

Sustainable and resilient strategies for entering international markets for Russian manufacturing companies based on digital platform interactions

Sergey Ilkevich^{1*}

¹Financial University under the Government of the Russian Federation, Leningradsky prospect, 49, Moscow, Russia

Abstract. The focus of the article is the problem of forming sustainable and resilient (including in the face of external restrictions) strategies for entering international markets for Russian manufacturing companies based on mechanisms of platform interactions, taking into account the fact that in the current conditions of the platform economy, value creation is the result of a new combination of information, physical products and real services provided by various types of complementors. Based on a theoretical review and interviews with a focus group of 23 representatives of Russian manufacturing companies responsible for business development, strategy, IT systems, participation in platforms and digital transformation, the study suggests a typology of internationalization strategies. This typology of strategies for entering international markets for Russian manufacturing companies is proposed based on platform models of interactions to ensure long-term sustainability and resilience. For each of the seven types of strategies, a brief description of the focus and scope of applicability is provided. The author emphasizes the significance of helping manufacturers to understand digital platforms in more details, especially in how they can lead to better flexibility of international production and supply operations.

1 Introduction

In the current circumstances and parameters for the development of Russian manufacturing companies, their innovative and international economic activities, industrial policy and external restrictions, it is of particular interest to consider the factors that influence the formation of strategies for entering international markets based on platform interactions to ensure sustainable and resilient development. The focus of consideration on the opportunities of Russian manufacturing companies to participate in international platforms allows us to more thoroughly define and specify the mechanisms, formats, opportunities and limitations when developing strategies for entering international markets for Russian manufacturing companies. The purpose of this study is the initial categorization and systematization of this

* Corresponding author: ilkevich83@mail.ru

research focus, the result of which is a typology of strategies for entering international markets for Russian manufacturing companies based on platform interactions to achieve sustainable and resilient development.

Currently, general and conventional export support instruments have been explored in a multilateral way, but aspects of the capabilities of building platforms and ecosystems have only recently begun to be partially addressed [1; 2]. At the same time, for an increasing number of sectors and industries, platforms and ecosystems are becoming a new form of industrial organization [3]. Platform manufacturing is significantly changing the way production is planned and executed. Companies don't know who makes their parts, part manufacturers don't necessarily own the equipment, and knowledge and solutions cross firm boundaries [4]. But in the international context issues of coordination and ownership of digital platforms become especially important [5], as well as matters of data ownership and open exchange, interconnections between different operators at the ecosystem level [6]. Within the framework of international production and supply chains, the integration of digital technologies into the global business of manufacturing transnational corporations is ensured in attempts to achieve the combinatorial, synergistic effect of Industry 4.0 [7] and platform ecosystems [8; 9]. One of the most impactful effects of these developments is an increased flexibility of manufacturing systems due to digital technologies and platforms which can be regarded as an essential prerequisite for sustainability and resilience [10] for both production and supply chains [11]. Digitalization can also influence green innovation in manufacturing through three channels and mechanisms: by value chain upgrading, by empowering industrial structure optimization, and by promoting overall technological innovation [12]. For all the above considerations it is very important to help manufacturers to understand digital platform ecosystems in more details, maximize their resource potential, and use them to promote sustainable business models [13].

2 Methods

The study is interdisciplinary and is conceptually based on economics, management theory, decision theory and industrial digitalization and manufacturing platforms. Other theoretical methods of research (abstraction, analysis and synthesis, induction and deduction) were also used. The empirical part of the study is based on conducting semi-structured interviews with a focus group of 23 representatives of Russian manufacturing companies responsible for business development, strategy, IT systems, platforms and digital transformation in order to produce a comprehensive summary of insights for revealing the most important factors and suggesting a typology of internationalization strategies for Russian manufacturing companies based on digital platform interactions, which would prioritize sustainable and resilient development.

3 Results

Based on key factors, seven types of strategies for entering international markets for Russian manufacturing companies can be identified based on platform interactions. It should be noted that all seven generalized types of strategies presented below in Table 1 are highly sensitive to the contexts of implementation of individual country platforms, where Russian manufacturing companies intend to become meaningful participators and complementors. They can be used as a first approximation in developing hypotheses about the most effective approaches to interaction on platforms under external constraints.

The three levels of the parameter "Impact of external restrictions" in Table 1 – weak, medium, strong – mean a gradation of the level of influence of external restrictions according

to the degree of influence on both Russian manufacturing enterprises and the platforms and their complementors. Assessing the level of influence of external restrictions on the platform and its complementors and determining the full range of risks depends on many parameters and must be assessed expertly in each specific case. Many parameters include such aspects of legislative regulation of the country of registration of the platform and the main complementors as the ease of establishing parallel foreign economic transactions, the possibility of making payments and settlements in digital financial assets, features of customs regulation, the speed of opening and closing a business, since these parameters primarily critically influence the possibility of inclusion into the platforms for Russian complementors directly or indirectly (through a chain of intermediate companies registered both in third countries and in the country of registration of the platform).

Strategic priorities for Russian manufacturing companies entering international markets based on platform interactions are identified as three main factors: 1) joint and cross-distribution within inter-company ecosystems of production orders and contracts; 2) expansion of the product assortment, taking into account interactions with other platform complementors; 3) increasing the production and logistics flexibility of Russian manufacturing companies.

Table 1. Typology of strategies for entering international markets for Russian manufacturing companies based on digital platform interactions to ensure sustainable and resilient development

Impact of external restrictions	Factor 1. High potential for joint and cross-distribution within inter-company ecosystems of production orders and contracts	Factor 2. Wide possibilities for expanding product range, based on interactions with platform complementors	Factor 3. High potential for increasing production and logistics flexibility of a Russian manufacturing company
Weak	Conventional export strategy	Conventional assortment expansion strategy	Strategy of broad cooperation based on subscription models and sharing of industrial assets and orders
Medium	Parallel export strategy	Assortment expansion strategy “case by case”	Strategy for limited sharing of industrial assets “case by case”
Strong	Export strategy “case by case”	Strategy is impossible	Strategy is impossible

4 Discussion

Let us dwell on brief descriptions of the focus of each of the seven types of strategies for entering international markets for Russian manufacturing companies based on platform interactions under conditions of external restrictions.

The *conventional export strategy* allows Russian enterprises to carry out export deliveries as part of interaction on platforms in conditions where companies in a particular industry have not come under restrictive pressure. An example here would be Norilsk Nickel.

The *parallel export strategy* can be developed in cases where significant external restrictions have already come into force or their introduction in the coming months is highly likely. In such cases, it is necessary to build complex supply chains through companies registered both in the platform country and in third countries.

The *export supply strategy “case by case”* under conditions of a high level of external restrictions presupposes high flexibility in decision-making on export supplies and the acceptance of the risks by partner platform infrastructure in other countries. Foreign platforms may be required to establish either closed interaction modules, or register separate legal entities.

The *conventional assortment expansion strategy* involves the interaction of Russian manufacturing companies with partners within the framework of a platform model for building common and collaborative product systems, as well as joint branding of individual product lines. However, the likelihood of pressure in the case of Russian companies should lead to flexibility and shorter-term formats of interaction with partners to ensure the timely separation of product systems and joint brands and trademarks. Maintaining a balance of interests of Russian enterprises and foreign companies will allow the latter to avoid excessive risks.

The *assortment expansion strategy “case by case”* assumes an even more situational nature of interaction between Russian enterprises and foreign complementors. It is possible to establish separate legal entities, as well as to create separate brands focused more on price loyalty of consumers rather than creating sustainable communication with consumers. This, in turn, reduces the level of both transaction costs and sunk costs in the event of increasing external restrictions (to a strong level) and the risks for foreign partner companies.

The *strategy of broad cooperation based on subscription models and sharing of industrial assets and orders* provides for extensive platform interactions between Russian manufacturing companies within the framework of rental models for the use of production capacities of foreign production sites, including in the EaaS format (equipment as a service). The low probability of introducing external restrictions is pushing Russian and foreign companies towards a more flexible model of contractual interaction.

The *strategy for limited sharing of industrial assets “case by case”* involves ad hoc implementations of projects for the sharing or rental of production lines and equipment, structured within a network of contracts through companies in third countries (in relation to the platform owner). Platform owners may be required to establish closed modules or interaction schemes.

5 Conclusions

The presented typology of seven strategies provides a general framework for Russian manufacturing companies for identifying internationalization opportunities and relevant strategic approaches to ensure sustainable and resilient development using flexibility of digital platforms. The author emphasizes the significance of helping manufacturers to understand digital platforms in more details, especially in how they can lead to better flexibility of international production and supply operations.

The article was prepared based on the results of research carried out at the expense of budgetary funds under the state assignment of Financial University. The research team of the Higher School of Management of Financial University (Moscow, Russia) intends to continue multifaceted conceptual and empirical studies in the field of digital technology progress for manufacturing and industrial enterprises (including in the context of business internationalization and ecosystem and platform development) and is open to research collaboration suggestions.

Acknowledgements

The article was prepared based on the results of research carried out at the expense of budgetary funds under the state assignment of Financial University.

References

1. W. Naudé. Late industrialisation and global value chains under platform capitalism, *Journal of Industrial and Business Economics*, **50(1)**, 91-119 (2022)
2. J. Loonam, N. O'Regan. Global value chains and digital platforms: Implications for strategy, *Strategic Change*, **31(1)**, 161–177 (2022) <https://doi.org/10.1002/jsc.2485>
3. S. Suuronen, J. Ukko, R. Eskola, S. Semken, H. Rantanen. A systematic literature review for digital business ecosystems in the manufacturing industry: Prerequisites, challenges, and benefits, *CIRP Journal of Manufacturing Science and Technology*, **37**, 414-426 (2022) <https://doi.org/10.1016/j.cirpj.2022.02.016>
4. T.A.M. Tolio, L. Monostori, J. Váncza, O. Sauer. Platform-based manufacturing, *CIRP Annals*, **72(2)**, 697-723 (2023) <https://doi.org/10.1016/j.cirp.2023.04.091>
5. M. Jovanovic, N. Kostić, I.M. Sebastian, T. Sedej. Managing a blockchain-based platform ecosystem for industry-wide adoption: The case of TradeLens, *Technological Forecasting and Social Change*, **184**, 121981 (2022) <https://doi.org/10.1016/j.techfore.2022.121981>
6. K. Kokkonen et al. Preconditions and benefits of digital twin-based business ecosystems in manufacturing, *International Journal of Computer Integrated Manufacturing*, **36(5)**, 789-806 (2023)
7. X. Xu, Y. Lu, B. Vogel-Heuser, L. Wang. Industry 4.0 and Industry 5.0—Inception, conception and perception, *Journal of Manufacturing Systems*, **61**, 530-535 (2021) doi.org/10.1016/j.jmsy.2021.10.006
8. J. Veile, M.-C. Schmidt, K.-I. Voigt. Toward a new era of cooperation: How industrial digital platforms transform business models in Industry 4.0, *Journal of Business Research*, **143**, 387-405 (2022) <https://doi.org/10.1016/j.jbusres.2021.11.062>
9. A. Das, S. Dey. Global manufacturing value networks: assessing the critical roles of platform ecosystems and Industry 4.0, *Journal of Manufacturing Technology Management*, **32(6)**, 1290-1311 (2021)
10. S.K. Srivastava, S. Bag, Recent Developments on Flexible Manufacturing in the Digital Era: A Review and Future Research Directions, *Global Journal of Flexible Systems Management*, **24**, 483–516 (2023) <https://doi.org/10.1007/s40171-023-00351-2>
11. Y. Ning, L. Li, S.X. Xu, et al. How do digital technologies improve supply chain resilience in the COVID-19 pandemic? Evidence from Chinese manufacturing firms,

Frontiers of Engineering Management, **10**, 39–50 (2023)

<https://doi.org/10.1007/s42524-022-0230-4>

12. X. Li, D. Fan, Z. Li, M. Pan. The Impact Mechanism of Digitalization on Green Innovation of Chinese Manufacturing Enterprises: An Empirical Study, Sustainability, **15(12)**, 9637 (2023) <https://doi.org/10.3390/su15129637>
13. X. Li, L. Zhang, J. Cao. Research on the mechanism of sustainable business model innovation driven by the digital platform ecosystem, Journal of Engineering and Technology Management, **68**, 101738 (2023) <https://doi.org/10.1016/j.jengtecman.2023.101738>