

Development of Multisided Platforms in the Context of New Industrialization

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Abstract — The study aims at exploring the possibilities of applying a multisided platform in the context of new industrialization as a business model of traditional industrial enterprises. The methodological framework of the study is based on the study of the platform economy design, theories of strategic management, and neo-institutional economic theory. The main features of the multisided platform are identified. The macroeconomic, market, and intracompany factors of a business model transformation of an industrial enterprise are substantiated. The novelty of the study lies in the fact that the object of analysis are heavy industry enterprises that have low strategic flexibility, but in the conditions of industrialization and digitization, they are forced to change the format of their business. The author concludes that an effective change in the business architecture is possible when positioning an industrial enterprise as a participant in a multisided platform when creating customer value. At the same time, the author highlighted a number of restrictions on the use of this business model for industrial enterprises.

Keywords — *new industrialization, multisided platform, business model, industrial company*

I. INTRODUCTION

Strategic management research has moved from analyzing strategies to evaluating business models. It is the format of the business that ultimately determines the choice of resources, the vector of development of the company, and its competitive advantages.

In the platform economy, the essence of all the actions of companies comes down to a change in the design of the platform and the market. As A.I. Kovalenko notes, “at present, ... firms are competing not with goods and services and not with market positions, but with their business models, and today the business model of a multilateral platform demonstrates success” [1, p.77].

At the same time, scholars focus their attention on electronic, rapidly developing businesses based on digital technologies, or explore the changing landscape of commodity

markets, where traditional business processes are gradually being superseded by Internet technologies. Other researchers in their work evaluate the business models of fast-growing high-tech enterprises.

Traditional industrial markets (first of all, heavy industry) are practically not considered in case studies and theoretical and methodological research. This fact can be explained by two reasons. The first one is associated with the well-established view that industrial enterprises have been studied for a long time, operate in a linear value chain (pipeline), and have a limited number of consumers, which makes it difficult to obtain positive network effects. Put simply, there is a stereotypical notion that there is no other business model for industrial enterprises and could not exist.

The second reason is more trivial. The lack of active interest in the transformation problems of industrial enterprises in leading management publications is due to a lack of a critical mass of such enterprises in developed countries.

On the contrary, the problem of embedding in modern technological structures is quite acute for the BRICS countries. In Russia, with the adoption of the National Program “Digital Economy of the Russian Federation” in 2017, heated discussions are underway on the introduction of platform technologies. The urgency of the transformation of heavy industry enterprises in Russia is attributable to the contradictory trends of the institutional environment, the actualization of the problems of scientific and technological development consistency with the technological context of enterprises, the lack of consideration for the specifics of activities and resource constraints of such enterprises in the business model research, the need to form an effective industrial policy. At the same time, according to the author, the essence of these changes in relation to Russia is poorly understood (for more details on this, see [2]).

Accordingly, a question arises, the answer to which is *the purpose of the study*: can the principles of platform business models be applied to traditional industrial markets in the

context of new industrialization and digitization. Such a purpose implies a consistent clarification of the following points: (1) bringing to a common denominator the notions of what constitutes a multilateral platform; (2) the preparation of the idea of a platform functioning for enterprises operating in traditional industrial markets; (3) an empirical analysis of the current situation on the example of Russian enterprises of heavy industry.

II. LITERATURE REVIEW

According to [3, p.4–5], two development path of approaches to the study of business models can be distinguished. The practical approach (realist) is based on the case studies of individual large companies (for example, [4–5]), that is, the study of the phenomenon of business models is carried out from the examples to theoretical generalization and scientific argumentation. The second, conceptual approach (principle-conceptual) is the construction of ideal types of business models that are further tested in practice (for example, [6]). The algorithm of actions to achieve any result in this case is the business model.

Studies of multisided platforms are based on a whole mosaic of various approaches and concepts, which, with a high degree of conditionality, can be combined into three groups.

The first group of theories is in the field of strategic management. Thus, the structure of a business and the ways to monetize it are subjected to detail in the theory of entrepreneurship and the concept of business models. The network approach (RV – relational view) focuses on the study of network effects that occur in platforms. Stakeholder theory redefines stakeholder interaction in platform business models. Modern resource theory (RBV – recourse-based view) studies resource exchange and resource dependence issues of the platform participants.

Neo-institutional economic theory (including the theory of contracts) is studying the rules and specifics of economic exchanges in platform business models and transaction costs arising from this.

The founders of the platform study can rightly be considered the leading scientists in the field of the theory of sectoral markets J. Rochet and J. Tirole [7] and the theory itself was also developed in the works [8–9]. The term “multisided platform” first appeared in [10]. The theory of the platform economy as a set of interrelated theoretical concepts explaining the mechanism of the platform business functioning finally took shape in the works [11–14]. In Russian management studies, the issue of the multisided platforms functioning is only in its infancy (see, for example, [15–17]).

III. RESEARCH METHODOLOGY

Critical analysis and synthesis of existing ideas allowed the author to identify a number of features that distinguish multilateral platforms from other types of business models:

1) subjects of the platform are easily divided into two disjoint sets;

2) when each party interacts with the market, the transaction costs are so high that without the other parties it cannot interact;

3) stable matching of the subjects’ interests (matchmaking), which gives a positive cross-network effect of increasing the utility by achieving a critical mass of the platform participants [7];

4) network effect is both a sustainable competitive advantage and a barrier to market entry [18–19];

5) the pricing mechanism is supported by a mediatorial function, that is, a platform is an organization that creates profits by ensuring the direct interaction of various groups of the market and controlling their interaction. The model is aimed not at meeting the specific needs of customers, but at stimulating their massive presence on the platform and their maximum interaction with third parties;

6) the ability to control all exchanges; otherwise, the platform will be ineffective even when recruiting a critical mass of customers.

IV. RESULTS

It should be noted that part of the traditional businesses (for example, in the tourism market) have been quite actively transformed and changed, thus, the market itself and the essence of the transferred value.

And here it is important to find what are the opportunities for the transformation of a business, defining its strategic alternatives. Based on the consolidation of existing theories and approaches, we can distinguish three groups (levels) of the factors that define vectors for choosing and transforming a business model (Table 1).

TABLE I. FACTORS DETERMINING THE POSSIBILITIES OF TRANSFORMING THE COMPANY’S BUSINESS MODEL

Group of factors	Types of factors
1 Social development vector and macroeconomic ones	- Sharing economy
	- The emergence of B2B and P2P markets
	- Total digitization and technification of society
Industrialization vector	- Splicing hardware and software
	- Automation of routine procedures, changes in values and priorities in the field of labor
	- Multi-skilling of jobs
2 Microeconomic (market)	The level of competition in the market
	The level of dependence on various resources
	Level of specialization and integration within the market and with adjacent markets
	Market capacity and minimum effective output
	The specificity and longtermness of contracts
3 Intra-organizational	Features of the market institutional environment
	Target segment
	Size of business (according to No. 209-FZ) and market share
	Path dependency
	Technology and standards compatibility with the market
Personal characteristics of the consumer	

The dissemination of digital (electronic) technologies provides opportunities for the organization of intercompany

exchange, changes the mechanisms for managing transactions and, as a result, gives new options for business models, which can be divided into 3 groups:

- 1) material business model with digital shadow;
- 2) digital (electronic) business model with a material shadow;
- 3) fully digital business model.

Furthermore, according to Gawer and Cusumano [14], the product has the potential of a platform if it meets the following 3 criteria:

- it performs, at least, one important function within what can be described as a “usage system”, or solves basic problems for many subjects in the industry;
- it is easy to connect to it or build on it to expand the system of use;
- it is hard to replace.

All this indicates that an industrial enterprise under the industrialization can partially use the principles of the platform business model.

However, there are a number of restrictions for the implementation of such a model in full (Table 2).

TABLE II. RESTRICTIONS ON USING THE PLATFORM BUSINESS MODEL FOR A TRADITIONAL INDUSTRIAL ENTERPRISE

Comparison test	Platform business model	Restrictions for an industrial enterprise
Network type	Open network	Closed network
Technology and standards	A technology standard is defined by the intermediary (matchmaker) firm	The technological standard depends on the state industrial policy.
The basis of the model	Digital system – a set of software and hardware	The digital system is the “shadow” of the production system.
Main resource	The platform itself (network) and social capital	Productive assets as a combination of technology and capital goods

It is proposed to use a closed technological platform as a basic structure for industrial enterprises in the conditions of new industrialization. This proposal is based not only on the author’s conviction of the need for an evolutionary change in the architecture of Russian business, but also on the specifics of the functioning of industrial enterprises based on real production technologies and physical assets. At the current stage of development with the embedding of industrial enterprises in the platform economy, it is advisable to speak not about the multilateral, but about the technological platform. Such a platform, on the one hand, unites the participants into a network and has a core (the owner of the platform is the holder of the technological standard). At the same time, there are a number of restrictions on the transition to the classic multilateral platform.

There are two main fundamental restrictions of such a transition. The first one is due to the fact that all known multisided platforms are digital platforms, sometimes “supported” by the resource base. For an industrial enterprise, the merging of digital and material space occurs in the opposite direction. The basis of manufacturing output is real assets, while the digital shadow is only a shadow.

The second limitation is in an objectively small number of “one-tier” consumers, for whom it makes no sense to create a consumer network. Even if we assume that they create it—their number does not allow achieving a positive network effect on the scale.

V. CONCLUSION

One of the most difficult tasks, in our opinion, is the effective transformation of the existing traditional enterprises of heavy industry due to their resource intensity, significant investments in production capacities, and low strategic flexibility.

There is a fundamental difference between a multisided platform and other business models—its ability to create value by itself at the expense of a network of users. In traditional industrial markets this is not possible; therefore, such a platform cannot be called 100% multisided one.

However, the transition to a platform business model gives enterprises a number of advantages described above. But first of all, it gives Russia the opportunity to break out of the vicious circle of lack of demand on the top floors of the technological chain. According to A.I. Kovalenko, “multisided platforms can and should be used primarily to spread innovation” [1, p.75].

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