

The Theoretical Fundamentals and Methodical Approaches to Economic Safety Assessment of Innovations to Foreign Markets

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Abstract: *It is widely perceived that expanding to foreign markets creates additional opportunities to enterprise. But in this strategic decision-making process it is crucial to be conscious of additional unique threats that are inherent in foreign market entry. Inappropriate innovation can significantly deteriorate enterprise safety and seriously affect its wellbeing; the absence of innovation activity also can threaten the enterprise safety. The present work is aimed at examining the interconnectivity of innovations and economic safety of an enterprise activity on foreign, primary new markets and on this ground developing methodic of assessment the economic safety of innovation activity.*

It is proposed to distinguish two components of an enterprise economic safety: the static component (economic safety of enterprise state) and the dynamic component (economic safety of enterprise activity). Following this differentiation special assessment methodic are proposed. It is stated that while making decision on promoting to external markets it is reasonable to estimate the level of economic safety of enterprise initial state, of innovation adoption and of enterprise final state.

As conclusion the complex of specific requirements to management to ensure the target level of economic safety of promoting new product to a foreign market is developed and proposed in the paper.

Keywords: *economic safety of enterprise, innovation, foreign market*

1. INTRODUCTION

In modern globalized competition leadership are gained by technologically advanced enterprises, distinguishing feature of which is the ability to generate systematic innovations based on the unique knowledge. This is justified by paramount impact of intellectual capacity and implementation of scientific achievements on performance of any business.

The importance of innovation processes for an enterprise survival is emphasized by Porter (2008), who underlined that the only way to retain competitive advantages is to improve them uninterruptedly. For Porter the competitiveness of economic system is determined not by the maximum effectiveness of management but by the ability to modernize and successfully commercialize new knowledge.

Drucker (1985) characterized knowledge as the key resource of modern international economy.

Innovative process has obvious similarities with Schumpeter's (1911) ideas of seeing and doing 'things' differently. Seeing and doing things differently – i.e. innovation – creates and destroys existing structures causing continuous economic and social progress. So, for Schumpeter continuous innovation is the force required for long-term economic growth.

Along with the recognition of the necessity of innovations for sustainable development of enterprises practitioners should constantly be aware, that risk and uncertainty is inherent in innovation process, so the comprehensive management system for ensuring safety and sustainability of innovations should be implemented.

Due to its significance innovation has been a rather frequent theme in managerial studies over the past decades and a great deal of work has been done in order to understand how risk and uncertainty influence the decision making on innovation (Rogers 2003, Vargas-Hernandez et al. 2010, Yingchun Guo, 2012, Jalonen, 2012). Nonetheless, it seems that there is a lack of research that focuses exclusively and in detail on assessment of economic safety of innovative activities.

So, the objective of this paper is to increase the understanding of the interconnectivity of innovations and economic safety of an enterprise activity and to propose methodical approaches to assessment the level of economic safety of innovative activities on foreign markets.

2. INNOVATION AND ECONOMIC SAFETY

According to the Oxford Dictionary of Economics 'innovation refers to the economic application of a new idea.

Many scholars, among which Koshkin (2000), Prigogine (1987) consider the essence of innovation as the set of organizational and economic changes in production system. For Yerokhin and Laricheva (2004) innovation - is the

complex, creative, risky process of development, implementation and commercialization of products (services) with better features for any sphere of society in a competitive market; this is the process of sequential transformation of creative idea into product and launching it to market using all available resources of the enterprise. According to Afuah (2003) innovation is the employing of new knowledge to provide a new product or service that the customers want. Oslo Manual (OECD, 2005) defines innovation as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.

Also number of researchers (Zavlin et al. 2004, Kokurin, 2001) interpret innovation as the final result of introduction of new technology, developing new markets, implementing of new organizational forms. It is considered that this final result is embodied in new or improved process or product launched on the market (Yochna et al. 2007). Sokolov (1997) argues that innovation is the end result of the creation and development of novelty that meets specific social needs, aims on achievement of better effect or enhancing an object of management.

Thus, among scholars at least two main positions can be distinguished: innovation as the process of generation and commercialization of novelty and innovation as the result of these processes.

The review of modern conceptual vision of innovation can arouse the following conclusions. Firstly, the criterion separating innovation from novelty is commercialization. Secondly, distinguishing feature of innovation is that the principal means for progress is the commercialization of knowledge. Thirdly, innovation has implication both in dynamic (innovation as the process), and in static (innovation as the result). So, while evaluating innovation it is reasonable to assess an enterprise performance in dynamic (before and after innovation) and to determine the impact of discrete innovation into whole innovation activity of an enterprise. An innovation may be considered as successful if not only target enterprise performance is achieved but also during the process of innovation the fund is accumulated, necessary to start (and probably successfully finish) the process of subsequent innovation. Only systematic implementation of successful innovations is pledge of enterprise wellbeing and success. As innovation at the most abstracted level can be regarded as an attempt to better change; the only way for enterprise to survive and success in constantly changing environment is to change to better. But every change entails uncertainty and risk.

Due to a lack of comprehensive, unambiguous, consistent and stable set of values, to a lack of perfect and complete information, and to constraints imposed by historicity, most, if not all, decisions in organizations are made in uncertainty (Hurst 1982). Instability, risk and uncertainty of environment call the concept of enterprise safety into being.

For today among scholars there is no strong agreement upon the definition "enterprise safety". Frequently it is regarded as ability to withstand adverse external factors, as capacity to provide stability and adaptability of an enterprise in unfavorable environment and marketing conditions (Lysenko et al. 2002, Muntian 1999). Stryzhychenko (2003) sees economic safety of an enterprise as "the creation of such conditions under which protection of economic interests of enterprises against different types of threats is ensured". Kovalev (1998) defines economic safety of an enterprise as "security of its operations against negative effects of environment, as well as ability to eliminate threats and to adapt to existing conditions that do not impact negatively on its activities". This approach is also supported by other scholars, but the term "security" that is central in such definitions remains uncertain.

Tambovtsev (1994) connects economic safety of an enterprise to opportunities to achieve its objectives and defines it as a condition in which the probability of unfavorable changes is below the set threshold values. This definition assumes existence of immutable environment; such assumption contradicts reality, as one of the features of the environment is its variability. Setting the acceptable level of unfavorable changes is also quite complicated for particular company, because in most cases is subjective cannot be scientifically grounded.

Numerous researches devote their papers to problems of enhancing an enterprise performance and thus, in sphere of economic safety focus on efficient use of resources.

Kozlyuk (2005) states that "economic safety is balanced and continuous development, which is achieved by the deployment of all resources and business opportunities and is guaranteed by their most effective application in purpose of sustainable functioning and dynamic technology and social development and prevention of internal and external threats". Oleynikov (2004) defines economic safety of an enterprise as "the state of the most effective deployment of corporate resources to prevent threats and ensure stable operation of the business now and in the future" and distinguishes seven components of economic safety: financial, intellectual, technical and technological, political, legal, environmental, informational, force component. To assess the general level of economic safety adequately the influence of each component is determined.

In the most general sense, safety is a condition without threats. Threat is often regarded as the cause of undesirable state. If define threat as objectively existing possibility of negative impact on a social organism, which results in any loss, damage, worsening of performance or development, the rationality of distinguishing two aspects of safety seems to be grounded. In our opinion, it is important to distinguish between the economic safety of an enterprise state (the security against negative influence of external and internal environmental factors) and economic safety of an enterprise activity (the ability to realize its economic interests), i.e. the concept of "enterprise economic safety" should be defined on the basis of distinguishing the dynamic and static components.

In a narrow sense economic safety of enterprise is the absence of significant threats to economic goals of an enterprise. Such narrow interpretation limits the applied researches, as assumes a situation of complete absence of threats.

However, the absence of threats is the only idealistic assumption, the theoretical abstraction from the realities which may be used to reveal the deep essence of the phenomenon being studied. In order to develop a mechanism of economic safety management that can be employed in practice a researcher should proceed from the fact that the interaction of enterprise with entities of internal and external environment always cause contradictions which lead to occurrence of threats.

Grounded on this, it may be proposed to consider economic safety of enterprise in a wide sense as is the economic position of an enterprise, characterized by certainty, firstly, of existence, integrity and security of businesses against negative influence of external and internal environment (economic safety of enterprise state) and, secondly, of the possibility to realize its economic interests (economic safety enterprise activity). By this approach the unity of static and dynamic components of the concept of enterprise economic safety that are interconnected and interdependent is achieved.

Economic safety of enterprise state may be defined as the internal conditions of an enterprise, which are characterized by integrity and security of an enterprise against negative impact of internal factors and changes in external business environment. Sustainability, integrity, independence and safety against undesirable external and internal changes characterize economic safety of enterprise state (ESES), so ESES is the basis for achieving of goals, and therefore - embodies direct interest of enterprise and has a significant impact on economic safety of enterprise activity.

Economic safety of enterprise activity (ESEA) may be defined as the market conditions, in which opportunities to realize economic interests of enterprise objectively exist and are apprehended by management of this enterprise. While taking opportunities enterprise interacts with various entities of external and internal environment, thus ESEA also characterizes safety of relationships between enterprise and numerous stakeholders in business environment.

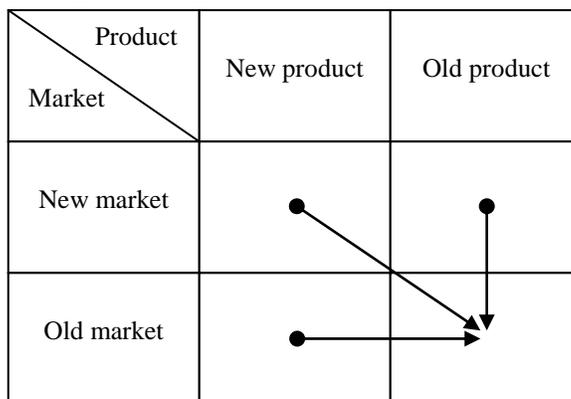
We consider it as necessary to emphasize that the static component of economic safety, ESES, is not immutable since the factors that determine enterprise position are dynamic. The assessment of ESES characterizes the situation at particular time point. The assessment of the dynamic component of economic safety, ESEA, represents the economic safety in a period of assessment and for a subsequent period and reflects expectation of changes in interests of stakeholders, which may have an impact on the ability of enterprise to realize its own economic interests.

For creating effective economic safety management in practice it is essential to formulate interests of the enterprise, to determine the set of stakeholders and to reveal contradictions and primary deep-rooted causes of possible threats.

Entrepreneurial activity is inherently associated with innovation and the ground of business success is successful innovation. Innovation has three main features: the scientific and technical novelty, industrial applicability and commercial feasibility. Commercialization recasts invention into economic necessity, thus performs innovation as a source of income. Duchov (1997) emphasizes that it is receiving by enterprise additional income that forces its competitors to use legal, semi-legal and illegal methods of economic intelligence. These actions are aimed at obtaining information on innovation - the source of super profits - which are trade secrets and is subject to protection. Diffusion of innovations leads to loss of competitive advantages, thus threatens interests of enterprise. So it seems that existence of innovation is one of the main causes of threats.

But it should be noted that despite the above, the absence of innovation is even greater threat to enterprise economic safety. Employing company strategy matrix of "Boston Consulting Group" "product-market" (Kotler, 2002) it is possible to demonstrate (Figure 1), that in case an enterprise does not implement innovations, it inevitably by influence of changes in environment and market conditions moves to the quadrant, which is characterized as the least favorable strategic position in terms of profit, the quadrant "old market – old product".

Figure 1: The directions of changes in case of absence of innovation



3. ASSESSMENT

Under crisis as in local as global market, the problem of increasing business profitability gains especial relevancy; rational and effective employment of business recourses ensures survival and maintenance of economic potential of enterprise, which can be considered as the ground for enterprise resistance against external and internal threats.

Following approach of distinguishing between static and dynamic components of economic security, it seems that

evaluation of ESES is more developed by scholars, and in this different assessment procedures and techniques are proposed (Muntian 1999, Oleynikov 2004).

The common feature of such proposals is that the level of economic safety is characterized by set of indices; the majority of these indices reflects efficiency of employing material and finance resources. This is really justified by the idea, that financial result of business significantly influences the position of enterprise. However, the financial result also depends on the positive and negative changes in internal and external environments, is influenced by potential and real threats, and this is not considered in existing methods.

Thus, while evaluating the economic safety it is necessary to supplement calculating the effective employment of resources by identifying opportunities for businesses, i.e. to measure the level of economic safety of enterprise activity. Comprehensive assessment of economic safety of enterprise enables to create and implement the management system, which ensure not only good results of financial and economic activity but also continuous improvement of its effectiveness by developing and implementing management measures to solve the problems (based on estimates of ESES) and to prevent their occurrence (based on estimates of ESEA).

Therefore, as a measure of economic safety assessment it is proposed to employ integral criterion (CES), which has two components and can be represented as:

$$CES = f(S, A) \quad (1)$$

In equation 1 S is the integrated level of economic safety of enterprise state and A is the integrated level of economic safety of enterprise activity.

Certainty about the existence, integrity and security of enterprise against negative influence of factors external and internal environment are based on availability of necessary business resources in case their effective employment, therefore, assessment of ESES should be carried per financial, material, labor and information resources.

The stages of current assessment of the level of ESES can be as follows:

- 1) computing selected indices of financial, material, labor and information resources efficiency;
- 2) calculating ratio of selected indices;
- 3) determination the level of ESES per each type of resources;
- 4) determination the integrated level of ESES.

Under the proposed approach it is assumed that the integrated level of ESES can vary in the range $S = [0, 1]$, it is supposed that ESES is as high as S is close to 1. However, the forthcoming of estimated level of ESES to limit (0 or 1) reflects not most dangerous or absolute safe condition, but the minimum (maximum) level of ESES among those prevailing in prior periods and employed as information base for calculations. For reliable prediction of ESES it is not enough to ground on history changes, it is essential to take onto consideration relationship between ESES and ESEA in the previous period.

The level of economic safety of the enterprise activity (A_{i_n}) per i_n stockholder threats can be described as

$$A_{i_n} = f(P_{i_n}; V_{i_n}) \quad (2)$$

In equation 2 P_{i_n} is probability of realization of threats from i_n stockholder and V_{i_n} is impact of threats from i_n stockholder.

Availability of quantitative data on the implications of economic threats in past periods enables employing traditional statistical methods for forecasting threats occurrence. However, due to high variability of environment the most valuable forecast is one that is based on threats anticipation. Threats forestallment is the main goal of assessment of economic safety of enterprise activity.

Along with probability important factor is the impact of threats to economic safety of the enterprise. With the assumption that the business results are influenced by economic threat, the impact of threats V_{i_n} reflects the relative change in performance:

$$V_{i_n} = \frac{RB_{i_n} - R_{i_n}}{RB_{i_n}} \quad (3)$$

In equation 3 RB_{i_n} is the financial result of business in case of absence of threats from i_n stockholder, while R_{i_n} is the financial result of business in case of occurrence of threats from i_n stockholder. The financial result for this purpose can be measured as it is selected by enterprise management for strategic decision-making (the absolute amount of net income, return on invested capital, etc)

To increase the efficiency of diagnosis, it is advisable to select the factors that determine impact of certain economic threat on the economic safety of enterprise. Thus, the impact of threats from suppliers of resources and services may depend on: supplier share in total resources and services employed by enterprise to achieve the target performance, the degree of substitutability of the resource or service obtained from a supplier, the additional costs of replacement, etc. Specifying factors is conducted by expert group in the process of diagnosing the economic safety of the enterprise. The set of stockholders may include consumers, suppliers, competitors, public authorities, mass media and other contact parties.

While grounding managerial decision on promoting on foreign market it is rational and useful to assess economic safety of enterprise from following angles:

- 1) the level of economic safety of enterprise initial state (which in general is assessed by level of selected financial and economic indices before starting the innovation process and level of potential threats in case of rejecting to innovate);
- 2) the level of economic safety of adoption of innovation (which in general is characterized by ability to resist negative external factors (including uninformed customers) and rejection of personnel to innovation)
- 3) the level of economic safety of enterprise final state (which in general is assessed by the level ESES adjusted by potential threats arisen in case of failing to obtain proper for specific market innovative product or to introduce obtained innovative product to specific market appropriately).

4. MANAGEMENT

To resist factors that restrain foreign economic operations the management of an enterprise should contain the special subsystem dealing with foreign markets threats and ensuring the proper level of economic safety of innovations. The construction of economic safety management of innovative activity should be based on following:

- 1) innovation cost management should be built on one hand as a subsystem of cost management and on the other hand as an informational subsystem of strategic accounting management;
- 2) clear sustainable links between all elements of the system of economic safety management of innovative activity should be established and employed in order to perform all functions of management;
- 3) the system should be featured by the ability to self-development and continuous monitoring of threats from external and internal environment of enterprise;
- 4) the system should dispose of response means to optimize the resources potential of enterprise and in such way to ensure systematic innovative activity on ground of target level of enterprise economic safety.

However, it should be noted that the crucial requirement to cost management of innovative activity as the part of economic safety management system is ensuring innovation decision making on the criterion that total cost of creation, selection, incubation and implementation of an innovation may be less than total cost of innovative product, as an asset generated during innovative process. This is the main but not the only limitation in the construction of optimization model of cost management.

Another limitation is the resource limitation, which is the requirement on employing material, finance, labour and information resources in the process of commercialization of innovations. Resources utilization entails expenses (accrued in the period of consumption and cause decrease in income) and costs (recognized as assets and reported in balance sheet).

In order to elaborate the model of optimization of innovative activity cost it is proposed to find out solutions for the following tasks:

- 1) scientifically grounded selection of integral index to economic effect gained from implementation of innovation in static and dynamic components;
- 2) formulation the system of limitations, selected during the innovation budgeting regarding possibilities of employing material, finance, labour and information resources on the ground of criterion function of effect index maximization;
- 3) completing the system of limitations by requirements on possibilities of resource employing for effective response to external and internal threats occurred during the innovation implementation.

The target function in the model of optimization of innovative activity cost is defined in accordance to enterprise strategic goals by the level of economic safety of adoption of innovation or by the level of economic safety of enterprise final state.

Following the proposed approach in practice requires establishing the adequate information base which would support prompt decision-making in frameworks of economic safety management of innovative activity.

5. CONCLUSION

To resist complex of factors that restrains foreign economic operations and confines external marketing management of an enterprise should contain the special subsystem dealing with foreign markets threats and ensuring the prompt proper level of economic safety of foreign activities. The development and scientific justification of the structure, components, goals and procedures of such subsystem is started by disclosing the nature of links between safety and innovations.

Innovations and economic safety are closely interrelated: systematic successful innovative activity ensures economic safety of enterprise, while economic safety provides enterprise with opportunities for further innovations. To ground managerial decision upon launching new product to foreign market it is reasonable to assess the level of economic safety of enterprise state and the level of economic safety of enterprise activity. While the first index reflect achieved position of enterprise, the second one gives ground to forecast changes in interests of numerous stakeholders (among them consumers, suppliers, competitors, public authorities and mass media are of high priority) and to prevent potential threats.

To ensure efficient and effective management innovative activity which meets target level of enterprise economic safety it is necessary:

- 1) to introduce special assessment methodic of economic safety of enterprise and managerial subsystem that is able to prevent internal and external threats and create opportunities for systematic innovations;

- 2) to create of innovative cost management within the overall system of economic safety management;
- 3) to consolidate general management and accounting system into one flexible management information system;
- 4) to develop an adequate system of strategic management accounting, that provides internal decision makers with appropriate operational information relevant for implementing innovations.

Creation of subsystem of economic safety management besides considered interrelation between economic safety and innovation also requires distinguishing different types of economic safety, which can be done on ground of a wide array of statistical data and is one of the important problems for following researches. Furthermore, this research was conducted with high level of generalization, so in the future some researches should be carried out in various industries to observe the differences among the industries.

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