

# FORMATION OF GLOBAL COMPETITIVE ENTERPRISE ENVIRONMENT BASED ON INDUSTRY 4.0 CONCEPT

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## ABSTRACT

*The rapid development of information technology, the acceleration of the international movement of goods, services, capital, the fragmentation of production, trade and consumption have led to the emergence of global production networks and business value chains, in which individual companies, regions or countries specialize in the execution of specific operations, and TNCs move to outsourcing much of your product creation or service delivery processes. The international competitiveness of companies and countries is beginning to be determined not only by the volume and technological structure of production or export, but by the creation of a higher share of value added in global chains. The evolution of global networking concepts is reflected in the theories of global manufacturing networks focused on the local and global dimensions of institutionalization, corporatization, and technologicalization and digitization.*

**Keywords:** Entrepreneurship, Outsourcing, Multinational Companies, International Competitiveness, A Global Value Chain.

## INTRODUCTION

The last decades have been characterized by the qualitative transformation and diversification of institutional forms of international business activity, which is primarily reflected in the redeployment of production sites of multinational corporations and their integration into production networks and value chains in order to ensure global competitive leadership. These shifts are clearly manifested in the process of global reproduction of a social product - from changes in structural parameters and geographical fragmentation of production with increasing volume of foreign investment, international distribution and consumption of manufactured goods and services to automation and digitization of production and logistics operations with the implementation of decentralized network management systems. As a result, the landscape of the global economy is changing, in which global production networks and value chains are transformed into a financial and technological core and a generator of dynamic movement of goods, services, investments, innovations. The concentration of these strategic resources in the divisions of multinational corporations is the key to TNC's global competitive leadership in all segments of the global market, with the dynamic competitive advantages of the national economies of the parent companies of their parent companies.

Increasing the international competitiveness of countries implies the development of national economic strategies, taking into account the sectorial participation of business entities in global value chains and their functional integration.

## REVIEW OF PREVIOUS STUDIES

Although the concept of global economic networking in the world literature is based on studies of economic development strategies in global manufacturers and value chains, there is still no clear consensus on its definition. In general, four influential areas of global networking research can be distinguished in the historical context:

Structure of value chains and competitiveness strategy (Drobyazko, et al., 2019); Durmanov et al., 2019); network relations in international business (Ivanov, et al., 2017) network subjects analysis (Liu et al., 2017); global value chains (Luong et al., 2017)).

The emergence and development of global production networks occurred within three stages. At the initial stage, the division of production involved the deployment of individual small fragments of the production process in countries with lower costs of production (low cost of labour, lower taxes, etc.) and imports of relevant components for the manufacture of the final product (Mitrega et al., 2017).

In the future, production networks began to embrace countries involved in different processes, and this included repeated border crossings of different components of the product before being completed in a high-tech country (Ndiaye et al., 2017); Dźwigoł-Barosz et al., 2019).

With the advancement of information technology and logistics, companies have moved much of the manufacturing and assembly of finished products to remote countries to reap the benefits of lower labour costs and/or proximity to sources of supply of raw materials, intermediates or end consumers (Hilorme, 2019a), Hilorme, et al., 2019b); Dźwigoł, 2019); Dźwigoł & Wolniak, 2018).

## METHODOLOGY

The methodological basis of the study is the historical-evolutionary, logical-structural and dialectical methods that are used in the fundamental provisions of economic theory, international trade, theories of globalization, information society, global competition and the international movement of factors of production. General scientific and specific research methods were used, namely: system analysis; structural analysis; historical and logical method; scientific abstraction, analysis and synthesis, systematic generalization.

## RESULTS AND DISCUSSIONS

In today's context, the most realistic strategies that can be recommended for businesses to increase their share of value in global chains are managing and developing their own brands, controlling the interface of software products (especially IT companies), and controlling the critical chain of chains. According to unique competencies or know-how or technology. Of course, in each specific case, the needs of companies and opportunities to promote their development may be different, but adherence to these general principles and approaches to attracting and improving the participation of domestic enterprises in global value chains are quite universal and important. Although there are many ways to integrate into global value chains, some of them have a dominant role to play, and therefore much more is used in practice. Fundamental differences in the position of companies in the hierarchy of relationships in the structure of global networks have a significant impact on the distribution of income.

Opportunities for initial integration and further optimization of participation in global chains require a revision of existing business models (Table 1).

Tools	Characteristic
Sales	Selling a product to a value chain or to a supplier of a particular chain
Offshore	Moving certain stages of the business to lower cost production locations
Outsourcing	Delegating individual business processes to external vendors
Foreign direct investment in the economies of other countries	Acquisition of a foreign company for its own production network, construction of foreign objects for new access to the markets
Foreign direct investment in the domestic economy	Receipts of foreign investments from companies that are involved in the network or are their suppliers
Joint ventures	Strategic collaboration, access to additional resources and risk sharing

Global value chains take advantage of the external openness of economies, allowing them to increase the level of specialization of individual economic agents (large companies, small and medium-sized enterprises (SMEs), cooperative organizations, etc.). International corporations are constantly looking for new locations to outsource the production of goods and services. National companies can supply intermediate products (raw materials, components, equipment, management or financial services, etc.) directly to the global value chain, or to their suppliers. Networking depends on demand for products, and usually sales for international companies with strong market positions provide greater stability, consistency and benefits of scale.

In the world, there is high competition between countries and territories that want to attract foreign direct investment, which requires considerable organizational efforts and effective governance to predictability build a positive reputation and clearly outline medium- and long-term economic and political and legal perspectives. Level of investment and volume of attraction. Foreign direct investment is an objective indicator of the government's efficiency in providing better conditions for entrepreneurship.

Domestic foreign direct investment contributes to the deepening of the links between national and foreign companies. The obvious benefits are capital inflows for modernization and innovation, which will help to secure a strong position in global value chains, primarily TNCs. At the same time, the compatibility of the interests of the potential investor with the national company, including, the level of control required, intellectual property rights, long-term goals, corporate and social responsibility, etc., should be taken into account.

The economic openness of countries enhances foreign trade and investment opportunities, which stimulates economic development. Improving the business environment and liberalizing foreign trade is especially important for SMEs, as the reduction in transaction costs of import-import is the most significant for them. At the same time, the opportunities for companies to move beyond the comparative advantages are increased, access to new markets is expanded and modernization towards high value-added goods is taking place.

Creating a joint venture is an effective way of integrating into global value chains. Domestic enterprises own intangible assets that are of interest to external partners and provide networking in the local market, which is critical for international business. The opening of a joint

venture will bring together ideas and resources, share risks and work to achieve the goals and objectives of both companies to integrate into global value chains. Alternative opportunities for international collaboration and global networking include licensing, franchising, joint marketing and/or manufacturing, and more.

Outsourcing is another way of engaging in global value chains. The approaches of this strategy are to search for sources of intermediate components, such as raw materials, components and other goods and services from external local or foreign suppliers. In this case, the national company creates its own global value chain and enhances competitiveness, taking advantage of external core competencies. Another outsourcing approach involves outsourcing individual business processes or services, which can be a competitive strategy for SMEs. In this case, outsourcing can be conditioned both by the high efficiency of the performance of the respective function by an external company and the unwillingness of the company to organize and perform certain low value added functions that are outside its core competencies.

The economic potential of the production of goods and the provision of services is largely determined by the effectiveness of innovation policy, which is one of the most important drivers of international competitiveness.

## RECOMMENDATIONS

In particular, in our view, the promising area is the development of digital services to increase the efficiency of SMEs, which have a high potential for practical application (modeled on successful EU programs).

Cloud Computing - gives SMEs access to high-security cloud technologies and enables innovative applications that are used in manufacturing, medicine or the public sector (eg - The Trusted Cloud online portal);

Smart Data - development, integration and elimination of barriers to widespread use and access (including for SMEs) to large-scale data analysis technologies using appropriate algorithms to use them for business, in particular for marketing, production, management improvement etc. (for example, the Smart Data Program);

Manage production processes in network structures for more efficient use of internal and external data flows. If production is characterized by a high level of fragmentation and division of labor, data processing requires a "smart" platform to coordinate processes that occur between different companies (eg PRO-OPT. Big Data Production Optimization in Smart Ecosystems, PAiCE Monitor);

Smart Farming is an intelligent integration of production processes in agriculture. The information obtained can be combined with weather forecasts, topographic data and their management, such as the harvesting process, etc.

Introduction of mobile autonomous robots capable of interacting with each other integrated into complex value chain management systems (example - ROBOTOP);

Encouraging the development of innovative methods of human-machine interaction, the use of 3D printing technologies in production, etc. (for example, Autonomies for Industry 4.0).

## CONCLUSIONS

Joining global value chains requires a mix of business-friendly factors, including good wages, high productivity, moderate inflation, quality of business environment, low political and economic risk, effective regulatory and tax regulators, technology development, cluster effects,

logistics operations (including cost and speed), digital data quality, economies of scale and consumer demand.

In order to stimulate innovative entrepreneurship, it is advisable to use specialized instruments, in particular fiscal ones (special tax breaks, tax credits or reduced rates of taxes on the production of innovative products, etc.). The role of the state is, first and foremost, in simplifying administration, organizing an appropriate modern infrastructure and a supportive innovation environment.

The effectiveness of participation in global value chains depends on the formation of a modern dynamic business environment characterized by macroeconomic stability, liberal legislation, along with strong formal and informal institutions and the rule of law. Additional contributing factors include having an efficient financial sector, a well-developed transport and telecommunications infrastructure, low levels of corruption, proper protection of intellectual property rights and a system of incentives for startups and SMEs.

## REFERENCES

- Drobyazko, S., Barwińska-Małajowicz A., Ślusarczyk B., Zavidna L., & Danylovyh-Kropyvnytska M. (2019). Innovative Entrepreneurship Models in the Management System of Enterprise Competitiveness. *Journal of Entrepreneurship Education*, 22(4).
- Durmanov, A., Bartosova, V., Drobyazko, S., Melnyk, O., & Phillipov, V. (2019). Mechanism to ensure sustainable development of enterprises in the information space. *Entrepreneurship and Sustainability Issues*, 7(2).
- Dźwigoł-Barosz, M., & Leoński, W. (2019). Gender diversity as an important element of diversity management in modern enterprises: case of Poland. *Virtual Economics*, 2(1), 7-30.
- Dźwigoł, H. (2019). Research methods and techniques in new management trends: research results. *Virtual Economics*, 2(1), 31-49.
- Dźwigoł, H., & Wolniak, R. (2018). Controlling w procesie zarządzania chemicznym przedsiębiorstwem produkcyjnym [Controlling in the management process of a chemical industry production company]. *Przemysł Chemiczny*, 97(7), 1114-1116.
- Hilorme, T., Perevozova, I., Shpak, L., Mokhnenko, A., & Korovchuk, Yu. (2019). Human Capital Cost Accounting in the Company Management System. *Academy of Accounting and Financial Studies Journal*, 23, (2).
- Hilorme, T., Zamazii, O., Judina, O., Korolenko, R., & Melnikova, Yu. (2019). Formation of risk mitigating strategies for the implementation of projects of energy saving technologies. *Academy of Strategic Management Journal*, 18(3).
- Ivanov, D., Tsipoulanidis, A., & Schönberger, J. (2017). Global supply chain and operations management. A Decision-Oriented Introduction to the Creation of Value.
- Liu, W., Bai, E., Liu, L., & Wei, W. (2017). A framework of sustainable service supply chain management: A literature review and research agenda. *Sustainability*, 9(3), 421.
- Luong, N.C., Wang, P., Niyato, D., Wen, Y., & Han, Z. (2017). Resource management in cloud networking using economic analysis and pricing models: A survey. *IEEE Communications Surveys & Tutorials*, 19(2), 954-1001.
- Mitrega, M., Forkmann, S., Zaefarian, G., & Henneberg, S.C. (2017). Networking capability in supplier relationships and its impact on product innovation and firm performance. *International Journal of Operations & Production Management*, 37(5), 577-606.
- Ndiaye, M., Hancke, G., & Abu-Mahfouz, A. (2017). Software defined networking for improved wireless sensor network management: A survey. *Sensors*, 17(5), 1031.