

“Contradictions of Enterprise Europe Network development in Ukraine”

AUTHORS

Alla Stepanova  <https://orcid.org/0000-0002-1711-7948>

 <https://publons.com/researcher/1931505/alla-stepanova/>

Oleksandr Bediukh  <https://orcid.org/0000-0001-6549-0897>

Iryna Novikova  <https://orcid.org/0000-0003-0440-2616>

 <https://publons.com/researcher/1929739/iryna-novikova/>

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Alla Stepanova, Ph.D., Associate
Professor, Department of Innovation
and Investment Management, Taras
Shevchenko National University of
Kyiv, Ukraine.

Oleksandr Bediukh, Ph.D., Senior
Researcher, Taras Shevchenko
National University of Kyiv, Ukraine.

Iryna Novikova, Ph.D. in Economics,
Senior Researcher, Taras Shevchenko
National University of Kyiv, Ukraine.



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Alla Stepanova (Ukraine), Oleksandr Bediukh (Ukraine), Iryna Novikova (Ukraine)

CONTRADICTIONS OF ENTERPRISE EUROPE NETWORK DEVELOPMENT IN UKRAINE

Abstract

Innovative development is the priority of the Ukraine's economic policy. In order to achieve the stated goal, it is necessary to ensure the transfer of innovative technologies to commercial production. The transmission of research and development (R&D) results to potential customers should be achieved through market mechanisms that cannot work effectively without, first of all, market research and contacts with interested counterparties.

The study aims to clarify the possibility of using the IT platform of the Enterprise Europe Network (EEN) as a tool for searching and establishing the contacts between domestic and foreign counterparties. The object of research was the EEN's IT platform and its mechanism for the innovative solutions implementation. The features of the EEN functioning in Ukraine were investigated. Using the EEN's tools, the marketing research of current trends in the economic sectors development in the context of co-operation processes was conducted. The possible advantages and disadvantages of the technology transfer in the Enterprise Europe Network were analyzed. The strategy for EEN's implementation in Ukrainian conditions was formulated. The methods of economic (SWOT and force field) analysis, the comparison method, and the economic-statistical method of analysis of actual data were used. The results of study allowed formulating the strategy and the recommendations for EEN's development in Ukraine.

Keywords

technology transfer, innovation diffusion, international
market, internationalization of innovative business,
EEN's tools, EEN's profiles

JEL Classification

O31, O32, O33

INTRODUCTION

The world country's socio-economic development, economic and political position on the world stage, the well-being, and opportunities for the personal realization of the population are determined by the competitiveness of the national economies and are equivalent to their participation in the international cooperation. The technological factor has become a critical one determining economic growth in the contemporary world economy and its importance is constantly increasing. The effectiveness of the innovation process is determined by the effectiveness of one of its main tool-technology transfer. The technology transfer, as well as the innovation process as a whole, takes place within the framework of national innovation systems, which are prone to high internationalization under the influence of globalization trends and global innovation system that is being formed.

The implementation of innovations requires the significant efforts, which are combined into an innovative process, including education, R&D, experimental production, industrial production, and market. All key relationships are extremely important, however, the transfer of

innovation on the market is, to a certain extent, the culmination of the innovation process.

The relevance of this scientific research is determined by the fact that effective tools that can help transfer innovation to the market are identified. Despite the significant limitations of the Ukrainian market for innovations and technological transfer, considerable attention is paid to studying the tools for implementing the innovation and technological transfer on the international market and, accordingly, for internationalizing the innovation business.

The formation of an effective mechanism for innovative solutions introduction establishes some interconnections between all components of the national innovation system. The search for ways of cooperation between representatives of the real sector and scientists, whose ideas are implemented in the latest developments and technologies, is a difficult problem. The technology transfer process in Ukraine is extremely disorganized and underdeveloped. Therefore, it is important to pay attention to the internationalization of this process and foreign technology transfer markets. In the era of information technology, the international community offers various models and approaches to address this issue. Thus, such software product like Enterprise Europe Network (the EEN) IT platform is noteworthy.

1. LITERATURE REVIEW AND THE PROBLEM STATEMENT

Technology transfer is one of the driving elements of moving forward to the country's economy and is a product of innovation. This process is devoted to the great attention of scientists because the stimulating effect from the efficiently working transfer of the latest technologies, access to innovations of representatives of the real business sector and internationalization of it cannot be overestimated. The theoretical issues of innovative development of the country's economy were dealt with by outstanding domestic scientists, among which the special attention should be paid to studies of the normative-methodological support of technology transfer by Mrikhin (2015), the impact of university research on innovation development of domestic economy by Geytsa, Seminozhenko, and Kvasnyuka (2007), the social component of technology transfer from the perspective of communication and interaction of various counterparties by Chukhrai (2002).

As Alcácer, Cantwell, and Piscitello (2016) point out, the competitive advantages and business strategies of enterprises, the management structure is precisely the triad of dynamic design of activity in international business that analytically portrays the likely shifts in the international business environment and actively facilitates the transfer of new technologies as a result of the new techno-economic paradigm of the information age. Important positions such as the motivation

that drives collaboration in firms' innovation efforts and the contrasts in inter-organizational features of technology cooperation are reflected in the research by Hagedoorn (1993), which has influenced the development of interfirm strategic alliances and demonstrated the importance of technology transfer in the world.

The existence of a probable relationship between R&D investment and technological enterprise development at the country level was highlighted in the research by Colovic and Lamotte (2015). They conducted an appropriate analysis during 2005–2010 in 54 countries, which proved that there is a positive relationship between access to information and communication technology infrastructure and the likelihood of technological entrepreneurship.

Guerrero and Urbano (2019) have been researching the relationship between entrepreneurship, innovation, and public policy. The results of their work are reflected in 186 publications that have been published for 59 years from 1970 to 2019. The analysis showed the transfer of technology to business in theoretical, managerial, and political aspects. Issues of diffusion of ideas and technologies, technological entrepreneurial initiatives are reflected in the work of Urbano, Guerrero, Ferreira, and Fernandes (2019), which also emphasizes the positive impact on exports, contributing to a new round of technological entrepreneurship and transfer initiatives innovation.

E. Genc, Dayanb, and O. Genc (2019) examined the impact of the degree of internationalization of technology transfer on the effectiveness of innovation in small business activities. Their research has confirmed the positive impact of internationalization on innovation development, and the emerging relationship is determined by the market and entrepreneurial orientation of business entities.

Cantwell (2017), in his research, reflected the direct relationship between innovation and internationalization and noted that they have been central to the development of the world since the first industrial revolution. He emphasized the importance of motivating the search for knowledge to establish the international business relationships through the combination of local innovation systems with international business and international knowledge sharing. The work of scholars such as Audretsch and Caiazza (2016) is devoted to an in-depth analysis of the interconnection of technology transfer, entrepreneurship, and institutional infrastructure. They conducted an international analysis of these issues and highlighted not only the importance of the competitiveness of the entity but also the economic efficiency of the territory where the business is conducted.

At the same time, most researchers of the innovative topic at the micro-level implicitly based on the assumption of the existence of ready-made scientific and technological developments that create proposals in the market of technological innovations. Therefore, most often the main attention is focused on the problems of choosing an effective innovation strategy, organization, financing, and stimulating of innovations.

Solomon and Martin (2003) investigated the impact of key strategic management characteristics on technology transfer and the effectiveness of their implementation. An empirical study of the authors found an important variable, this is time. After all, the uses of sophisticated technologies, their transfer, take considerable time. At the same time, existing experience reduces transmission time.

Lee and Kim (2016), applying an application toolkit (IP-MARKET, KIPRIS, Wintelips) and analyzing a set of technology transfer data in the

IP markets over 4 years (2008–2012), depend on the success of technology transfer on the number of inventors and activities in the relationship between small and medium-sized enterprises.

Several factors of various origins directly affect the technology transfer. It is worth to mention the external (exogenous – state, industry) and internal (endogenous – enterprise) factors. So, Yates (2010) identifies mainly macro-level factors: competition, political processes, and public expectations. At the same time, a group of scientists Peterson, De La Turrett, and Bartis (2001) consider that demand factors for new services and equipment, production and science cooperation, industrial consolidation and globalization are extremely important. A clear distinction between macro- and microfactors was made by Suarez (2004) who calls as external factors institutional influence and legislatively fixed state regulations, dynamic development of the market and technologies, diffusion of technologies and intellectual protection of innovations, while internal factors are company's technological advantages, and, as a result, creditworthiness, market position, strategic maneuvering and technology compatibility with previous developments.

Scientists and practitioners as a whole have formed basic theoretical principles and practical aspects of technology transfer. Omelyanenko, Semenets-Orlova, Khomeriki, Lyasota, and Medviedieva (2018) in their studies prove that technology transfer is a system of economic relations aimed at creating technical, organizational and economic conditions that guarantee the transition of production to a higher technical and socio-economic level based on science and technics and the use of various innovations (technical, social, etc.) to ensure the efficient operation of the enterprise. And Bazhal (2001), Katsura and Lymar (2010), and Salikhov (2003) consider the technology transfer as an object of macroeconomic relations, whose effective development directly affects the economic development of the country.

These problems are also considered in special manuals (Oslo, Frascati, Canberra), recommendations of world specialized organizations (WIPO, AUTM, UNCTAD, OECD, FLC, etc.). For example, the World Intellectual Property Organization (WIPO) notes that technology transfer is a process

when a technology developer makes his technology available to an entrepreneur who plans to use it. The United Nations Conference on Trade and Development (UNCTAD) (2001) defines the technology transfer as the process of disseminating the commercial technology in the form of technology transfer, which can or cannot be protected by a legal contract but includes interconnection (communication) between people who transmit certain knowledge to other people who buy it. The Council for Scientific and Industrial Research (CSIR) also considers the technology transfer a process but notes that intellectual property acquires the characteristics of a physical product or generates commercial benefits and is used for the social benefit. Such interpretations of wording options reflect the theory and practice of technology transfer in recent years in economically developed countries.

At the same time, domestic and foreign economic science does not consider the problems of technology transfer in a paradigmatic context, for the most part focusing on aspects of the practical implementation of technologies. Theoretical, methodological, and applied developments in technology transfer are predominantly local or sectoral, and the lack of fundamental foundations reduces their effectiveness.

The purpose of the article is to clarify the possibility of using the Enterprise Europe Network IT platform as a tool to find and establish the contacts between domestic and foreign counterparties.

2. RESEARCH METHODOLOGY

The following methods became the basis for the implementation of the research goal: analysis (the basic principles for the formation and functioning of the software product are analyzed), synthesis (practical and applied aspects of the implementation of the cooperation process are determined), generalization (the main problems that arise in the search for potential partners are identified), analytical (recommendations for enhancing the use of the Enterprise Europe Network IT platform in Ukraine are formulated) and strategic management (SWOT analysis and force field are used to highlight the strengths and weaknesses, as well

as the possibilities and threats of the EEN using an indication of key driving and braking forces to identify the possible strategies for enhancing the EEN use in Ukraine are being investigated).

3. RESEARCH FINDINGS

Modern development is impossible without an innovative component in enterprise activity. There is a known process of transition of innovation into a product, which covers the stages of creation (idea and development) and distribution (diffusion). It is the last stage of the innovation process that should ensure the active communication between the relevant groups (members) that are interested in this innovation. The introduction of innovation plays an important role in the competitive position of the economies of the countries. Today, this process has acquired several other signs and is called technology transfer. There is no single approach to the definition of this category among scientists and practitioners, however, there are two main visions: firstly, technology transfer is the process by which the knowledge, mechanisms, and equipment acquired through central budget-funded research are used for private and public needs and this process is formalized by entering into a bilateral or multilateral agreement between the natural and/or legal entities by which property rights and obligations regarding the technology and/or its components are established, changed or terminated; secondly, it is the transfer of scientific and technical knowledge and experience to provide the scientific and technical services, application of technological processes, production.

An important issue in technology transfer remains the issue of meeting a potential user (usually a business structure) and an intellectual product developer. The international experience in technology transfer demonstrates the creation of research and production and research associations and centers that provide a wide range of services in the field of technology transfer (for example, creating custom technologies, establishing the contacts between transfer entities, collecting the information and creating the databases on supply and demand for technology transfer, intellectual property protection, and commercialization of research and development results).

A study of the current state of the situation in ensuring the transfer of innovative developments to the real sector shows that there are a fairly large number of different organizations that are called upon to provide the organizational and informational support for innovative activities, to facilitate the experience and knowledge exchange, thereby to contribute the advancement of scientific and technological progress. It is worth noting the most influential of them:

- Enterprise Europe Network – a global system for business development, which includes more than 70 countries of the world;
- European Network of Business Innovation Centers (EBN), which brings together about 160 innovative business centers and similar organizations, such as incubators, innovation centers of entrepreneurship;
- Innovation Relay Centers Network;
- Innovation Regions in Europe Network;
- European Association of Technologies, Innovation and Industrial Information;
- Association of European Science and Technology Transfer Professionals (ASTP);
- Ukrainian Association of Business Incubators and Innovation Centers (UABIC);
- International Center for Scientific and Technical Information (ICSTI);
- International Innovation Center for Technological and Humanitarian Cooperation (IICDC);
- Russian Technology Transfer Network (RTTN);
- Ukrainian Technology Transfer Network (UTTN);
- National Technology Transfer Network (NTTN);
- Ukrainian Integrated Transfer Technology System (UITTS);

- Ukrainian Institute of Scientific and Technical Expertise and Information (UkrISTEI).

The European Union is one of the world leaders in research and innovation and as a supranational association has a sufficiently effective mechanism for supranational regulation of technology transfer.

Technology transfer centers can be combined into entire networks, which contribute to greater concentration of information resources and increase the commercial effectiveness of intermediary activities in the field of technology transfer. Well-known technology transfer networks operate in Europe, Asia, and the USA. Among them, it is worth highlighting the Enterprise Europe Network (EEN). The network is based on the use of adapted methodologies of the European Network of Innovation Relay Centers (IRCs) which allows for the exchange of technical information with all European innovation centers. EEN consists, for today, of more than 600 relay centers, the first of which was created in 1995. In 2011, Ukraine joined the European Entrepreneurship Network (EEN) by Article 21.5 of the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME) Program through the creation of the EEN-Ukraine consortium, which includes the representatives of business and government institutions, as well as scientific organizations, including Taras Shevchenko National University of Kyiv.

The Enterprise Europe Network provides the services in the following areas: 1) international activity (assistance in finding the reliable partners, making an offer or request for cooperation of a particular client in a common database and providing the information about companies that are interested in such types of transnational business); 2) technology transfer (Internet access to Europe's largest technology database, updated weekly); 3) access to financing (assessment of the real financial situation of an enterprise, search for necessary resources, in particular, venture capital and loans, assistance from representatives of state or European authorities in the form of grants for introducing the innovations); 4) research funding; 5) advising and discussing the issues of EU legislation and standards (reports on existing business opportunities, European policies regarding the specific programs related to the business of client); 6) protection of intellectual property and patents.

Network partners include the European Space Agency, the Joint Research Center, various European organizations (European Network of Business Innovation Centers), national organizations from Germany, France, Portugal, Spain, and organizations representing the interests of European Union business outside it.

The list of the EEN services is wide enough, including:

- Providing the practical information on market opportunities, European legislation, assisting the entrepreneurs in finding business partners using its database of business and technological cooperation, providing the information on tender opportunities and international cooperation;
- development of research and innovation competencies of enterprises by supporting the formation of synergies with researchers and research institutions, promoting technological cooperation and organizing various networking events (forums, platforms, conferences, seminars, etc.);
- support in disseminating R&D results, participation in research programs and obtaining funding, in particular, in the 8th EU Framework Program for Supporting Research and Technological Development – Horizon 2020, the biggest EU research and innovation program.

The main goals of the Enterprise Europe Network are: to create an integrated network of business support services based on the experience of two networks of 270 Euro Info Centers (EIC) and 250 Innovation Relay Centers (IRC) and to increase synergies between all network partners in order to provide integrated services; to improve access of small and medium-sized businesses to network services according to the “No wrong door” concept; to facilitate administrative procedures for network members; to provide professionalism and quality of services.

Enterprise Europe Network IT platform is a software tool that assists in finding the international partners for registered members of the Enterprise Europe Network (EEN), as well as carry out daily activities related to the partnership and network-

ing process. It offers the opportunity to create, publish, and promote profiles, events, manifestations of interest (EOI) and partnership agreements, as well as participate in industry groups and communicate with other colleagues from the EEN in a single, user-friendly system.

Enterprise Europe Network IT Platform consists of three large components:

- Intranet;
- partnering tools;
- forums.

The Enterprise Europe Network IT platform is also often used to refer only to partnering tools.

Using the capabilities of this platform, we conducted the marketing intelligence on the relevance of building the cooperation between business representatives in Ukraine and foreign partners in various sectors of the economy. The study showed that it is the segment of fast capital turnover that is the most interesting for business entities around the world because it allows them to make a profit without high risks/threats quickly. Therefore, we see that in the “Consumer” and “Industrial products” sectors, the largest number of registered profiles is from different countries and the trend continues (Table 1).

It is these areas of cooperation that are most in-demand in Ukraine, where there are already certain developments, such as business proposals, technology requests, preparation for a real contract, etc. (Figures 1, 2).

Accordingly, entrepreneurs also show the same interest (Figure 2). Quantitative measurement is low, but the general trend is upward. This is a confirmation of the low level of innovation in the domestic economy, of the low level of financing and stimulation of this area, respectively, of low interest in the development of new products.

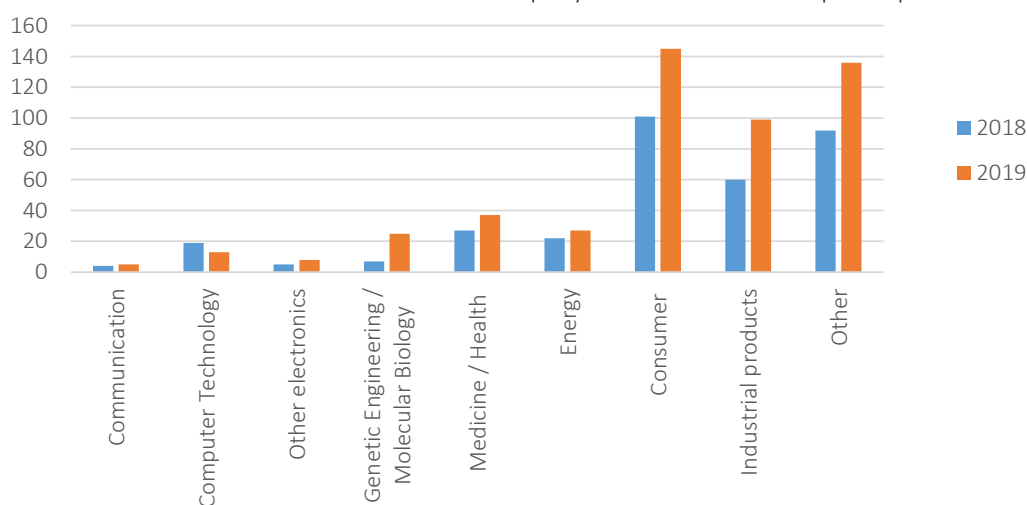
However, it is worth paying attention to the fact that when establishing certain contacts, the largest part by types of profiles of business structures is precisely the “Business offer” (Table 2). This only confirmed our observation that very few activities are involved in promoting and popularizing this

Table 1. Number of profiles of potential counterparties by market sector in the EEN system for 2018 – first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Market sectors	Number of profiles of enterprises			
	Who are interested in cooperation with Ukraine		Ukrainian enterprises entering the international level	
	2018	2019	2018	2019
Communication	240	206	4	5
Computer technology	617	569	19	13
Other electronics	287	320	5	8
Genetic engineering/molecular biology	387	418	7	25
Medicine/health	814	869	27	37
Energy	367	370	22	27
Consumer	1,504	1,557	101	145
Industrial products	1,361	1,335	60	99
Other	1,605	1,600	92	136

Source: Developed by the authors based on the Enterprise Europe Network in Ukraine (2019).

**Figure 1.** The number of profiles of business entities in the EEN system that are at certain stages of cooperation with entrepreneurs from Ukraine for 2018 – first half of 2019

Source: Developed by the authors based on the Enterprise Europe Network in Ukraine (2019).

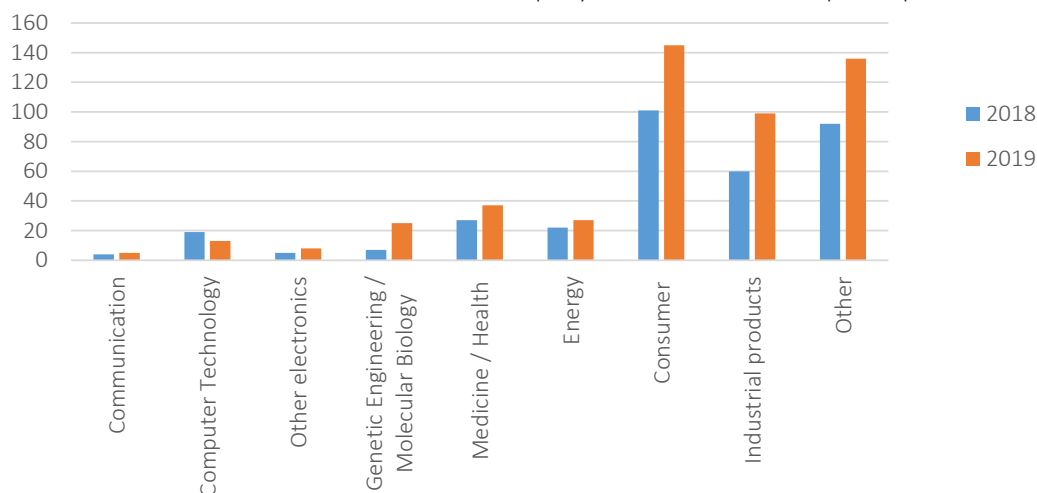
**Figure 2.** The number of profiles of domestic business entities in the EEN system that are interested in cooperation with entities from other countries for 2018 – first half of 2019

Table 2. Systematization by types of profiles of business entities in the EEN system which are interested in cooperation with entities from Ukraine for the first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Profile type/market sector	Business offer	Business request	R&D request	Technological offer	Technological request	Total
Communication	109	7	2	84	4	206
Computer technology	340	20	4	180	25	569
Other electronics	149	13	2	136	20	320
Genetic engineering/molecular biology	220	21	–	162	15	418
Medicine/health	444	47	3	334	41	869
Energy	161	17	3	168	21	370
Consumer	1,227	162	2	2	32	1,557
Industrial products	792	82	6	388	68	1,335
Other	1,124	121	3	305	47	1,600

tool. Weak awareness of the business environment and low public sector interest lead to the weak work of the EEN platform in Ukraine. In the second place, there is the “Technological offer,” which allows us to state the appropriate level of training of domestic personnel and technologies and the interest of foreign partners in cooperation with domestic business entities. Such offers demonstrate a large field of opportunities for foreign and domestic business.

If we consider such a market sector as “Communication,” then the information we get from the EEN system allows us to draw the conclusions about the number of profiles of entrepreneurs who are interested in working with representatives of the domestic market and we can see what kind of cooperation there is, that is, the type of profile (Table 3).

Table 3. The number of profiles of entrepreneurs by market sector “Communications” in the EEN system, which are interested in cooperation with Ukraine for the first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Profile type	Total	Actual
Business offer	3,144	126
Business request	392	10
R&D request	19	2
Technological offer	1,141	95
Technological request	148	7
Total	4,844	240

In the type of profile “R&D request” of the “Communication” sector, two partnership agreements (PA) were signed with domestic entrepre-

neurs, however, cooperation is expected with 58 representatives from around the world (Tables 4, 5).

Table 4. Analysis of cooperation by type of profile “R&D request” in the context of Ukraine for the first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Cooperation status	Expressions of interest (EOI)
First contact	21
Further information is provided	79
Cooperation is expected	58
The PA was signed	2
Negotiations are underway	1
Rejected	3

Table 5. Geography of profile of country of origin for entrepreneurs having the profile type “R&D request” and are interested in cooperation with Ukraine for the first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Profile country of origin	Number of requests
France	3
Germany	1
Greece	1
Hungary	1
Italy	2
Romania	1
South Korea	9
Spain	2
Turkey	1
United Kingdom	3

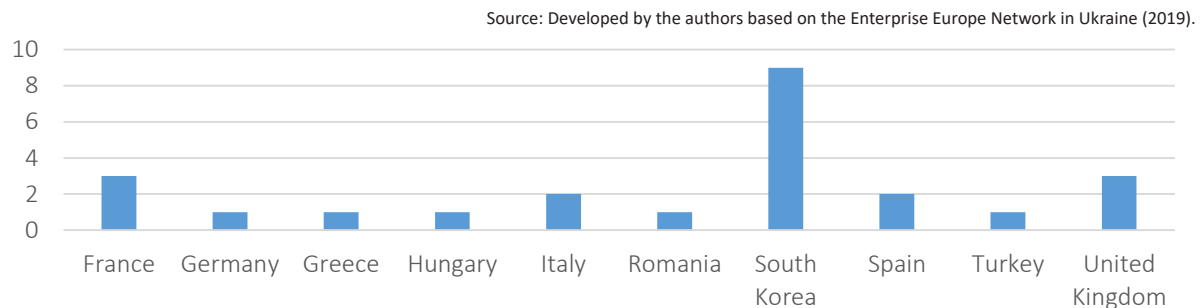


Figure 3. The number of requests for cooperation profile country of origin for entrepreneurs interested in cooperation with Ukraine for the first half of 2019

The market sector “Computer technologies” is interesting for research and analysis, where such subsectors as “Computer graphics” and “3D,” based on the information that we get from the EEN system, are very popular today. By number and type of profiles of entrepreneurs who are interested in cooperation with representatives of the domestic market, we can see what kind of cooperation there is (Tables 6, 7).

Table 6. Number of profiles of entrepreneurs in the market sector “Computer technologies” in the EEN system that are interested in cooperation with Ukraine for the first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Profile type	Total	Actual
Business offer	3,139	372
Business request	386	18
R&D request	17	5
Technological offer	1,125	199
Technological request	155	23
Total	4,822	617

Table 7. Number of requests to Ukraine in the subsectors “Computer graphics” and “3D” for the first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Profile type	Number	Country	Number
Business offer	15	Poland	3
		Turkey	1
		Spain	1
		Croatia	2
		Romania	3
		United Kingdom	1
		Czech Republic	1
		Bosnia and Herzegovina	1
		France	1
		Malta	1

Profile type	Number	Country	Number
Business request	2	Poland	1
		China	1
R&D request	0	–	–
Technological offer	5	Spain	3
		Germany	1
		Austria	1
Technological request	0	–	–
Total	22	–	22

Table 8. Analysis of cooperation in the context of Ukraine in subsectors “Computer graphics” and “3D” for the first half of 2019

Source: Compiled by the authors based on the Enterprise Europe Network in Ukraine (2019).

Cooperation status	Expressions of interest (EOI)
First contact	–
Further information is provided	13
Cooperation is expected	12
The PA was signed	–
Negotiations are underway	–
Rejected	10

The built-in Merlin in the EEN website also deserves attention. These are useful tools for promoting the customer profiles and for organization of events among users who are probably looking for partnership opportunities with other businesses on the network. There are two types of Merlin widgets, depending on the role of the subject in the network:

- partner widget (for use by affiliate organizations on their own websites. This widget allows the customers (anonymous and subscribed) to search, show interest, and register on the network);

Source: Developed by the authors.

	Opportunities (O)	Threats (T)
	<ol style="list-style-type: none"> 1. Possibility to take key positions. 2. Entering new markets. 3. Development of new price offers. 4. The involvement of scientific personnel and the development of the latest technologies. 5. Development of using new technologies. 6. Improving the efficiency of domestic production due to a decrease in energy and material consumption of products. 7. Improving Ukraine's reputation in the international market. 	<ol style="list-style-type: none"> 1. The imperfection of the regulatory framework for technology transfer relations. 2. Inadequate infrastructure development of industries. 3. Lack of demand for innovative products and the latest technology. 4. The lack of labor resources and highly qualified personnel and their low competence. 5. Change in market conditions. 6. Inappropriate operating conditions for all participants in the process and the market. 7. The instability of the political and economic situation.
Strengths (S)	Strategy "S&O"	Strategy "S&T"
<ol style="list-style-type: none"> 1. Unlimited demand for these products in various sectors of the economy and abroad. 2. A new underdeveloped market segment. 3. Lack of competitors. 4. High profitability. 5. High-quality control. 6. Modern technology. 7. Wide opportunities for financing priority research areas (projects, grants, equipment purchase). 8. Positive image. 	<ol style="list-style-type: none"> 1. Possibility to occupy a significant share of the domestic market. 2. Attracting investment in innovation from international markets. 3. Application of the latest technology. 4. Fast growth and conquering of new markets. 5. The involvement of highly qualified personnel increases the image of the company. 	<ol style="list-style-type: none"> 1. Diversification of activities, which will help reduce the level of risk. 2. Reducing the cost of production through the use of new and energy-saving technologies. 3. Development and implementation of government programs and projects to stimulate the development of industries.
Weaknesses (W)	Strategy "W&O"	Strategy "W&T"
<ol style="list-style-type: none"> 1. Lack of a clear regulatory framework for financial and legal relations in the market. 2. Long payback period. 3. High probability of bankruptcy associated with the wrong choice of product. 4. Low awareness company and potential customers. 5. Ensuring the timely implementation of the terms of contracts 6. Lack of economic incentives at the state level. 	<ol style="list-style-type: none"> 1. Formation and implementation of modern tools for protecting the domestic market and upholding the interests of national producers. 2. Attracting new technologies for effective activities. 3. Attracting marketing tools to increase customer awareness. 4. Optimization of organizational structure will reduce organizational costs. 	<ol style="list-style-type: none"> 1. State protection and support for the industry, the absence of which will lead to the chaotic development of industry entities. 2. Expanding the list of objects for investment. 3. Creation of joint ventures with the participation of foreign companies with a high level of reliability and reputation. 4. Significant costs can lead to a significant increase in the value of goods, which can lead to the loss of consumers, markets, etc.

Figure 4. Correlation matrix of the EEN SWOT analysis

- stakeholder widget (for use by interested parties on third-party websites. This widget allows the interested parties to create a request that reflects specific active profiles related to their industry, that is, information technologies in the form of a live channel, client registration on the network, and search function).
- Confidence in the successful promotion of any product can only be given by the possession of comprehensive information about the economic conditions in which the business structure is going to work or is already working. This leads to the use of one of the strategic analysis tools – SWOT analysis – from the perspective of a potential user of the EEN international technology transfer system (Figure 4).

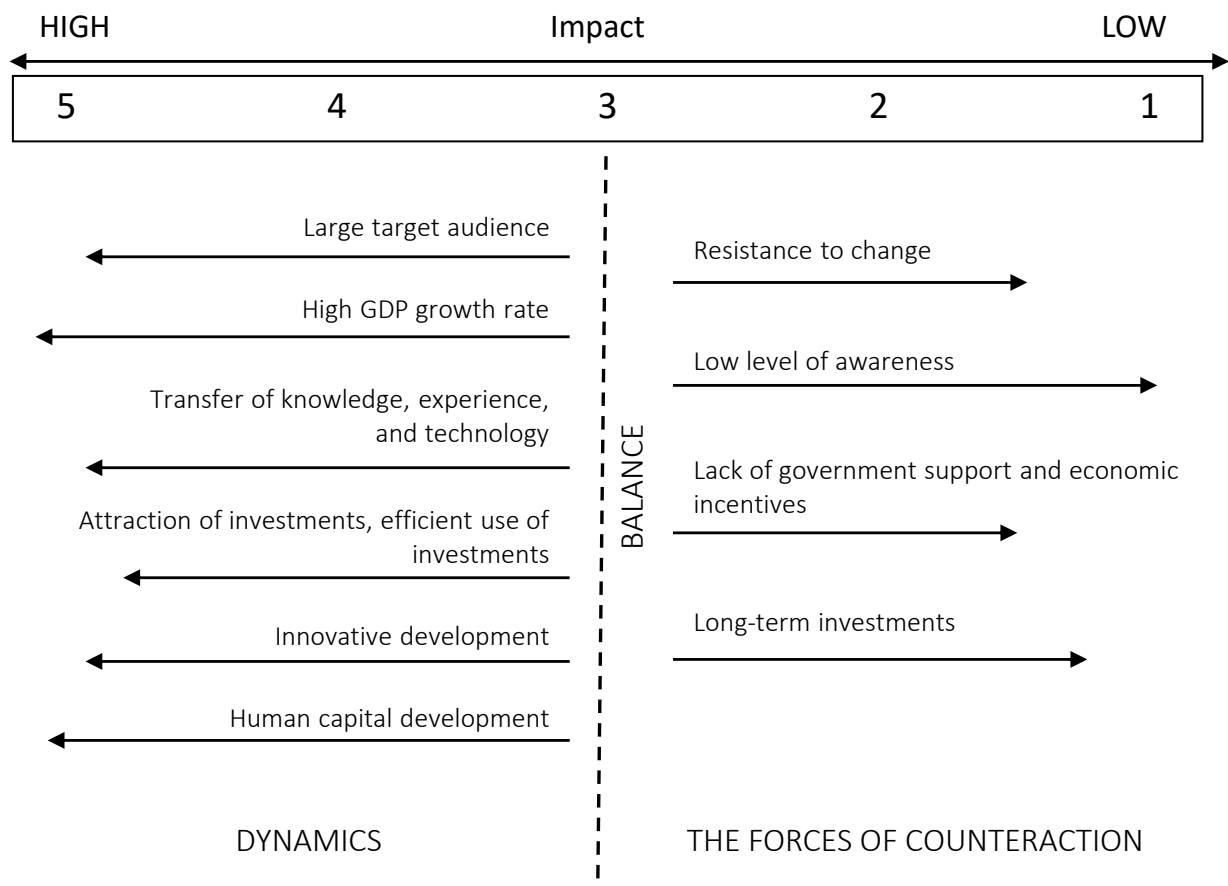


Figure 5. Force field of the EEN system in Ukraine

All four fields of the strategic tool will allow us to consider possible combinations between threats and opportunities, strengths and weaknesses of using the EEN for technology transfer. It is worth noting some features of the corresponding fields and their characteristics. So, the S&O field provides the strategies that use the strengths of the EEN system to realize the opportunities that appear in the external environment; S&T field – strategies that use the strengths to eliminate the threats that may lead to undesirable consequences; “W&O” field – strategies that help minimize the weaknesses and use the capabilities of the external environment; “W&T” field – strategies that minimize the influence of weaknesses and environmental threats on the further implementation of the capabilities of the EEN system.

For a comprehensive vision of the use of the EEN system in Ukraine, we apply the method of analysis of force fields.

This method allows us to identify the driving and counteraction forces and develop strategies that will strengthen strengths and minimize the threats because it is believed that the forces that counteract the change are balanced by other forces acting against them. The force field analysis of the use of the EEN system in Ukraine is based on a preliminary SWOT analysis and allows us to identify the key forces of influence on the further development of technology transfer in Ukraine of positive and negative nature. Each force of influence has its weight, which is estimated by an expert method, and, therefore, has a certain subjectivity. The degree of influence is indicated by the length of the arrow on the graph.

The analysis makes it possible to formulate the strategies and activities for the successful implementation of the EEN international technology transfer system, depending on the expected result.

CONCLUSION

The conducted marketing research of the Enterprise Europe Network IT platform system allows to notify following: a) the main advantage of this platform is the systematization and compilation of data on current development trends in Ukraine and abroad; b) the EEN system allows “meeting” the interested parties without significant time costs; c) choosing a future business partner, one can obtain the exceptional information on cooperation; d) the EEN system is a kind of guide in the search for the most relevant and most profitable niche in the business, as it allows to monitor the changes in the business environment over time; e) the introduction of incentives to achieve joint results; f) the use of successful examples of international experience through the involvement of international organizations, government officials, and professional consultants.

The low level of use of the capabilities of the EEN platform in Ukraine is associated with: a) low awareness of the business environment about this tool for searching and future cooperation with potential business partners, so it is necessary to conduct the popularization of the EEN through various communication systems, b) high levels of business riskiness to use the latest technology due to the unstable macroeconomic environment and incomprehensible rules of behavior on the market.

REFERENCES

- Alcácer, J., Cantwell, J., & Piscitello, L. (2016). Internationalization in the information age: A new era for places, firms, and international business networks? *Journal of International Business Studies*, 47(5), 499-512. <https://doi.org/10.1057/jibs.2016.22>
- Audretsch, D., & Caiazza, R. J. (2016). Technology transfer and entrepreneurship: cross-national analysis. *The Journal of Technology Transfer*, 41(6), 1247-1259. <https://doi.org/10.1007/s10961-015-9441-8>
- Bazhal, Ju. M. (2001). Mizhnarodnyi transfer tekhnolohii yak faktor ekonomichnoho rozvytku [International technology transfer as a factor of economic development]. *Ekonomichnyi rozvytok i derzhavna polityka: praktykum*, 6: Mizhnarodna ekonomika. *Torhov-elna polityka [Economic development and state policy: tutorial*, 6: *International economy. Trade policy]* (pp. 20-29). Ukr. akad. derzh. upr. pry Prezydentovi Ukrainy, In-t pidvyshchennia kvalifikatsii kerivnykh kadrov. Kyiv: K.I.S (in Ukrainian). Retrieved from http://ekmair.ukma.edu.ua/bitstream/handle/123456789/329/Bazhal_Mizhnarodniy.pdf?sequence=1
- Cantwel, J. (2017). Innovation and international business. *Industry and Innovation*, 24, 41-60. Retrieved from <https://www.tandfonline.com/doi/full/10.1080/13662716.2016.1257422>
- Chukhrai, N. I. (2002). Transfer i komertsializatsiia tekhnolohichnykh innovatsii [Transfer and commercialization of technological innovations]. *Ekonomika promyslovosti – Industrial economy*, 3(17), 160-166 (in Ukrainian).
- Colovic, A., & Lamotte, O. (2015). Technological environment and technology entrepreneurship: a cross-country analysis. *Creativity and Innovation Management*, 24(4), 617-628. <https://doi.org/10.1111/caim.12133>
- Enterprise Europe Network in Ukraine (2019). Retrieved from <https://een.ec.europa.eu/about/branches/ukraine>
- Genc, E., Dayan, M., & Genc, O. F. (2019). The impact of SME internationalization on innovation: The mediating role of market and entrepreneurial orientation. *Industrial Marketing Management*, 82, 253-264. <https://doi.org/10.1016/j.indmarman.2019.01.008>
- Guerrero, M., & Urbano, D. (2019). Effectiveness of technology transfer policies and legislation in fostering entrepreneurial innovations across continents: an overview. *The Journal of Technology Transfer*, 44(5), 1347-1366. <https://doi.org/10.1007/s10961-019-09736-x>
- Hagedoorn, J. (1993). Understanding the rationale of strategic technology partnering: Interorganizational modes of cooperation and sectoral differences. *Strategic Management Journal*, 14(5), 371-385. <https://doi.org/10.1002/smj.4250140505>
- Heits, B. (2007). *Stratehichni vyklyky XXI stolittia suspilstvu ta ekonomitsi Ukrainy, Ekonomika znan – modernizatsiynyi proekt Ukrainy (Tom 1) [Strategic challenges of the 21st century to the society and economy of Ukraine, knowledge economy – Ukrainian modernization project (Vol. 1)]* (544 p.). Institut ekonomiky ta prohnouzuvannia, Kyiv: Feniks (in Ukrainian). Retrieved from <https://www.yakaboo.ua/strategichni-viklyki-xxi-stolittja-suspil-stvu-ta-ekonomici-ukraini-u-3-tomah-komplekt-z-3-knizhok.html>
- James, K. C., Wen-Hong, C., Stacy, F. L., & Leo, Y. T. (2010). *Evaluating global technology transfer research performance* (pp. 1-6). 7th International Conference on Service Systems

- and Service Management, IEEE. <https://doi.org/10.1109/ICSSSM.2010.5530213>
13. Katsura, S. M., & Lymar, V. V. (2010). Pryntsypy derzhavnoho rehuliuвання mizhnarodnoho transferu znan [Principles of state regulation of international knowledge transfer]. *Ekonomichnyi visnyk Donbasu – Donbas Economic Bulletin*, 1, 43-46 (in Ukrainian). Retrieved from <http://dspace.nbuv.gov.ua/handle/123456789/23891>
 14. Kuzminska, N. L. (2009). *Transfer tekhnologii yak forma prosuvannia innovatsii v Ukraini* [Transfer of technologies as form of advancement of innovations in Ukraine]. NUKHT: Naukovi pratsi (in Ukrainian). Retrieved from <http://dspace.nuft.edu.ua/jspui/handle/123456789/566>
 15. Lee, D.-Y., & Kim, S.-G. (2016). Determinants of technology transfer for convergence management strategy of small and medium enterprises. *Journal of Digital Convergence*, 4(3), 83-94. <https://doi.org/10.14400/JDC.2016.14.3.83>
 16. Massey, P. A. (1997). A knowledge exchange perspective of technology transfer. *Proceedings of the Thirtieth Hawaii International Conference on System Sciences, IEEE*, 106-115. <https://doi.org/10.1109/HICSS.1997.661576>
 17. Mrykhina, O. B. (2018). *Transfer tekhnologii z universytetiv u biznes-seredovyshe: paradyhma, kontseptsia ta instrumentarii otsiniuvannia* [Technology Transfer from Universities to the Business Environment: A Paradigm, Concept, and Assessment Toolkit] (440 p.). Lviv: Lvivska politehnika (in Ukrainian).
 18. Mrykhina, O. B., Mirkunova, T. I., & Stoianovskiy, A. R. (2015). The methodological and regulatory framework for technology transfer. *Problems of Economy*, 1, 126-132. Retrieved from http://nbuv.gov.ua/UJRN/Pekon_2015_1_17
 19. Peterson, D. J., La-Tourrette, T., & Bartis, J. T. (2001). New forces at work in mining: industry views of critical technologies. *RAND Report*. Retrieved from https://www.rand.org/pubs/monograph_reports/MR1324.html
 20. Rodionova, I. V. (2012). Osnovni formy ta etapy zdiisnennia transfera tekhnologii promyslovykh pidpriemstv [Main forms and stages of technology transfer of industrial enterprises]. *Visnyk Zaporizkoho natsionalnoho universytetu – Zaporizhzhia National University Bulletin*, 3(15), 59-64 (in Ukrainian). Retrieved from <http://web.znu.edu.ua/herald/issues/2012/eco-3-2012/059-64.pdf>
 21. Salikhova, O. B. (2003). *Udoskonalennia metodologii statystychnoho analizu mizhnarodnoho transferu tekhnologii v Ukraini* [Improvement of methodology of statistical analysis of international technology transfer in Ukraine]. Dys. ... kand. ekon. nauk: 08.02.02] (199 p.). Kyiv: NAN Ukrainy, Tsentr doslidzhen nauko-vo-tekhnichnoho potentsialu ta istorii nauky im. G. M. Dobrova (in Ukrainian). Retrieved from <http://www.disslib.org/udoskonalennja-metodolohiyi-statystychnoho-analizu-mizhnarodnoho-transferu-tekhnologiy.html>
 22. Seaton, R. A. F., & Cordey-Hayes, M. (1993). The development and application of interactive models of industrial technology transfer. *Technovation*, 13(1), 45-53. [https://doi.org/10.1016/0166-4972\(93\)90013-L](https://doi.org/10.1016/0166-4972(93)90013-L)
 23. Solomon, R. M., & Martin, X. (2003). Technology transfer and implementation: exploring the 'time-to-build' fabrication facilities in the global semiconductor industry. *Academy of Management Proceedings*, 1. <https://doi.org/10.5465/ambpp.2003.13792212>
 24. Suarez, F. (2004). Battles for technological dominance: an integrative framework. *Research Policy*, 33, 271-286. <https://doi.org/10.1016/j.respol.2003.07.001>
 25. The Council for Scientific and Industrial Research (2019). Retrieved from <https://www.csir.co.za>
 26. United Nations Conference on Trade and Development (2001). *Transfer of technology*. New York; Geneva. Retrieved from <http://www.unctad.org/en/docs/psit-eiitd28.en.pdf>
 27. Urbano, D., Guerrero, M., Ferreira, J. J., & Fernandes, C. I. (2019). New technology entrepreneurship initiatives: Which strategic orientations and environmental conditions matter in the new socio-economic landscape? *The Journal of Technology Transfer*, 44(5), 1577-1602. <https://doi.org/10.1007/s10961-018-9675-3>
 28. World Intellectual Property Organization. (2019). Retrieved from https://www.wipo.int/meetings/en/topic.jsp?group_id=24
 29. Yates, A. (2010). *What drives technology development?* Retrieved from www.ieaust.org.au