from discrete (cyclic) technologies to continuous (stream) production processes regarded as the most effective ones;
2. the introduction of closed (uninterrupted) processes included in the manufacturing process as the most economically neutral ones;
3. the improvement of science-intensiveness of high and new technologies as the most desirable ones in business.

The technological innovations, included into this phase, are the eventual outcome of the innovative activity, which is obtained in the form of a new or advanced technological process. Herewith, the innovations of the manufacturing phase should not be detached from other processes of the company. In the majority of cases, they are preceded by the corresponding innovations related to organization and management, the motivation system, with the compulsory consideration of the workers' physical and social-psychological traits.

The next scientific and technical stage of formation of the innovative strategy deals with the establishment and bringing the new products, materials, services, scientific research and scientific and development innovations under the cultivation within the framework of the close relationship with global achievements of science and technique, the availability of self-engineered scientific products. The innovations of this stage can be characterized as the most drastic and risky ones.

The scientific and technical stage is related to the availability of the scientific and technical potential in the company, which is defined by the levels of development of the scientific and technical staff potential, the experimental base, nonmaterial assets that have already been completed by R&D, and scientific and technical patents. By highlighting the nomenclature updates, (Grebel, 2007) assumed that the transition from the old products to the new ones requires not only switching to the new technology of production but also its management improvement, engagement of new highly qualified workers, etc. The knowledge as a factor of new economics is a significant constituent of this phase, which integrates into the goods and services on

this stage through the introduction of an innovative product (service), the granting of licenses, concluding a cooperation in the framework of common companies or strategic alliance, and the formation of a new company (Tse, 2013).

The phases of planning and development of the company's innovation development strategy are connected to the formation of the complex plan on further innovative activity, the key feature of which is the long-term orientation on reaching the strategic goals of the company. The harmonization of the company's capabilities (in the given case, innovative potential) with its strategic goals, Wright, Amess, Weir & Girma, (2009) offer to carry out based on the four spheres, reflecting the target orientation of the organization: profit, customer support, needs of the employees, and social responsibility. The comparison of the planned innovation transformations with the goals of the company provides the possibility to give a prior evaluation of the model constituents (Table 2).

Table 2. The consistency of directions of strategic innovation development with the goals of the company

Phase name	Profit	Customer support	The needs of employees	Social accountability
Social-psychological	+	+	+	+
Institutional and management	+	+	+	–
Marketing	+	+	–	+
Economic	+	–	–	–
Manufacturing	+	–	+	–
Scientific and technical	+	–	–	+

The innovation activity is based on the product or services updating, the production of which requires creative activity and administrative control, apart from sufficient resources of marketing supportive tools. Both product and technological innovation become the reason for re-equipment, they rise the need for staff training and the adoption of changes related to the production materials. This means that one can observe particular dependence between the given phase of the innovation strategy and its previous phases.

Discussion

The modern conditions of economic management are characterized by the negative influence of crisis-like phenomena, deficiencies of their investment resources, high level of inflation, financial risks, high rates of credit interest, low level of liquidity positions, and financial responsibility. That is why the companies should regularly hold the innovation activity monitoring, determine its strong and weak points; identify opportunities and threats; shape events on the innovation potential improvement in both statistics and dynamics to provide efficient innovation development in the light of the modern economic conditions. The integration of controlling into the innovative operations management of the company lets to solve the tasks put before it.

Conclusion

Therefore, in the course of identifying the possible alternatives based on the comparison of innovative goals and potential, the phases of the innovation strategy, determined through the spheres of the innovation adoption, consider the innovation development strategy to be a combination of innovative changes in the company. That means that the generation process of the strategic innovation development of the company can be regarded as a dynamic array of six interconnected phases, which logically come out from each other and are characterized by a stable inverse effect both on the previous stages and on their totality.

The given sequence of phases provides the possibility to cover the most racial components of the company's activity, related to: the development and implementation of the development strategy and behavior within the external environment, development and implementation of the strategy in regard to the products produced by the company, development and implementation of a strategy related to the company's personnel, and development and implementation of a strategy regarding the determined goals of the company. The formation of the structure for the innovation development strategy makes it possible to evaluate the size of changes in the course of transition from one alternative to another one. At the same time, if the main choice is done, then the only thing one has to do is to specify and control its implementation in such a way, that he could achieve the desired goal soon. The offered system of phases allows people to cover the transitional stages of the life cycle of innovations in the chain science – technique – production – consumption, the compliance to which might be taken into account in the course of formation of the innovation strategy as the organization-management support. The comparison to the life cycle provides an opportunity to take into account the combination of interests and conciliate the decisions of strategic, scientific and technical, marketing, manufacturing, and other directions to ensure the coordination and action efficiency.

References

- Afuah, A. (2009). *Strategic Innovation: New Game Strategies for Competitive Advantage*. Routledge.
- Ahmed, P.K. & Shepherd, C.D. (2010). *Innovation Management: Context, Strategies, Systems and Processes*. 1st ed. Harlow: Pearson Education
- Aiman-Smith, L., Goodrich, N., Roberts, D., & Scinta, J. (2005). "Assessing your organization's potential for value innovation". *Research Technology Management* 48(2): 37-42.
- Anderson, J., & Markides, C. (2007). "Strategic innovation at the base of the pyramid". *MIT Sloan Management Review* 49(1): 1-18.
- Balsano, T. J., Goodrich, N. E., Leek, R. K., & et al. (2008). Identify your innovation enablers and inhibitors. *Research technology management*.
- Burgelman, R.A., Christensen, C.M. & Wheelwright, S.C. (2004). *Strategic Management of Technology and Innovation*. 4th ed. Singapore: McGraw Hill.
- Dillon, T. A., Lee, R. K., & Matheson, D. (2005). "Value Innovation: Passport to wealth creation". *Research Technology Management* (48): 22-36.
- Drucker, P. F. (1985). *Innovation and Entrepreneurship*. London: Hinemann.
- Freeman, C. (1987). *Technology and Economic Performance: Lessons from Japan*. London: Pinter.

- Govindarajan, V., & Trimble, C. (2005). *10 Rules for Strategic Innovators*. Harvard University Press.
- Johnston Jr., R. E., & J. Douglas, B. (2013). *The Power of Strategy Innovation: A New Way of Linking Creativity and Strategic Planning to Discover Great Business Opportunities*. New York: American Management Association.
- Grebel T., (2007). Neo-Schumpeterian perspectives in entrepreneurs research [in:] Hanush, H. and Pyka, A., *Elgar Companion to Neo-Schumpeterian Economics*. Edward Elgar: Cheltenham
- Robben, H., & Roks, E. (2010). “Strategic Innovation Decisions: What You Foresee Is Not What You Get”. *Journal of Product Innovation Management* 27(6): 840-855.
- Schindehutte, & Morris. (2009). “Advancing Strategic Entrepreneurship Research: The Role of Complexity Science in Shifting the Paradigm”. *Entrepreneurship Theory and Practice* 33(1): 241-276.
- Schroeder, H. (2013). “Strategic Innovation for Business Performance: The Art and Science of Transformation”. *Technology Innovation Management Review*, September 7-8: 6-12.
- Schumpeter, J.A. (1934). “The theory of economic development: an inquiry into profits, capital, credit, interest and the business cycle”. *Harvard Economic Studies*. Vol. 46. Harvard College. Cambridge: MA.
- Sullivan, B. (2010). “Competition and Beyond: Problems and Attention Allocation in the Organizational Rulemaking Process”. *Organization Science* 21(2): 432-450.
- Talke, K., Kock, A., & Salomo, S. (2011). “Top Management Team Diversity and Strategic Innovation Orientation: The Relationship and Consequences for Innovativeness and Performance”. *Product Development & Management Association* 28(6): 819-832.
- Tidd, J. & Bessant, J. (2014). *Strategic Innovation Management*. West Sussex: John Wiley&Sons.
- Tse, T. 2013. “Paradox resolution: A means to achieve strategic innovation”. *European Management Journal* 31(6): 682-696.
- Wischnevsky, & Damanpour. (2008). “Radical strategic and structural change: occurrence, antecedents and consequences”. *International Journal of Technology Management* 44(1/2): 53-80.
- Wright, Amess, Weir, & Girma. (2009). “Private Equity and Corporate Governance: Retrospect and Prospect”. *Corporate Governance: An International Review* 17(3): 353-375.
- Ye, Marina, & Singh. (2007). “Strategic Change Implementation and Performance Loss in the Front Lines”. *Journal of Marketing* 71(4): 156-171.



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