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FACTORS OF NETWORK ECONOMY DEVELOPMENT IN UKRAINE: ECONOMIC AND LEGAL CONTEXT

Urgency of the research. In modern conditions of global economy development, non-material factors of production, in particular information and knowledge, become the main factor of innovative development of the economy and the basis for increasing the country competitiveness. The use of information and communication technologies (ICT) as one of the most important mechanisms for managing the network economy, provides a reduction in transaction costs and production efficiency increasing, more efficient business model use, reduction in the production and sales cycle, more accurate forecasting of the economic conjuncture. In turn, the network economy allows enterprises to use their potential more widely and reach set goals.

Target setting. Today, when competition becomes a global phenomenon, the success of developed economies depends to a large extent on the ability to acquire, develop and disseminate knowledge, information and introduce advanced technologies. In order to ensure the process continuity, it is necessary to clearly identify the network economy catalyzing and constraining factors, which will help to generate greater economic benefits and will manage the risks and negative consequences of the ICT spread in business and society.

Actual scientific researches and issues analysis. When studying the network economy development factors, the following works are of great importance: the

studies by M. Castells [1], in which the author analyzed current trends leading to the network economy formation in details, and by K. Kelly [2], who determined a number of features and principles of the "network economy" in market conditions. Practical aspects of this problems in Ukrainian scientific thought were investigated by Belyatskaya T.N, Knyazeva L.P. [3], Vyshnevsky A.S [4], Zybareva O.V., [5] Prognimak O.D. [6], Sokolova G. B. [7].

Uninvestigated parts of general matters defining. The issue of economic development factors of economic structures, considering the specifics of the network principles of the functioning of the economic mechanism and the peculiarities of the domestic market environment requires sufficient studying.

The research objective is to identify the network economy development factors in Ukraine that deter / facilitate the business development in Ukraine on the basis of analysis of international indexes of the information environment development, to justify threats to information security of doing business in Ukraine.

The statement of basic materials. The factors determining the willingness of Ukrainian enterprises to participate in the network economy on the basis of the dynamics analysis of the network readiness (NRI 2010-2016) and doing business (DB 2010-2018) indexes using SWOT analysis are described in Table 1.

Table 1

Network readiness of Ukrainian enterprises in 2010-2018

Strengths	Index	Change in dynamics	Opportunities
International Internet traffic, Kb / s per user	NRI ₂₀₁₆ 63	↑33	Open access to Internet resources
Availability of digital content	NRI ₂₀₁₆ 48	↑9	Receiving e-services due to affordable tariffs for telecommunication services
Monthly subscription fee for fixed (wired) broadband Internet access	NRI ₂₀₁₆ 2	↑9	Introduction of intellectual information and information-analytical technologies, integrated systems of databases and knowledge
Ownership registration	DB ₂₀₁₈ 64	↑100	Quick and transparent procedure for registering real estate rights

Weaknesses	Index	Change in dynamics	Threats
Effectiveness of legislative bodies work	NRI ₂₀₁₆ 120	↑13	Protracted process of modernization of the material and technical base
Legislation on ICT	NRI ₂₀₁₆ 74	↑23	Insufficient protection of information resources
Independence of courts	NRI ₂₀₁₆ 131	↑2	Inability to use modern e-democracy tools
Effectiveness of legal system for disputes settlement	NRI ₂₀₁₆ 123	↑14	Difficulty in obtaining an equitable solution while disputes settlement
Protection of intellectual property	NRI ₂₀₁₆ 120	↓8	Decrease in the number of inventions, industrial designs, rationalization proposals, etc.
Efficiency of ICT use by government	NRI ₂₀₁₆ 122	↑8	Non-involvement of enterprises in the formation, discussion and implementation of public policy
Dealing with construction permits	DB ₂₀₁₈ 140	↑146	Growth of investment risks due to delaying procedures in obtaining permits
Protection of minority shareholders	DB ₂₀₁₈ 81	↑14	Deteriorating corporate governance and protecting minority investors' rights
International trade regulation	DB ₂₀₁₈ 119	↑20	Additional barriers when entering new markets or market segments
Contracts enforcement	DB ₂₀₁₈ 82	↑71	The growth of time and financial costs in resolving a commercial dispute in the local court of first instance
Insolvency resolution	DB ₂₀₁₈ 149	↓3	Enterprise closure due to the complexity of enterprises solvency restoring procedure
Electrical connection	DB ₂₀₁₈ 128	↑41 compared with 2012	Duration of the procedure of putting into operation new divisions of enterprises, warehouses, etc.
Electricity production, kW / person	NRI ₂₀₁₆ 51	0 same place as in 2010	Growth of current expenses due to significant energy intensity production
Conclusions:			
<ul style="list-style-type: none"> - positive dynamics of infrastructure development and affordable tariffs for telecommunications services; - regulatory environment does not create favorable conditions for the use of ICT in business. 			

Source: created by the author.

In general rating of 139 countries around the world in terms of the ICT development level in 2016, Ukraine has taken a 64 rating position [8], having improved by 7 points compared to last year, ahead of even EU members, such as Romania and Bulgaria, which indicates the ICT development is promising.

This was facilitated by the availability of tariffs for mobile communications and telecommunications services; high level of literacy and awareness of adult in ICT; the growth in sales of smartphones (which are multifunctional and high-tech devices that can replace other accessories), especially in small towns and villages; accessibility of a high-speed 3G network and the recent launch of 4G network (LTE).

In recent years, the facilitating factor of the regulatory environment has become simplification of the mechanisms for obtaining permits and registration procedures, which affected their number, duration and cost (the Unified State Register of Legal Entities and Individual Entrepreneurs, whose information is open and available for public was created, electronic registration

of business entities was introduced) [9]; Expansion of free electronic access for the population to individual registries (in particular, from 2015 to the State Land Cadastre through the Public Cadastre map map.land.gov.ua).

Among the main constraints in the development of the infrastructure and the regulatory environment of network readiness for the period 2010-2018, the insufficient legislative support for the development of the information society formation issues, the network economy, e-government, e-commerce, etc. should be noted.

At the same time, the following issues remain open: the independence of courts; the effectiveness of legal system for disputes settlement; the strengthening judiciary responsibility to society; the implementation of the updated constitutional principles of justice at the legislative level to ensure the independence (depoliticization) of the judiciary; the establishment at the law level of a mandatory pre-trial procedure for the settlement of disputes in specific cases, which will provide

the basis for alternative methods of disputes resolution development, such as mediation, etc. [10].

The problem of protecting intellectual property also remains urgent. In recent years particularly acute is the issue of software piracy and plagiarism, high level of unlicensed software and computer games use.

To analyze the level of network readiness of both the state and business, it is important to legislate and implement it in practice. The study of Ukraine's rating indicators made it possible to establish the presence of a certain pattern: low positions in the rating are where real

business processes are evaluated (international trade, taxation, connection to power networks, partially it is construction and bankruptcy), it is a little higher in the case of exclusively legislative activity.

The positive dynamics of Ukraine's network readiness for 2010-2016 allowed the construction of its forecast for 2017-2020 (since the number of countries participating in the NRI Index has changed over the years, the NRI estimate was used for the forecast, but not the place in the ranking) (Figure 1).

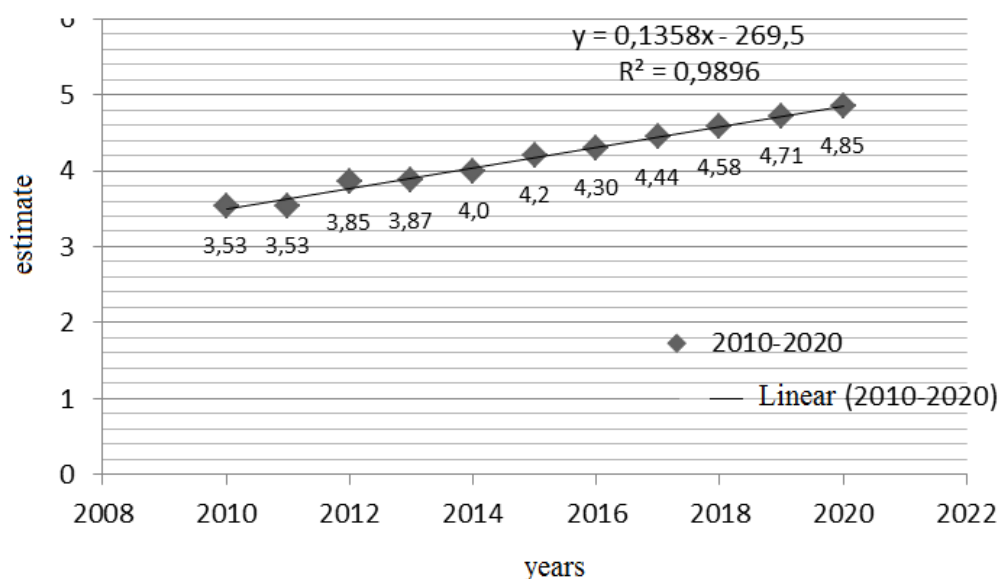


Fig. 1. The forecast of Ukraine's network readiness for 2020

Source: created by the author

The forecast of Ukraine's position in the world rating is to some extent an indicator of the state regulation mechanism effectiveness in the field of ICT and enterprises prospects. The positive trend line shows the growth of Ukraine's network readiness in 2020 to 4.85. The obtained forecast indicator corresponds to the current value in the rating with 32-35 places and an estimate of 4.8 to such countries as Latvia, Saudi Arabia, Malta, Spain. Ukraine can reach the top 20 leaders – Austria, Israel, Estonia, Belgium, according to this trend, only in 2024 with a score of 5.4. However, the level of technology is changing at a rapid pace, so it is necessary to build a clear strategy to achieve the results of these countries.

Under condition of the ICT spread in business and society, information security measures become important, since the network economy not only brings many advantages and creates additional opportunities for business development, but also generates a number of threats that are destructive for both the individual and the region and country as a whole.

The main threats for spreading the network economy in modern conditions are: information terrorism

(through the use of the media, spreading rumors, dissemination of false (distorted, presented in a favorable context) information, activities of unfair competition); cyberterrorism (because of the infiltration of citizens, enterprises, government agencies, political parties into the computer networks, that can influence the violation of the world order); information attacks (through the spread of fakes (about military conflicts, the ecological situation, social and humanitarian problems in certain territories, anti-advertising of competitors, dissemination of compromising materials (often false information) about business structures, that often precedes raider seizure, etc.); intentional point impact on a particular population group, which is most vulnerable to this information (pensioners, national minorities, ATO veterans, adolescents, etc.); the religious and public organizations use; use of memetic weapons (primarily through social networks in order to impose stereotypes of thinking and behavior in business and society); the problem of protecting personal data (penetration through social networks (for example, recent events with Facebook) into the personal information space of citizens in order to use their personal data and manipu-

late both consciousness and behavior in society); information overload (through "pollution of the information space" and the constant imposition of unnecessary information, which often makes it difficult to sort it out); partial or complete replacement of a person with artificial intelligence in a professional and public environment (for example, running a robot in mayoral election in Japan); influence on the psychological state of the population through the formation of phobias through the Internet network.

The reaction of the European Union to the scandal with the leakage of information via Facebook is indicative as for increasing information security of protecting the personal information space and personal data in this case: since May 2018, the new General Data Protection Regulation (GDPR) comes into force (created and adopted in 2016) [11], which is intended to guarantee the safety and protection of personal information of citizens of the EU and other countries whose data are used on the territory of the European Union. The energy, financial companies, telecom operators and reservation services, e-shops and social networks falls under the terms of the GDPR₂₀₁₆ regulations first of all. Effective financial sanctions are provided for the regulations violation: 20 million EUR or 4% of annual income for violation of GDPR₂₀₁₆ key provisions, personal data subjects rights, standards for the personal data transfer, etc. A feature of the new GDPR regulation is that it includes an IP address to the personal data; prohibits the collection of redundant personal data, inaccurate information must be updated or deleted on time; provides monitoring of behavioral personality activity in social networks, geolocation for targeting and personalization of advertising; a data leakage statement is required within 72 hours to the European Data Protection Board (EDPB), the only regulatory body in the EU [12]. Under the conditions of European integration, Ukrainian enterprises should carefully review their own information policy in the field of storage, processing and use of personal data in accordance with the standards of doing business in the EU.

Conclusions. The main factors constraining the development of ICT in the Ukrainian economy is insufficient level of their use by the government, business; insufficient legislative support of the network economy, problems with the intellectual property protection; a low level of new technologies adoption in business; insufficient level of ICT influence on the emergence of new business models, which is probably connected with unfavorable business environment, while the low government readiness can be explained by the lack of a clear official ICT strategy and inadequate ability to use it.

It should be noted that not only the fact of passing the law, but also the communication campaign is important, therefore, digital strategies should be aimed not only at developing the ICT infrastructure, but also at creating the necessary conditions for the ICT effective use

in order to increase innovation, competitiveness, greater social integration.

Effective development of the information space is impossible without taking into account the observance of information security conditions for the implementation of electronic transactions on the Internet, electronic document management, mind-maps use, digital signature mechanisms. Therefore, in the system of infiltration of the network economy into all spheres of economic activity, it is important to observe the criteria of information security, which will contribute to stabilization in the relations between the market holders and become one of the key components of business development.

State policies and company strategies with the aim of maximizing the economic and social effects of the network economy should be aimed at coordinating efforts among stakeholders in the field of ICT dissemination, emphasizing the key focus on the development and strengthening of public-private partnership.

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Пушак Я. Я., Кравчук І. П., Макєєва О. М. Фактори розвитку мережевої економіки в Україні: економіко-правовий аспект

Статтю присвячено дослідженню факторів розвитку вітчизняної мережевої економіки на основі аналізу міжнародних індексів розвитку інформаційного середовища; обґрунтуванню загроз інформаційної безпеки ведення бізнесу. Проведено аналіз сприятливих та гальмуючих факторів поширення мережевого підходу до ведення бізнесу, здійснено SWOT-аналіз інфраструктури та регуляторного середовища готовності участі підприємств у мережеві економіці, визначено недоліки її нормативно-правового забезпечення, побудовано прогноз мережевої готовності України. Обґрунтовано загрози поширення мережевої економіки в бізнесі і у суспільстві. Основними факторами, що стримують розвиток ІКТ в економіці України, є: невисокий рівень їх освоєння урядом, бізнесом; недостатнє законодавче забезпечення мережевої економіки.

Ключові слова: мережева економіка; індекс мережевої готовності; фактори мережевої економіки; інформаційна безпека.

Пушак Я. Я., Кравчук І. П., Макєєва О. М. Факторы развития сетевой экономики в Украине: экономико-правовой аспект

Статья посвящена исследованию факторов развития сетевой экономики на основе анализа международных индексов развития информационной среды; обоснованию угроз информационной безопасности ведения бизнеса. Проведен анализ благоприятных и тормозящих факторов распространения сетевого подхода к

ведению бизнеса, осуществлен SWOT-анализ инфраструктуры и регуляторной среды готовности участия предприятий в сетевой экономике, определены недостатки ее нормативно-правового обеспечения, построен прогноз сетевой готовности Украины. Обоснованы угрозы распространения сетевой экономики в бизнесе и в обществе. Основными факторами, сдерживающими развитие ИКТ в экономике Украины, являются: невысокий уровень их использования правительством, бизнесом; недостаточное законодательное обеспечение сетевой экономики.

Ключевые слова: сетевая экономика, индекс сетевой готовности, факторы сетевой экономики, информационная безопасность.

Pushak Ya., Kravchuk I., Makeieva O. Factors of networked economy development in Ukraine: economic and legal context

Under the influence of information technology, the features and content of organization forms of economy change; new kinds of production and forms of doing business are created, a main base of functioning networked economy is formed.

The expanding of network approach for organization of economic relationships creates real changes in market and competitive structures, requires a necessity of changing aims and methods of entrepreneurship.

The issues of networked economy forming and development were studied by both foreign researchers (J. Galbraith, A. Toffler, P. Druker) and native scholars (V. Bazylevych, V. Heyets, I. Besedina).

The whole imagination about the process of networked economy forming is impossible without learning the factors, which define it, with taking in count specificity of native market environment, which is not researched enough in the national scientific field.

Research of the factors of networked economy development based on analysis of international indexes of information environment development; determination of threats of information security in doing business.

The analysis of advantageous and deterring factors of expanding network approach in doing business is carried out, the disadvantages of its law providing are defined, a forecast of Ukraine's networked readiness is constructed. The threats of expanding network economy in business and society are explained.

The main factors, which prevent development of ICT in Ukraine's economy, are the low rate of adoption them by government, business; the low rate in law securing of network economy. Following the criteria of information security in network economy facilitates stabilization in relationships towards market's stakeholders and will become one of the main parts in business development.

Keywords: networked economy; Networked Readiness Index; factors of networked economy, informational security.

Received by the editors: 13.11.2018
and final form 14.12.2018