

Theoretical Aspects of Creating the Business Models for Supply Chain Process of Industrial Enterprises

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Abstract- Creating the business models for supply chain process is the subject of modern scientific research in the field of strategic planning and management of the enterprise. Some theoretical and practical aspects have not yet received a comprehensive scientific substantiation. General problem of enterprise management is traditionally analyzed in the researches, and business modeling is not fully investigated. The current state of the economy and peculiarities of its development, as well as the transformational nature of the Russian economy, show that the most important theoretical and practical aspects, which require scientific attention and development, analysis and systematization, are the theoretical provisions of business modeling concept for supply chain process; clarification of the term "business model" for supply chain process of an industrial enterprise; definition of the main elements and substantiation of the technology of business model formation; systematization and generalization of modern methods of strategic analysis; formation of an integrated system for assessment the effectiveness of the enterprise's business model for supply chain process. The issues of strategic development of the enterprise always arouse a great interest among researchers. Today, a significant number of business models have been created for the development of enterprises of various industry structures. The purpose of the article is to systematize the information about the creation of business models for supply chain process of industrial enterprises, to consider the features of the models use at the present stage. Scientific and theoretical basis of the research was the methods of analysis and synthesis, scientific abstraction, the use of quantitative and qualitative assessment methods, with the help of which the categories of the concept business model for the supply chain process were defined. Endogenous and exogenous factors, influencing the functioning of enterprises' business models were identified. The article deals with the conceptual issues of the business model for the supply chain process formation, in particular, the essence and peculiarities of modern business models, as well as management approaches to the processes of development of enterprise's business model for supply chain process.

Keywords: *business model, strategic development, industrial enterprise, supply chain process, creation.*

1. Introduction

Numerous scientific works of domestic and foreign authors are devoted to the issues of formation of the business model for supply chain process of the manufacturer. The works of such foreign authors as [1], [2], [3], [4], [5], [6], [7] made a great scientific contribution to the solution of the problems of business development in recent times, and received wide scientific and research importance. Modern trends in the development of economic environment have led to significant change in the views of scientists and practitioners on the company management. Besides, the emergence of a new direction is determined by the integrated use of methodological approaches and tools of financial, economic, and strategic analysis, as well as the impact of such factors as creativity, dynamism, non-standard ideas of further business development.

2. Methodology

The methods and conditions for the formation of business models for supply chain process of enterprises were determined in the works of these economists. They are the scientific and theoretical basis for more fundamental research. The article uses the following methods: scientific abstraction, which allows to reveal the essence of business modeling as an economic phenomenon. Moreover, the methods of analysis and synthesis, which were used in the process of consideration and identification of factors, affecting the formation of business model for supply chain process, as well as the finding of relations between the elements, their interaction, the contradictions in the behavior of enterprises, operating under conditions of external determinants were used.

3. Research results

The result of the latest scientific research and practical approbations in this field was the formation of modern management concept in western scientific thought, based on the development and implementation of successful business models of the company. The business model for supply chain process is considered as a formalized scheme for the functioning of the company's business. Taking into account dynamic development and tendencies of business intellectualization, the role of

innovation component in increasing the competitiveness of the enterprise, today we should talk about the business model of enterprise as a general concept, covering all aspects of company management. In the opinion of many authors, it is expedient to interpret the business model for the supply chain process of the enterprise as a set of elements. Besides, characterize the logic of its functioning, fundamentally different from the competitors, based on the use of key competences, for the most effective allocation of strategic resources in the system of business processes, in order to create a product or service.

Theoretically, it is necessary to determine the differences between business model and classical business strategies, and other tools for improvement the efficiency of the enterprise. The concept of business modeling allows to avoid the firmly determined lines of company development, which are characteristic of classical strategies. The logic of the company's functioning is not just a consistent reaction to the change of external factors, but the predictions of these changes, the modeling of a new market situation and direction of strategic resources for transformation of an existing business model, in order to achieve its maximum compliance with the future business environment [8]. The analysis of the term "business model" suggests its consideration as an organization of the company's business, through the interaction with external and internal determinants, as well as the direction of company's movement and its strategy, setting the guidelines for the formation and development. The business model is a reflection of direction, chosen by the company management, to achieve the set goals. Each business model for the supply chain process should characterize the main aspects of the business of any enterprise. First of all, it has to form an idea of the consumer value, which the company offers. Next, it should determine the process and risks during the creation of this consumer value. And also it has to identify the main areas of implementation, management of revenues and costs, that is, to form an idea of the strategic development of the enterprise. Depending on the specifics of the company's activities, business models are classified as follows:

1) Collective business models for supply chain process are business systems, organizations or associations,

usually consisting of relatively large numbers of enterprises, traders or professionals in the same or related field of activity, which unites resources, gives information or provides other benefits to its members. For example, technology parks and business incubators, or a high-tech campus, which provides joint resources for firms, located on its territory, and, in addition, it tends to create an innovative community among these firms and their employees.

2) Reduction of the intermediary model is the removal of mediators in the supply chain: "elimination of intermediary". Instead of going through traditional distribution channels (for example, distributor, wholesaler, broker or agent), companies deal with each customer directly, for example, via the Internet.

3) Franchise. Franchising is the practice of using a successful business model of another firm. For a franchisor, franchise is an alternative for the creation of "chain stores" for distribution of goods, and to avoid investment and liability along the chain.

4) Trade business model. In trade model, the company provides services/ intangible products, and the seller takes responsibility for them: for example, he or she buys the products in advance, and then sells them to the client.

5) Partner business model. In this model, the company offers some incentives for other branches, which can redirect customers to them.

6) Production business model. In this business model, the manufacturer of goods offers the products to the market. Ownership of goods and services refers to the characteristics of the production type, and, consequently, revenue is direct [9].

The opportunities for adaptation, further improvement of certain elements of the business model for supply chain process, based on the system of strategies and external constraints (in particular, competitive ones) should be also referred to the advantages of the modular approach. In addition, the target components of modular approach are oriented to the fundamentally important production and commercial systems, in accordance with the existing problems and characteristics of various types of entrepreneurial structures.



Бизнес-модель для процесса цепочки поставок	Business model for supply chain process
Природно-экологический модуль	Natural-ecological module
Инновационно-инвестиционный модуль	Innovation-investment module
Адаптивный модуль	Adaptive module
Маркетинговый модуль	Marketing module

Figure 1 - Modular approach to the formation of business model for supply chain process [10]

Each of the above modules represents a combination of external and internal factors, influencing the development of the industrial enterprise. The natural-ecological factor is determined by a sharp decrease in the level of natural resources, an increase in the lack of access to the necessary primary resources. In such conditions, the implementation of innovation activities should be performed in conditions of resource saving and reduction of impact on nature. A natural and ecological aspect includes the whole spectrum of external natural factors, as well as economic ones, connected with the change in the dynamics of resources cost in the international market, and also includes the demographic factor. The last factor determines the overall level of end consumers and labour resources, their costs, due to the population changes and

demographic impact on the able-bodied population, the change in the structure of the population. Migration processes also have a negative influence on innovative processes: qualified and competitive talented people leave for the developed countries. Substitution occurs due to the immigration of people from the CIS countries, inferior in terms of education and qualifications. The use of business modelling involves the implementation of comprehensive economic, analytical, graphic and software justification of selection of the most effective option for strategic development of the company, in particular, the distinction between the stages of formation and development of business model for supply chain process, depending on certain factors and conditions, characteristics (Figure 2) [11].

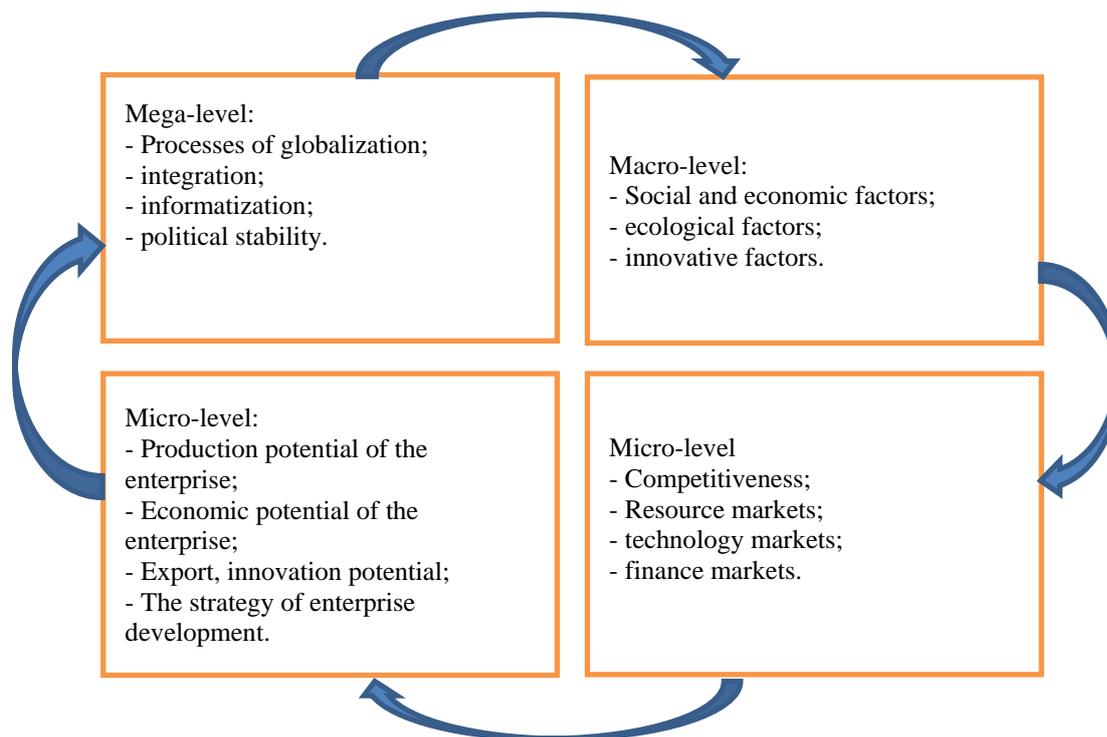


Figure 2 - Factors of strategic changes in the business model for supply chain process of industrial enterprise

The business model for supply chain process implies the influence of different factors on the development of the enterprise. First of all, it concerns mega-level factors, determining the vector of international cooperation between states, political stability, the strategies of world-level development, predetermining global concepts and trends of modern international development. Macro-level involves the analysis of the impact of national economic factors, its macroeconomic parameters of development, as well as socio-economic indicators, set by state policy. Meso-level analyzes the internal market of the

enterprises' functioning from the point of view of national economic competitiveness, its investment and innovative attractiveness, as well as the state of the separate markets, which are in interdependence and influence.

The micro-level of the business model for supply chain process analyzes the indicators of an enterprise's development, its industrial and technological potential, financial status, investment and innovation attractiveness within the industry. The basis for the modeling of the enterprise's development should be innovative

dynamics, considered in terms of synergetic approach and reflected in the nonlinear relationships of nonequilibrium processes of capital renewal, technological changes and socio-economic growth in open economic systems (business models) at micro-, meso- and macro-levels. In this context, working-out of theoretical and methodological aspects, connected with the formation and development of business models of the enterprise, self-organization and dynamic stability of regional industrial systems, technical and economic optimization of industrial enterprises, acquires an important independent significance. Various effects of organizations' development are explained by a group of models, based on the system approach. Since these models are usually created not for an exhaustive description of an organization's development, but for displaying the main aspects and characteristics of its activities, the range of such models is quite wide, and the models themselves differ in the industry points, which are made by their developers, when studying the organization.

To date, the theoretical foundations of business models for the supply chain process have been developed:

- The model of A. Downs "Driving forces of growth" (1967)
- The model of G. Lippitt and V. Schmidt (1967) "Managerial participation";
- The model of V. Norbert (1974) "Mentality of the members of the organization";
- The model of F. Liden (1975) "Functional problems";
- The model of D. Katz and R. Kahn (1978) "Organizational Structure";
- The model of I. Adizes (1979) [12] "The theory of the life cycles of an organization";

- The model of R. Quinn and K. Cameron (1983) "Integration model";

-The model of D. Miller and P. Izen (1985) [13] "Criteria for determining the stage of development of an organization."

Application of a certain model gives an opportunity to get an "instant picture of the company's concept, to predict the dynamics of its development over time". Accordingly, in the models, which best describe the various effects of the strategic development of an enterprise, the influence of the most important factors, determining the parameters of internal development, is considered. These factors are determined by the models, based on systemic approach, such as, for example, the model of "six cells" of M. Vaysbord, the model "7s" of McKinsey and the model of Berk-Litvin [14]. In the development of business models for supply chain process of enterprises, there are various approaches to the forms of spatial organization, depending on the scientific school, its priorities. The formation of the business model for supply chain process of the enterprise is performed in five stages. At first, it is necessary to determine whether the business model will correspond to the priorities of consumers, and the type of market where the enterprise will function. Further, it is necessary to create an idea of the value proposition for consumers, which is formed from a unique set of elements, capable of satisfying their needs. The third stage forms a chain of values from the totality and peculiarities of types of enterprise's activities. The next stage involves an analysis of the enterprise's competitiveness, the correlation of weak and strong sides, the analysis of competitors' behavior. The fifth step includes constant monitoring of the business model effectiveness and tracking the phases of value migration.

Table 1 – The forms of spatial organization of business models for supply chain process in industry [15]

Scientific school	The form of spatial manifestation of business model for supply chain process
American School	Industrial clusters
	Regional clusters
British School	Transnational industrial corporations
	Value chains in industry
	Network forms of organization in industry
Scandinavian school	National innovative systems
	Regional innovative systems
Russian school	Development of certain aspects of innovative systems

Creation of business model for supply chain process using the following algorithm forms a successful mechanism for its operation. At the same time, it is necessary to ensure the viability of business model, taking into account the combination of internal factors

and adaptation to the changing conditions of the environment. The business model for supply chain process of an enterprise should consist of interacting subsystems, which can be reflected as components of business model (Figure 3).

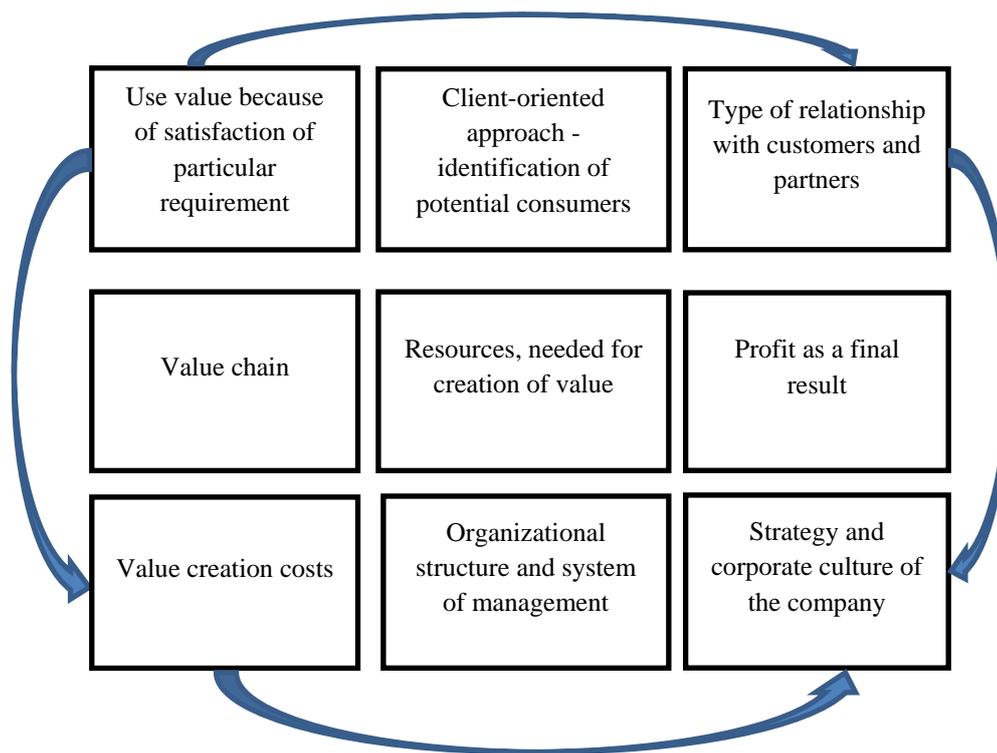


Figure 3 - Structural elements of business model for supply chain process [16]

The specifics of the industry (interaction with end consumers and sale of goods/services of other enterprises) necessitate the creation of such business model, which will allow to make stable partnership relations with suppliers and consumers, to establish the processes of production and sale, as well as to form high-quality consumer experience. Systematization of available methodological approaches to creation of business model, and consideration of development trends, promote to the formation of business model for supply chain process of an enterprise. The business model can be developed in the following order: firstly, the research of business environment: the analysis of typical business models in the field, studying the needs and behavior of key stakeholders; secondly, the proposal of a unique value, which can manifest itself in novelty, convenience, availability, improved productivity, and reduction of the risks of production of goods and services. Thirdly, the formation of a value chain, including the main and auxiliary activities of the trading company and its partners, aimed at satisfying the needs of consumers and receiving of profit. Fourthly, the maintenance of value, taking protective measures against competitors. Fifthly, regular reassessment of the current business model and its change in case of transition to the outflow phase. Sequential implementation of these steps will make it possible to form an effective business model for supply chain process of the enterprise; and continuous monitoring of changes in the industry and timely updating of business model allow to ensure stable and efficient development of the enterprise [17], [19], [21].

4. Conclusions

Any organization is an open system and essentially depends on the influence of numerous dissimilar factors. In the conditions of market constraints, business entities are looking for the opportunities to increase production and to use other aspects of economic growth, by means of creation of integrated production structures, which require the implementation of adequate methods of corporate governance within the chosen business model. The improvement of these models is characterized by systematic, process, balanced and flexible conditions for the use of economic approaches and criteria of management. Sustainability of economic activity of the enterprises should be ensured due to the consideration of progressive phenomena of the external environment, and improvement of economic management, with the aim of increasing the efficiency of the enterprise and its continuous development. The practical importance of the concept of the enterprise's business model is in the creation of necessary conditions for the innovative development of industrial structures in the region, formation of the strategy for adaptation of industrial enterprises of a particular region to an uncertain socio-economic environment and, consequently, working-out the main provisions for the strategy of development of the regional industrial complex. Each business model for supply chain process has its own key business processes and value drivers. At manufacturing enterprises of various industries, business models for supply chain process, oriented on innovative and technical solutions, are used the most often. These enterprises produce a

significant volume of goods, and that is an effective way to increase revenue. These enterprises are characterized by flexibility and rapidity in the process of development of marketing management solutions. Often, they need to work closely with the client to achieve a good result, and that creates the value, because the deeper the marketing solution, the better it is, and the higher the "exit value" for the client.

Thus, it follows that the majority of manufacturing enterprises are customer-oriented, and the key process of their business model for supply chain process is the relationship with customers: they realize who are their main clients and investors, they correctly select the criteria for assessment, and all their decisions are oriented toward these criteria. Such enterprises require of their employees to understand the objectives of the company's policy. A dynamic business model for supply chain process is used to correlate the elements of mechanism of strategic and operational management of industrial enterprise. The solution of the problem of coordinating the elements of the process management mechanism with the strategic priorities of the industrial enterprise is possible due to the formation of a system of enterprise's indicators, which are compared with the objects of business processes, involved for the achievement of management objectives. The model should include internal factors of the organization's strategic development, such as the key competencies, achieved level of development, the state and tendencies of development, and external factors, having not only economic, but also socially-psychological nature.

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