

Business Model Development of a Traditional Industrial Enterprise

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Suggested Citation:

Orekhova, V. Svetlana (2016). Business Model Development of a Traditional Industrial Enterprise, *Journal of Advanced Research in Law and Economics*, (Volume VII, Winter), 7(21): 1798 – 1811, DOI: [10.14505/jarle.v7.7\(21\).27](https://doi.org/10.14505/jarle.v7.7(21).27). Available from: <http://journals.aserspublishing.eu/jarle/issue/archive>.

Article's History:

Received September, 2016; Revised November, 2016; Published December, 2016.

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Abstract:

The study is directed at the logical structure creation of the business model of Russian ferrous metallurgy enterprises. Based on the available approaches to the learning of the content and structure of the business model, its essential and necessary elements have been specified. The study's novelty is that the object of analysis is ferrous metallurgical enterprises with low strategic flexibility, but in the conditions of market turbulence they have to change the format of their business operation. This aspect of the work is studied through the prism of the business models transformation of industrial enterprises at different life cycle stages. The authors make a conclusion that the effective changes of business architecture is possible with the positioning of an industrial enterprise as a participant of the technological platform while creating customer values. Specifying the economic essence of the technological platform made it possible to offer a basic scheme of the business model for ferrous metallurgical enterprises.

Keywords: business model; technological platform; ferrous metallurgy; sustained competitive advantages; life cycle.

JEL Classification: L14; D46; L61.

Introduction

The issues, that the Russian economy has encountered, such as import substitution, the transition to the sixth technological order and deindustrialization, require studying the threats and opportunities for certain sectoral markets growth. The redirection of state industrial policy along with the substantial turbulence of the Russian economy has led to the situation when changing the business model is becoming a top strategic priority for most enterprises and serves as a source of obtaining sustained competitive advantages.

In recent years there has been a significant expansion of the researches range, devoted to business models. First of all, it was caused by the growth of developing markets, industries and enterprises, large-scale introduction of new technologies and their active use in communications at the end of the 20th century and the beginning of the 21st century. This fact requires the development of new methods of creation and presentation of the value to customers and other participants of market interaction (Zott *et al.* 2011). At the same time, we are observing some dichotomy in the Russian economy: on the one hand, the active use of raw materials export base prevents the formation of innovative sectors; on the other hand, without the successful traditional industries operation the implementation of full investment in new, high-tech production is impossible. One of the most difficult problems, in our opinion, is the effective transformation of existing traditional enterprises of heavy

industries because of their resources consumption, significant investments in production capacity, low strategic flexibility.

Apart from permanent market changes the enterprises themselves are transforming. To analyze the growth and quality within an enterprise the life cycle theory is used. According to this theory, enterprises start up, grow, mature and decline. The study is based on the assumption that at various life cycle stages a company will demonstrate differences in management forms and mechanisms of interaction with counterparties and institutional environment. It seems that the study of approaches to the treatment of enterprise business models, specification of the business models at different life cycle stages, the specifics analysis of the metallurgical industry operation will enable us to offer a complex logical structure of the effective business model. Therefore, the purpose of the study is framework design of the business model logical structure of traditional industrial enterprises (in the example of Russian enterprises of ferrous metallurgy).

1. Literature review

The emergence of 'business model' as an economic category is related to the work (Timmers, 1998) and focused on the search for answers to the three key questions: why does a customer have to buy anything from an enterprise?; how can an enterprise make money by selling its product?; what are the key activities that enable an enterprise to implement its plan? (Johnson *et al.* 2008).

According to (Baden-Fuler *et al.* 2015, 4-5), we can distinguish the two directions in the evolution of approaches to business models studying. The realist approach is based on certain cases of large enterprises such as Toyota, Apple, Google and others. In such works (*e.g.*, (Demi and Lecocq 2010, Lambert 2012, Thomson 1967, Amit 2001) a logical business card is installed in the strategy. Principle-conceptual approach is an attempt to create ideal business models which are later absorbed in practice (*e.g.*, the works of (Teece 2010, Chesbrough and Rosenbloom 2002). The difference of this approach from the practical one is due to the strict separation technology (format) of business operation and strategy. The technology, interpreted as a sequence of actions to achieve any result, is the business model in this case.

Following the principle-conceptual approach in our study, which enables us to go from the general to the particular, it is important to note that the key issue here is not to search for the optimal vector of development but building consumer relationships. The myth, dispelled in the course of neoinstitutional economic theory evolution, is the stability of consumer preferences and perfect rationality. This understanding predetermined the search for mechanisms to build long-term customer relationships, which is itself a separate value. In general, as it was mentioned in (Klimanov and Tretyak 2014, 107), 'the concept of 'business model' is inextricably linked with the problems of inter-firm interaction, since a value is created in collaboration with numerous enterprises cooperating on the market'.

Depending on the purposes of the study, the authors interpret the category of business models as:

- architecture of products, services and information flows, including a description of the various actors, their roles, potential benefits and sources of income (Timmers 1998); a set of variables to create a competitive advantage (Morris *et al.* 2005);
- business architecture, *i.e.*, the key elements of an enterprise's business and inter-element relations (Shirokova 2011, 107);
- a story that explains how the organization works (Magretta 2002);
- the enterprise's logic (Osterwalder *et al.* 2005) and its strategic choice to create and value to use in the network (Shafe *et al.* 2005);
- an interaction structure of a focal company with customers (Magretta 2002, Klimanov and Tretyak 2014) and counterparties in general (Zott and Amit 2008);
- the process of creating, delivering and assigning values (Teece 2010), supposing certain content and structure of the transactions (Amit and Zott 2001; Guo *et al.* 2013) and the presence of certain organization capabilities to interact and exchange in this process (Nenonen and Storbacka, 2010; Doz and Kosonen 2010);
- a set of tools for the study of business logic, evaluation of the situation, actions and implementation of innovations (Cavalcante *et al.* 2011, Hajiheydar and Zarei 2012), and assets management (Sainio *et al.* 2011);
- the connection of technical capacity with the implementation of the economic value (Chesbrough and Rosenbloom 2002).

Among all the studies concerning business models learning the most famous one is the work (Osterwalder *et al.* 2010), in which the authors distinguish nine elements; they are consumers segments, value offer, distribution channels, customer relationships, income flows, key resources, key activities, key partnerships and costs structure. In (Chesbrough and Rosenbloom 2002) the major components are value offer, market segment, chain structure of value creation, structure of costs and income, position inside the chain of value creation, competitive strategy. D. Teece focuses his attention on such elements as technologies and properties of a product, consumer advantages when using this product, target market segments, income flows, and value obtaining mechanisms (Teece 2010).

The whole spectrum of available approaches, describing content foundation of a business model as economic category, enables us to distinguish its necessary elements:

- (1) a special way (architecture) of business operation, which is: the scheme of interaction with other market participants; the way to create and assign values by defining how a firm generates economic rents;
- (2) creating a value for a customer requires a set of unique resources (different from a set of other enterprises resources), capabilities and processes that cause the particular structure of costs;
- (3) the value proposition has to be established by taking into account the nature of the network of relationships in the market and an enterprise role in this network, *i.e.*, considering the balance of interests of various participants in the interaction (customers, environment, counterparties).

2. Materials and methods

The business model may occur by accident or the choice of its architecture will depend on the size of costs, access to certain resources, access to or focus on the implementation of specific innovations and technologies, market institutions and the institutional environment of the enterprise operation. The totality of the factors, that determine the final architecture of the business model, is shown in Figure 1.

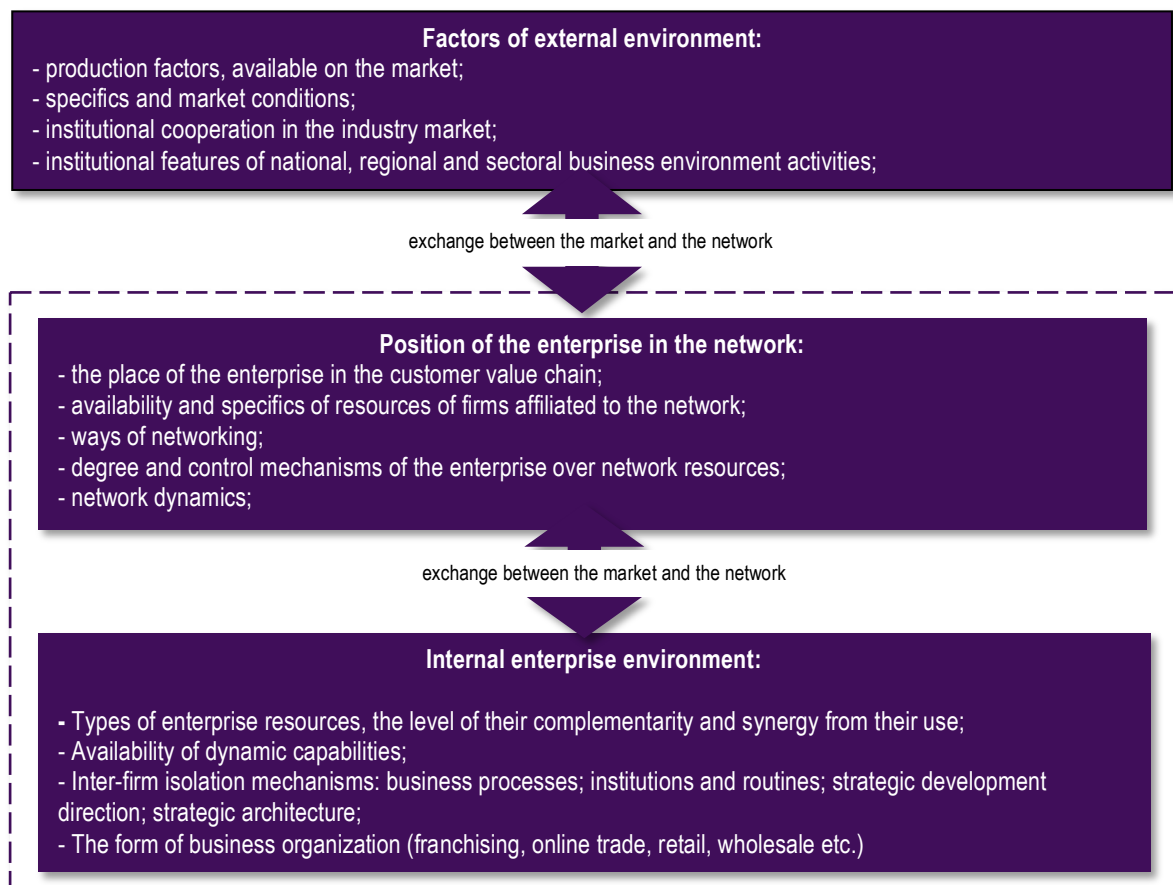


Figure 1. Factors determining the business model architecture

Empirical analysis of examples and types of business models are more focused on the analysis of enterprises operating in the field of electronic business (e.g., (Timmers 1998, Malhotra 2000, Kraemer *et al.* 2000, Dubosson-Torbay *et al.* 2002, Riccaboni *et al.* 2013, Baden-Fuller *et al.* 2015)), where traditional business processes were gradually replaced by the Internet-based technologies. Other studies have paid attention to the fast-growing high-tech markets (Colombo 2015, Sabatier *et al.* 2010, Rasmussen 2015, Sosna *et al.* 2010). At the same time, the introduction of online trading system of Internet promotion, e-services and advanced software make enterprises revise the rules of conduct in the traditional industrial markets as well.

It is important to understand that Russian enterprises of heavy industries are at the stage of their maturity due to their long operating in the market. Thus, the main task of constructing an effective business model is staying at this exact stage as long as possible or going to the transition stage. Moreover, the enterprises of heavy industries are characterized by the following important features. Among them there are:

- (1) significant resource consumption with a long payback period of investment costs;
- (2) high threshold of the minimum effective release of the industry, that is, the need for significant investment in production capacity;
- (3) low strategic flexibility due to low product differentiation;
- (4) significant binding to the markets of natural resources;
- (5) tough competition for priority of doing business on global markets;
- (6) long-term cooperation, the regularity of transactions, the creation of common values, mutual activity in the construction of the 'buyer-seller' relationship (Kusch and Smirnova 2004, 33);
- (7) interdependence of members of the network due to the likelihood of a fundamental transformation¹⁸ of the assets;
- (8) high level of complexity of inter-organizational relationships as a result of the limited number of partners and the power asymmetry;
- (9) relatively low importance of the size of transactional costs when choosing a partner.

Metallurgy is the second important sector of the Russian economy and traditionally it is a leading one in such regions as the Urals. It is also essential to understand that metallurgy is diversified by the level of development, product demand, dependence on related industries, market and industrial structure.

The global metallurgical market has been going through the sound changes in the recent years. After a long period of slow development, overcapacity and low prices, which took place from the mid of 1970s to the end of the last century, the new era of development for this industry has started. (Kondratyev 2015, 164) Since 2008 in the world market of ferrous metallurgy some great structural changes have taken place, such as the growing dominance of raw material suppliers, the active use of the institutional market regulation mechanisms (e.g. deliberate reduction of production in developed countries to reduce the volatility of world prices). World leaders are conducting the accelerated consolidation of assets, reorienting metallurgical enterprises for the production of high-tech products, modernizing production facilities (especially in China, India and the CIS).

At this background the position of Russian ferrous metallurgy enterprises has deteriorated (Figure 2). By the end of 2012, Russia had lost the fourth place to India in the list of the industry leaders.

¹⁸ The term 'fundamental transformation' means the transition from the competitive situation that exists before the conclusion of the contract to the mutual dependence. (Williamson 1996, 117-121)

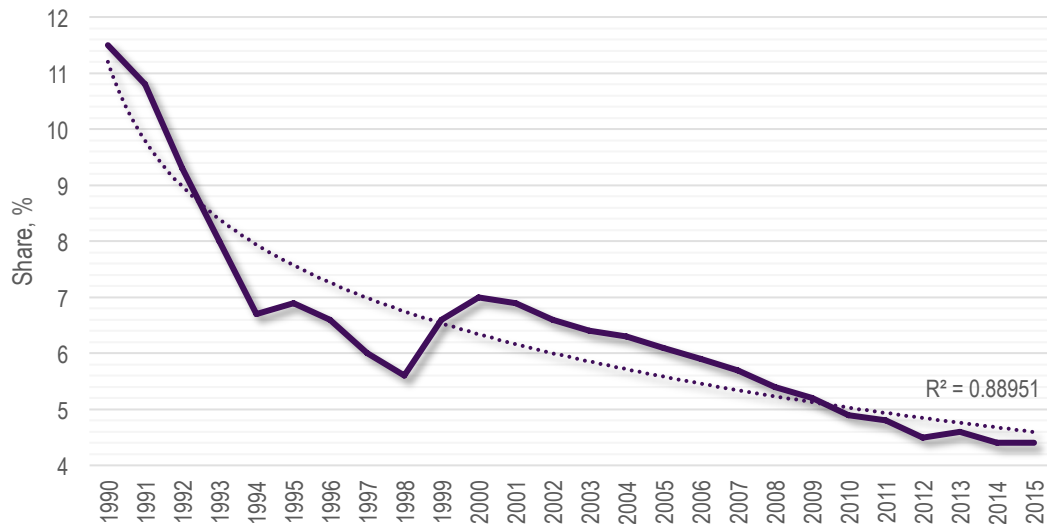


Figure 2. The share of Russia in the world steel production, 1990-2015.

Source: World Steel Association.

This fact is due to the number of peculiarities, among which there is the dependence of profitability on the level of government support and large-scale government projects; low production flexibility; the concentration of metallurgical enterprises in the certain regions and mono towns; obsolete assets and technology; traditionally tied-up capital in the inventory and, as a result, low specialization (the work principle of 'we do not know who to sell'). As a result, the ferrous industry enterprises are increasingly demonstrating the transition to low-tech types of products (Figure 3).

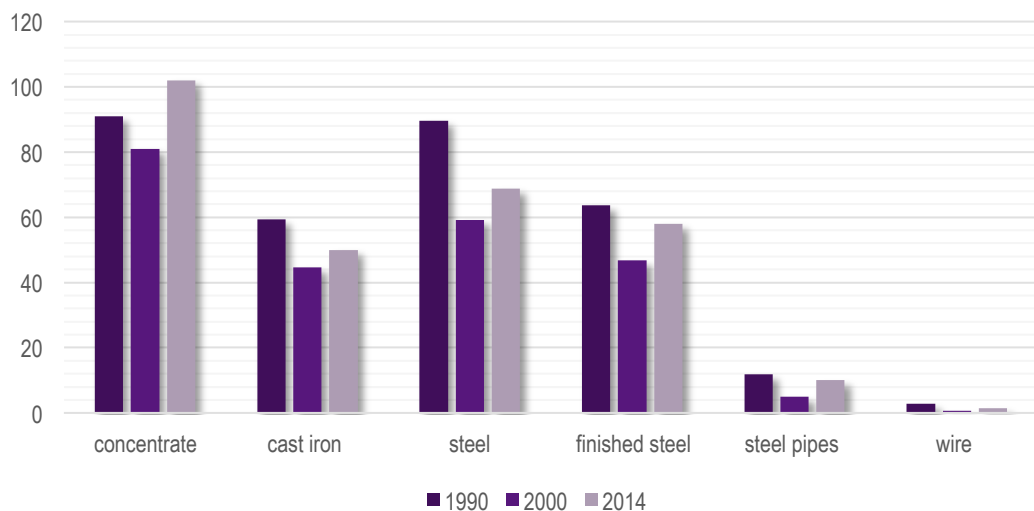


Figure 3. Dynamics of production of steel in Russia in 1990-2014, mln. t.

Source: Rosstat.

At the same time, the Russian ferrous metallurgy has a number of advantages over the major competitors, and they are: high profitability caused by low production costs due to the use of vertical integration forms, possessing its own coal mines, ore deposits, sources of energy and cheap labor force; lower tax burden; and faster prices growing in comparison with related industries. Analysts note that only significant consolidation will enable enterprises to remain competitive in the global metallurgy market.

In accordance with the peculiarities of a metallurgical enterprise the following requirements have to be imposed:

- (1) the business model has to be based on the resources that an enterprise controls¹⁹ and the capabilities that it has; Different matches and combinations can be distinguished from the bungle of available resources. This interactive approach to the formation of a business model choice will enable an enterprise to respond flexibly to any threats of the environment. The complexity to imitate resources by the market automatically enables an enterprise to obtain sustained competitive advantages.
- (2) the business model should give a clear answer to the question of the place that an industrial plant has in the customer value chain;
- (3) the business model should be directed at constant changes, that also change the market and, at the same time, must contain methods of dynamic response to environmental changes;
- (4) the business model should be understandable for implementation.

The revealed features of the metallurgical enterprises development make us think that the basis of the effective business model construction has to be a technological component. A known fact is the rapid growth of Chinese enterprises in the global metallurgical industry. This result was achieved due to the modernization of 'upper floors' in the technological chain. Technological modernization problems in the industry, the modernization of key production assets, provision of technological independence of the Russian national economic system in the recent years, are quite serious. This fact is confirmed by the release of the 2014 Federal Law №488 'On industrial policy in the Russian Federation', where the modernization of the domestic industry is recognized as one of the state priorities.

3. Results

The concept of organizational changes, which includes the life cycle theory, was developed in the mid of 20th century. According to this theory, changes in an enterprise may be due to the objective growth and will be a problem (so-called growing pains), or can be carried out consciously, when management encourages an enterprise to stay at a particular stage of the life cycle (typically, growth or maturity). At different stages the organizational characteristics of an enterprise change, so its management requires different management techniques (Miller and Friesen 1984), which naturally change the whole business architecture.

There is a patchwork of approaches to the identification of the enterprise life cycle stages, the most famous models are those of L. Greiner (1972), G. Adizes (1988), D. Miller and P. Friesen (1984), J. Lester *et al.* (2003) and others. The detailed analysis of the comparative characteristics of these models is presented in the work (Shirokova 2006, 6-7). The generalized structure of the enterprise's life cycle has four stages: start-up, growth, maturity and decline (or transition).

Classical analysis of the transformation of the enterprise at different stages of the life cycle is based on a comparison of its key challenges, age, the type of organizational structure, the degree of formalization and development strategy. The scheme of RCOV, proposed by (Demil and Lecocq 2010, 234), was chosen for comparative diagnostic of the business model components through the prism of the life cycle theory. The scheme includes an analysis of four units: the values and the combination of resources and capabilities (competencies) (RC); organizations (O) of business in the network inside an enterprise or business; specificity (value) of the offer (V). These components determine the structure and size of the costs and business income and, thus, the level of its sustainability. Using a number of influential works on the enterprises life cycles, such as (Miller and Friesen 1984, Jawahar and McLaughlin 2011), as well as our previous studies (Orekhova 2014, Orekhova and Legotin 2015). Table 1 presents a comparative analysis of the business model elements of the firm at different stages of its life cycle. To determine the type of capability the classification (Andreeva and Chayka 2006, 165-166) has been used.

¹⁹ To control does not mean to possess. More detailed information of the author's position is presented in the work (Orekhova and Legotin 2016, 82)

Table 1. Comparative analysis of the business model elements of the enterprise at different stages of its life cycle

Comparison parameters	Life cycle stages				
	(1) Start-up	(2) Emerging growth	(3) Mature stage	(4) Decline	(4) Transition
Resources					
Key resources	Financial resources Customer base	Human capital Tangible assets (production facilities) Relational capital	Organizational resources Technology	Financial resources Tangible assets (production facilities)	Human capital Customer base (new customers search) Financial resources
Investing in resources (resource strategy)	Minimum resources (bootstrapping strategy), since investments are considered as possible losses or Maximum investments (risk strategy)	Obtaining assets for business ownership Investments in the number of employees, new clients and geographical ties	The use of network resources The strategy of risk avoidance Strategy of uniform (but not maximum) investment in all kinds of resources	Narrowing the business boundaries, the liquidation of assets or Modernization of tangible assets or Combining the assets of network participants (merger)	Investments are considered in the context of losses, they are aimed at new technologies and focused on the search for new markets, but with the continuous reduction of costs
Capabilities and Competences					
Capability type	'Key' capabilities, forming the core competencies and determining the enterprise's competitive advantages	Dynamic capabilities that allow to transform the 'core' capabilities in accordance with the needs of the environment	The functional (operational) capabilities inherent to most enterprises in the industry	Missing	Dynamic capabilities that allow to transform the 'core' capabilities in accordance with the needs of the environment
Capabilities nature	Static	Dynamic	Static	Missing	Dynamic
Business organization in the network or interfirm					
Key problems	The initial funding, revenue generation, and customer recognition	Stabilization of growth and reliability of products, meeting the increasing demand	The slowdown, and the lack of particularly attractive investment opportunities with the availability of funds	The decline in demand for traditional business products, the lack of technical efficiency	Search for financial resources and ideas to search for new markets
Management mechanisms	market	network (hybrid firms and market)	network (hybrid firms and market)	firm	market
Interaction with counterparties	- Investments in customer base, since recognition by customers is	- Investments in customers have timeserving character as	- Investments in the creditors are minimal - Development	- Investments in creditors (financial resources)	- Investments in customer base, since recognition by customers is

Comparison parameters	Life cycle stages				
	(1) Start-up	(2) Emerging growth	(3) Mature stage	(4) Decline	(4) Transition
	required - The development of relations with creditors	demand exceeds supply - Investments in suppliers and creditors	of relations (networks) with all interested stakeholders	- Response to other counterparties	required - The development of relations with creditors
Interaction with the institutional environment	protection and response strategy - the minimum implementation of standards in order to avoid reprisals	Adaptation strategy and risk avoidance	Adaptation strategy and risk avoidance	Protection and response strategies	Protection and response strategies
Specificity (value) of offers					
Dependence on suppliers	Relatively low	High because of the demand growth	Low, because of monopoly power	High, due to the need to delay payments for deliveries	Relatively low
Ratio of transaction and transformation costs	Transactional ones exceed transformational ones	Transformational ones exceed transactional ones	Transformational ones exceed transactional ones	Transactional ones exceed transformational ones	Transactional ones exceed transformational ones
Rent type	Entrepreneurship (income from risk and innovation)	Entrepreneurial, Ricardian (income from the ownership of limited valuable resources)	Entrepreneurial, Ricardian, Monopoly (income from market power) Attitudinal (income from work in the network)	Monopoly (income from market power) Attitudinal (income from work in the network)	Entrepreneurship (income from risk and innovation)

It seems that at various life cycle stages the enterprise will demonstrate the differences in the forms and methods of resources management, the interaction with counterparties and institutional environment.

4. Discussion

Economic reality does not only demonstrate an active use different business models, but also requires an explanation, and development of adequate criteria for evaluating their success. The analysis of the architecture of interactions between different market participants is possible on the basis of the methodology proposed in the work (Klimanov and Tretyak 2014) and representing the consistent implementation of the three stages of analysis. The first stage supposes the reproduction and visualization of the network interaction structure of market actors, involved in the creation and proposal of the value to the end consumer. The second stage is to analyze the mechanisms and interaction forms of the key network actors, which are all kinds of contracts and institutional constraints that accompany the interaction of various market entities. The third stage requires the analysis of the results of inter-firm cooperation, based on the dynamics evaluation and control flow structure and the powers arising from the interaction between enterprises and their market position in the market, as well as the customers flow, representing a source of the network financing.

Modern researches of the biggest IT-companies' success call the creation of so-called 'technology platform' (platform-technology, industry platform), described in the works (Gaver and Cusumano 2002), one of the basic sources of competitive advantage. A technology holder - a 'company-mediator' (or platform core) -

provides the interaction of all network participants. The basis of the platform is the presence of a unique technology (technology standard), based on permanent innovations of all network participants. It is important to note that any platform will present a network, but not every network will be the technology platform.

The logic of this business model type can be used for ferrous metallurgy enterprises, as they operate in the market that has a similar (oligopolistic) structure. Moreover, the operation of traditional industries as well as the IT-companies implies the existence of a particular technology standard.

Technology platform is a special kind of business model, based on the innovations system typical for a particular ecosystem. An ecosystem is a relatively stable open or closed network. The network type is defined by the two parameters (Baden-Fuller *et al.* 2015): type of innovation: use as a 'technological core' of common standard or closed innovation; limited number of participants and their access to the network. The traditional model of vertical integration in the heavy industries is based on the supply chain or pipeline business, when the control is linear and from suppliers of raw materials, 'the value motion' is gradually transforming to end product manufacturing. The Russian ferrous metals production is concentrated in a few vertically-integrated holdings. The largest one is the Evraz Group, which accounts for 16% of total production, NLMK has the second position - 11%, followed by MMK - 10%, Severstal - 10%, Mechel - 7% and Metallinvest - 8%.

However, most often in such a network only adjacent points interact most effectively, as the result, the quality, price and other parameters of the product are poorly controlled and predicted. In the technology platform the value creation for a customer is carried out not on a chain, but it is the result of the simultaneous and mutual exchange of all its members. Moreover, a consumer, who the value is created for, is actually excluded from the chain. For the Russian ferrous metallurgical enterprises understanding requests of end consumers is very important, because one of the most potential for their development strategies is focusing on narrow-specialized market niches. In addition, the growing number of platform users increases the value of a product (in the value chain this dependence is not observed).

Transition of Russian metallurgical enterprises from the traditional to the innovative business model is the two-stage reconstruction of the business architecture. The comparative analysis of pipeline (chain), network and platform business models is presented in Table 2.

Table 2. Comparative analysis of chain, network and platform-technology business models of metallurgical enterprises

Comparison criteria	Types of business model		
	Diadic (chains)	Market-matchmaking (net)	Triadic (network) Multi-sided (platform)
<i>Characteristics</i>	Relations between e two enterprises to create value-added products	Relations between the two players, one of which is an intermediary between buyers and sellers	The network, where the mediator connects groups of consumers
<i>Examples of enterprises</i>	McDonalds	Booking.com	Google
<i>Strategic goals</i>	Optimization of the internal environment, costs	External collaboration to maximize the economies of scale	External collaboration to maximize the impact of technology and value for the entire ecosystem
<i>The core of the business model (mediator)</i>	Missing (participants task is to increase their own revenue	Mediator (its task is to unite members)	The owner of the technological standard (their task is to generate network profits)
<i>Customer relations</i>	1. Consumers are not the business model participants, and they contact the enterprise directly 2. Company focuses on the target customer groups	Consumers are the network part (buyers and sellers, interaction is organized for them)	1. Consumers are proactive participants of the network 2. Consumers are divided into users (user-customers) and payers 3. Interaction between users is determined by the business model

Comparison criteria	Types of business model		
	Diadic (chains)	Market-matchmaking (net)	Triadic (network) Multi-sided (platform)
			4. Coverage of all customer segments
<i>Product</i>	Simple product	Servitized product - the proposal of not a separate product but a complex service concerning its functioning	Complementary product is a bundle of products and services produced by different manufacturers, but united by a common standard
<i>Resources</i>	Belong to enterprises, clearly specified The owner of the resource is its user	Belong to enterprises, clearly specified The owner of the re-source is not always its user	Combining resources into the network Resource 'orchestration' (a term of (Van Alstyne <i>et al.</i> 2016, 57))
<i>Innovations</i>	Closed, within one enterprise	Open, in the entire ecosystem, mutual stimulation of participants innovation	

The technological platform as a business model of an industrial enterprise has a number of advantages for all network participants. Some of them are the low level of competition among subcontractors and mandatory benefits for all participants in the network, regardless of the power asymmetry. It seems that due to the limited number of buyers for the ferrous metallurgical enterprises, the closed version of the technology platform it is more suitable. To create the business architecture based on technology, it is important to develop human and institutional capital in industrial enterprises and relational capital in the network. The need for investment in human capital is not only due to the importance of the technological content development of industrial enterprises, but also further changes in the technology. At the same time, our previous studies (Dubrovsky and Orekhova 2015) prove that first of all Russian business is ready to invest in physical assets (plant and equipment update) and access to finances (the relationship with the creditors). This state of Russian traditional industries can be classified as a decline (the transition from maturity to decline).

Our developed basic logical structure of the business model (Figure 4) of ferrous metallurgical enterprises as a technological platform allows the use of all resources to achieve sustained competitive advantages. Business model participants are linked by mechanisms of interaction, which can be based on the process of creating and providing the value (of a product) and take the form of an order, orders deliveries on request, purchase and sale transactions, conclude and implement agreements contain a number of horizontal and vertical coordination.

Such logics of industrial technology platforms creation, presented in Figure 4, may be not only the foundation for the successful development of the enterprise itself, but also represent a source of growth for the Russian metallurgical industry.

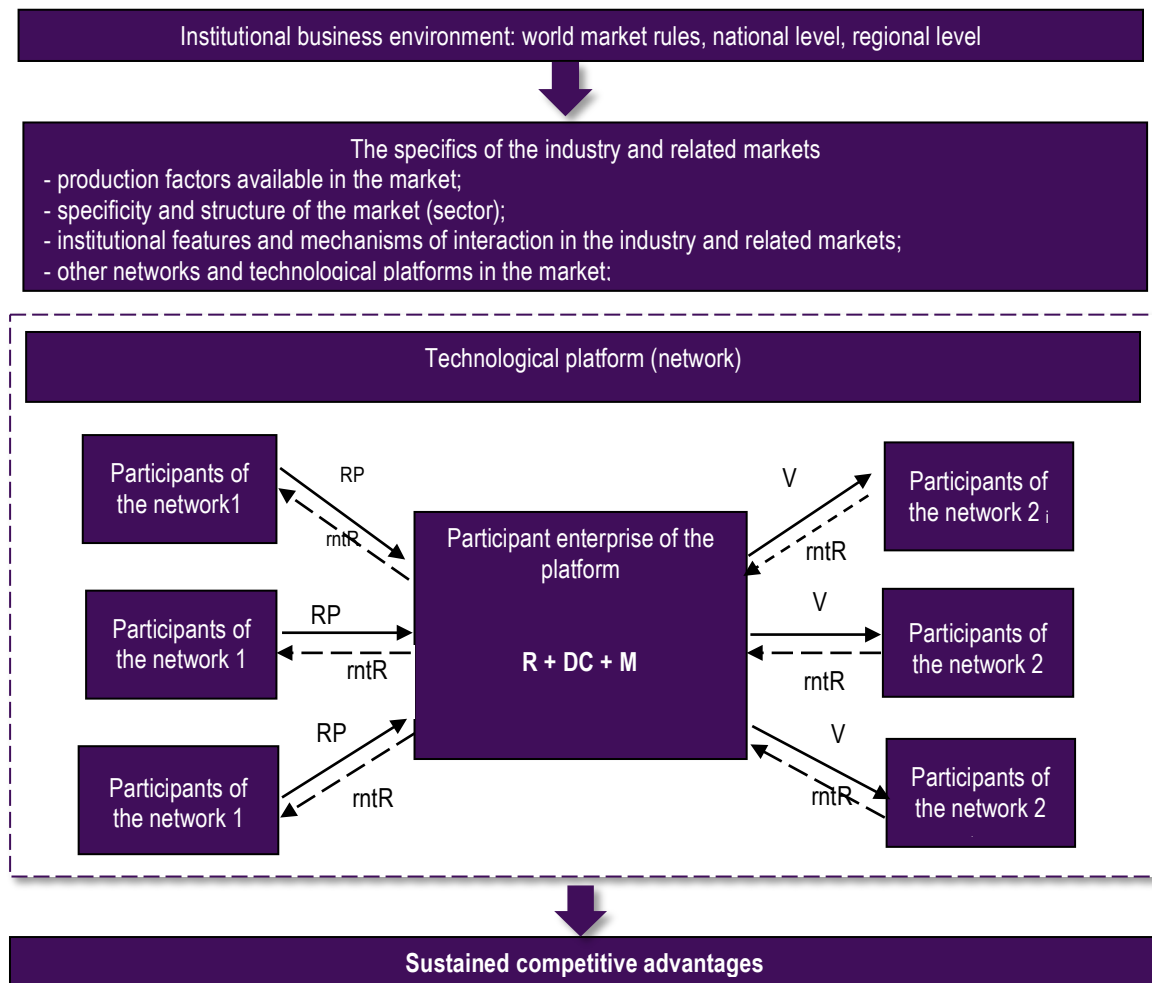


Figure 4. Basic logical structure of the business model formation of sustained competitive advantages for metallurgical enterprises

Note: R (recourses) – set of technology platform resources; r (revenue) – revenues from the interaction in the network; V (value) – value, provided to customers; DC (dynamic capabilities) – dynamic capabilities of an enterprise to reconfigure resources in accordance with the demands of the environment; M (mechanisms) – interaction mechanisms of an enterprise with other members of the network; Participants of the network 1 – network participants, providing or influencing the creation and delivery of the value to customers; Participants of the network 2 – customers; i – customers level in the chain of creation and income redistribution.

Conclusion

The object of analysis in the work is the metallurgical enterprises, their specific activities complicate the use of flexible, dynamic business models. The restructuring of the existing business model of the metallurgical industry, based on the classic value chain requires not only some changes in the architecture itself, but also the institutional changes in the interaction of network participants.

As the basic structure for the metallurgical industry enterprises, the closed technology platform is proposed to be used. The proposal is due not only to the author's belief in the necessity of evolutionary change of Russian business architecture, but also due to the specifics of the metallurgical enterprises operation, based on the actual production technology and tangible assets.

In the national aspect this business model will keep specific assets the inside the platform, reduce transaction costs and prices level for users, combine efforts and possibilities, moving further along the 'demand chain'. If enterprises are included in the ecosystem, their technological standard and prices setting affect demand

for other complementary products. Thus, the establishment of effective business platforms in ferrous metallurgy can make a significant multiplier effect in the development of other sectors of Russian industry.

References:

- [1] Amit, R., and Zott, C. 2001. Value creation in e-business. *Strategic Management Journal*, 22: 493-520.
- [2] Andreeva, T.E., and Chayka, V. . 2006. Discussion of the dynamic capabilities nature. *Vestnik of St. Petersburg State University*, 8 (4):163-174.
- [3] Baden-Fuller, C., Giudici, A., Haefliger, S., and Morgan, M. S. 2015. *Ideal types, values, profits and technologies*. London School of Economics.
- [4] Cavalcante, S., Kesting, P., and Ulhøi, J. 2011. Business model dynamics and innovation: Reestablishing the missing linkages. *Management Decision*, 49 (8): 1327–1342.
- [5] Chesbrough, H., and Rosenbloom, R. S. 2002. The role of the business model in capturing value from innovation: Evidence from Xerox Corporation's technology spin-off companies. *Industrial and corporate change*, 11(3): 529–555.
- [6] Colombo, M. G., Mohammadi, A., and Lamastra, C. R. 2015. *Innovative Business Models for High-tech Entrepreneurial Ventures* in: Business Model Innovation: The Organizational Dimension. Oxford University Press: 170-193
- [7] Demil, B., and Lecocq, X. 2010. Business model evolution: In search of dynamic consistency. *Long Range Planning*, 43 (2): 227– 246.
- [8] Doz, Y. L., and Kosonen, M. 2010. Embedding strategic Agenda for accelerating Business Model Renewal. *Long Range Planning*, 43: 370-382.
- [9] Dubosson-Torbay, M., Osterwalder, A., and Pigneur, Y. 2002. E-business model design, classification, and measurements. *Thunderbird International Business Review*, 44 (1): 5–23.
- [10] Dubrovsky, V., and Orekhova, S. 2015. The Russian model specifics for human capital management at the times of crisis. Working Paper Series. <http://ssrn.com/abstract=2813682>
- [11] Gawer, A., and Cusumano, M. A. 2002. *Platform leadership: How Intel, Microsoft, and Cisco Drive industry innovation*. Harvard Business Review Press.
- [12] Guo, H., Zhao, J., and Tang, J. 2013. The role of top managers' human and social capital in business model innovation. *Chinese Management Studies*, 7(3): 447–469.
- [13] Hajiheydari, N., and Zarei, B. 2012. Developing and manipulating business models applying system dynamics approach. *Journal of Modeling in Management*, 8(2): 155 – 170.
- [14] Jawahar, I. M., and McLaughlin, G. L. 2001. Toward a descriptive stakeholder theory: An organizational life cycle approach. *Academy of Management Review*, 26(3): 397 – 414.
- [15] Johnson, M., Christensen, C., and Kagermann, H. 2008. Reinventing your business model. *Harvard-Business Review*, 86 (12): 57–68.
- [16] Klimanov, D. E., and Tretyak, O. A. 2014. Business Models: Major Research Directions and Search of Conceptual Foundations. *Russian Management Journal*, 3: 107-130
- [17] Kondratyev, V. B. 2015. *Industries and sectors of the global economy: characteristics and development trends*. International Relations.
- [18] Kraemer, K., Dedrick, J., and Yamashiro, S. 2000. Refining and extending the business model with information technology: Dell Computer Corporation. *The Information Society*, 16 (1): 5–21.
- [19] Kusch, S. P., and Smirnova, M. M. 2004. The company's relationship with customers in industrial markets: the main directions of research. *Vestnik of St. Petersburg State University*, 8(4): 31-56.

- [20] Lambert, S.C., and Davidson, R.A. 2012. Applications of the business model in studies of enterprise success, innovation and classification: An analysis of empirical research from 1996 to 2010. *European Management Journal*, 31(6): 668-681.
- [21] Magretta, J. 2002. Why business models matter. *Harvard Business Review*, 80 (5): 86– 92.
- [22] Malhotra, Y. 2000. Knowledge management and new organization forms: A framework for business model innovation. *Information Resources Management Journal*, 13(1): 5–14.
- [23] Miller, D., and Friesen, P. H. 1984. A longitudinal study of the corporate life cycle. *Management Science*, 30 (10):1161–1183.
- [24] Morris, M., Schindehutte, M., and Allen, J. 2005. The entrepreneur's business model: Toward a unified perspective. *Journal of Business Research*, 58 (6): 726–735.
- [25] Nenonen, S., and Storbacka, K. Business model design: Conceptualizing network value creation. *International Journal of Quality and Service sciences*, 2 (1): 43– 59.
- [26] Orekhova, S. V. 2014. Selection of banking strategy on the basis of its dynamic capabilities. *Modern competition*, 3(45): 91-104.
- [27] Orekhova, S. V., and Legotin, F. Ya. 2015. Designing Resource Strategy of a Firm in the Context of RBV-Analysis. *Izvestia USUE*, 4(60): 15-26.
- [28] Orekhova, S. V., and Legotin, F. Ya. 2016. Mechanisms of Investment into Company Resources: Justification of the Choice and Russian Specifics. *Izvestia USUE*, 1(63): 80-89.
- [29] Osterwalder, A., Pigneur, Y., and Clark, T. 2010. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Wiley: Hoboken.
- [30] Osterwalder, A., Pigneur, Y., and Tucci, C. L. 2005. Clarifying business models: Origins, present and future of the concept. *Communications of the Association for Information Science*, 16: 1–25.
- [31] Rasmussen, K., and Foss, N. 2015. *Business Model Innovation in the Pharmaceutical Industry*. In: *Business Model Innovation: The Organizational Dimension*. Oxford University Press: 241-269.
- [32] Riccaboni, M., Rossi, A., and Schiavo, S. 2013. Global Networks of Trade and Bits. *Journal of Economic Interaction and Coordination*, 8 (1): 33–56.
- [33] Sabatier, V., Mangematin, V., and Rousselle, T. 2010. From Recipe to Dinner: Business Model Portfolios in the European Biopharmaceutical Industry. *Long Range Planning*, 43: 431 – 447.
- [34] Sainio, L.-M., Saarenketo, S., Nummela, N., and Eriksson, T. 2011. Value creation of an internationalizing entrepreneurial firm: The business model perspective. *Journal of Small Business and Enterprise Development*, 18 (3): 556–570.
- [35] Shafer, S., Smith, H., and Linder, J. 2005. The power of business models. *Business Horizons*, 48 (3): 199–207.
- [36] Shirokova, G. V. 2011. *Entrepreneurial firm management*. Publishing House of the 'Graduate School of Management'.
- [37] Shirokova, G.V., Merkuryeva, J. S., and Serova, O. 2006. Features of formation Russian companies' life cycles (empirical analysis). *Russian Management Journal*, 3: 3-26.
- [38] Sosna, M., Trevinyo-Rodriguez, R. N., and Velamuri, S. R. 2010. Business Model Innovation through Trial-and-Error Learning: the Naturhouse Case. *Long Range Planning*, 43: 383-407.
- [39] Teece, D. J. 2010. Business models, business strategy and innovation. *Long Range Planning*, 43: 172–194.
- [40] Thompson, J.D. 1967. *Organizations in Action*. McGraw Hill.
- [41] Timmers, P. 1998. Business models for electronic markets. *Electronic Markets*, 8 (2): 3–8.
- [42] Van Alstyne, M. W., Parker, G. G., and Choudary, S. 2016. Pipelines, Platforms, and the New Rules of Strategy. *Harvard Business Review*, April: 54-62.

- [43] Williamson, O. 1996. *Economic Institutions of Capitalism: Firms, Markets, Relational contracting*. Lenizdat; CEV Press.
- [44] Zott, C., and Amit, R. 2008. Exploring the fit between business strategy and business model: Implications for firm performance. *Strategic Management Journal*, 29 (1): 1–26.
- [45] Zott, C., Amit, R., and Massa, L. 2011. The business model: Theoretical roots, recent developments and future research. *Journal of Management*, 37(4): 1019–1042.

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