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IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES AS A FACTOR OF COMPETITIVENESS GROWTH BY THE SMALL ENTERPRISES IN CIS STATES

The article shows that the international network of electronic communication helps the various economic agents in finding new partners, responding to the changing conditions quicker, facilitates the greater interaction of the economic partners and establishment of the trusting and long-term relationships, reduces the transaction costs and the distance between the partners, while simultaneously increasing the economic benefits of their relationship. It justifies the fact that the widespread implementation of information and communication technologies in the CIS countries might contribute to increasing the number of small businesses and private business organizations, as well as strengthen their competitive positions in the domestic and foreign markets. This article proves that the use of ICTs can enhance the effectiveness of the production and companies' management system by increasing their access to the information, knowledge, financial services and other resources. As explained in this work, due to the use of ICTs new opportunities are created for the small private enterprises to develop the existing and discover the new types and directions of activity, which will contribute to the improvement of the population well-being. It also rationalizes that the expansion of the ICTs' use by the government and other public bodies may support the increase of the business environment transparency and simplify procedures for starting and running a business. It determines why the spread of information technology, especially in the CIS countries, requires governmental support primarily in the development of information infrastructure and adaptation of the legislation to the conditions of the information economy.

Keywords: information and communication technologies (ICTs); competitiveness; small enterprises; information infrastructure; ICTs goods' exports and imports; ICTs services' exports and imports.

Introduction. It can be argued that there are almost no areas left in the modern economic life, where information and communication technologies (ICTs) are not used. Their widespread use on an international scale has greatly accelerated the spread of the economic relations' globalization processes. International network of electronic communications helps different economic actors at both national and international level in finding partners quicker and responding quickly to the changing conditions. All this contributes to the greater interaction of economic partners, establishment of the trusting and long-term relationships, reduction of the distances and transaction costs and increasing of the economic benefits of such relationships.

In a market economy, especially in the period of its formation and development, as it occurs in the CIS countries, small businesses should be given a defining role in ensuring the sustainable economic development of the state, creation of jobs, replenishment of the state budget and improvement of the population's welfare.

Questions of formation and development of the information society and the economy as a stage of the modern civilization's development that is based on the use of ICTs and the creative work of human, cause the scientific debate among both Ukrainian and foreign scholars. The economists and experts view information economy as a multidimensional phenomenon from different positions. In particular, the works of Y.Bazhal, V.Heyets, S.Zhabin, A.Maslov, V.Skalatsky, L.Fedulova and A.Chukhno are devoted to the development of theory and the analysis of the information society models; the researches of I. Vahovich, B. Grivnak, S. Grinkevitch, A. Zharinova, L. Ischuk, G. Kucherov, T.Lepeyko, O.Mazorenko and S.Pirig highlight the problems of the knowledge economy formation in Ukraine; Ukraine's readiness to accept and integrate ICTs is seen in the works of V.Furashev, D.Lande, O.Furashev, O.Shevchuk, A.Golobutsky; the use of the ICTs in the economy and its individual sectors is studied by such Ukrainian and foreign scholars as G.Anilovska, A.Bakaev, L.Bazhan, O.Volk, V.Guzhva, L.Dubchak, S.Dyatlov, P.Eschenko, L.Kaydan, V.Koshkin, M.Kurkov, A.Rumyantsev, V.Khoroshko, N.Shpak, M.Yatsenko.

However, despite the numerous studies the problems of the information economy formation in the different countries of the world, practical aspects of this problem and the impact of the information technology on the development of certain economic sectors remain insufficiently researched.

The **purpose** of this article is to provide a rationale for the wide use of ICTs by small businesses in the CIS countries for the improvement of their competitiveness, including the competitiveness on the international markets. We would like to show what possibilities and advantages the use of information technology by the small enterprises creates for their development and prove that the massive spread of the small business can be a basis for the formation of the strong and competitive economies in the CIS countries.

In our opinion, great prospects are opened for the small businesses, especially for start-ups, in the knowledge economy. In the modern conditions the newly created small enterprises find it easier to work according to the new principles, it is easier for them to take risks, they can be more flexible and can adapt to the rapidly changing business conditions quicker than the divisions of the powerful multinationals. However, in order to act and react in such a way it is required to have a broad and timely access to the information that modern ICTs can provide.

Under the conditions of the increased competition at both national and international level, companies constantly have to find the ways to make the system of production and its management more efficient. The use of ICTs can significantly help firms in this process due to the improved access to information, knowledge, financial services and other resources. In addition, ICTs can contribute to the improvement of the business environment transparency, which makes the competition conditions closer to perfect.

Thanks to the use of ICTs by the small private enterprises, new opportunities are created for the development of the existing and discovery of the new types and directions of activity, which, in turn, will contribute to the creation of the additional jobs, increase of the tax revenues and improvement of the population well-being. The dynamic functioning of the private sector can facilitate attraction of the foreign investors and expansion of trade relations with other countries that may also help to alleviate and reduce the cost of implementing innovations. In this regard, in many countries it is understood that the full implementation of ICTs in the private sector will help boost its competitiveness.

In the current circumstances, the use of the mobile communications and the Internet greatly increases the prospects of the small enterprises' development in the CIS countries. The modern technology of the broadband access to the Internet (BBA) significantly improves the opportunities of the enterprises to develop forms of e-business

and the sale of goods and services through e-commerce and increases the impact of ICTs by creating additional areas of the business development and contributing to the economic growth of the state [1]. Thanks to e-business, entrepreneurs gain additional opportunities to start their own businesses with minor investments.

However, statistical data shows that despite significant progress in the recent years the access of the small enterprises that belong to the CIS countries' private sector to the broadband (high-speed) Internet is still insufficient. According to the International Bank for Reconstruction and Development (IBRD) [2] that uses an indicator of the number of the fixed broadband Internet subscribers per 100 inhabitants, the best situation among the CIS countries in 2011 was in Belarus, Russia, Azerbaijan and Moldova, where

the figure varies from 10 to 22 (Table 1). Meanwhile, in such countries as Uzbekistan, Kyrgyzstan, Tajikistan and Turkmenistan it was less than 1. For comparison, in the developed countries this indicator ranges from 22.8 in Italy to 39.2 in Switzerland.

As for the number of the Internet users per 100 inhabitants, the leaders among the CIS countries in 2012 were Azerbaijan, Russian Federation and Kazakhstan, where this indicator amounted more than 50 people, being close to the level of the developed countries, such as Greece and Italy (56-58 people). At the same time, in the Nordic countries this figure is 94-96 inhabitants [2]. In most CIS countries, the number of Internet users per 100 inhabitants is in the range of 30 to 40 people, with the smallest number of them in 2012 being in Turkmenistan, Tajikistan and Kyrgyzstan (Table 1).

Table 1. Indicators of the information infrastructure development in the CIS countries

Indicators / countries	Number of fixed broadband access to the Internet users (per 100 inhabitants)		Number of fixed broadband access to the Internet users (thousands)		Number of the Internet users (per 100 inhabitants)		Number of mobile subscribers (thousands)	
	2008	2012	2008	2012	2008	2012	2008	2012
Azerbaijan	0,67	13,80	58,7	1283,1	17,4	54,2	73	107
Armenia	0,36	6,64	11,1	197,1	6,2	39,2	47	107
Belarus	4,94	26,56	474,3	2513,6	23,2	46,9	84	112
Kazakhstan	4,22	9,72	661,4	1632,7	11,0	53,3	95	175
Kyrgyzstan	0,36	2,62	19,1	146,3	15,4	21,7	65	125
Moldavia	3,17	11,85	113,2	421,8	23,8	43,4	67	116
Russia	6,48	14,48	9198,4	20783,6	27,1	53,3	139	184
Tajikistan	0,05	0,08	3,3	6,4	8,8	14,5	55	92
Turkmenistan	0,00	0,03	-	1,6	1,8	7,2	23	76
Uzbekistan	0,25	0,72	68,3	214,4	8,9	36,5	46	72
Ukraine	3,48	8,11	1609,8	3697,6	10,9	33,7	121	132

* Source: compiled and calculated from the data provided by the IBRD // <http://data.worldbank.org/topic/infrastructure/>

Indicator of the mobile communications' availability in all CIS countries, except Uzbekistan, Tajikistan and Turkmenistan, is high – more than one mobile phone per each resident, with the figure for Russia being as high as 1.8 [2]. The widespread use of the mobile communications, especially with the possibilities of the Internet access, can be a positive factor for the development of the small businesses and individual entrepreneurs as mobile connection provides quick access to the information and allows responding quickly to the changes in the market environment. Mobile communication also facilitates closer links with the suppliers and customers and increases the effectiveness of the business communications with them, reducing the need for the frequent business trips, consequently reducing the management costs. In addition, thanks to the extension of the mobile applications range (from text messaging to financial transactions) the possibility of providing a variety of related services is increasing for small businesses.

The use of ICTs in the production of goods and services opens up additional opportunities for the businesses to develop and generate innovations that can promote technology upgrade and improvement of the population well-being on the state level.

The implementation of the mobile payment systems is one of the most promising potential opportunities of ICTs use for the development of the small businesses and private entrepreneurship. The aforementioned process will allow them to save money on financial services while these business entities conduct transactions, receive small amounts of money or process microcredits. The more employers will use these systems, the stronger will be the effect of such an implementation, and these employers, in turn, will be more tailored to the needs of the small businesses [1].

The use of the ICTs by the different government agencies will help to reduce the time and cost of business regis-

tration and licensing, which is especially important for the small businesses and entrepreneurs. The simplification of the company registration procedures will mean greater transparency of the business environment that also contributes to the solution of a number of the pressing problems for most CIS countries, such as the reduction of the shadow economy, the growth in tax revenues and an increase in legal employment. In addition, a list of e-Government services for the businesses can include the declaration of income and payment of taxes with the use of the Internet, utilities' and other services' payments, an automated system of customs duties and the functioning of the vacancies bank for the potential employees. It should be noted that today e-government in CIS operates only in Russia, Kazakhstan and Belarus, with the works on its creation in Ukraine being performed and scheduled for completion in 2014.

As the data in Table 2 shows, the CIS countries are relative outsiders on the global market for goods and services of the ICTs sector. Moreover, low values are typical not only for the absolute, but also for the relative volumes of both exports and imports.

For example, while the share of ICTs goods in the total world goods' export in 2011 amounted to 10.9%, being 19.2% in the developing countries 19.2% and 6.2% in the developed countries, in the CIS countries this figure was the lowest – only 0.3%. More or less prominent exporters of ICTs goods among the Commonwealth countries are Russia, Ukraine, Belarus and Kazakhstan, but even the export of the leading CIS country – Russia – in 2011 was more than 400 times less than that of China, which holds a leading position in the world export in the ICTs sector. The share of Russia in the global export of such goods in 2011 was only 0.07%. For comparison, in the same period for China it amounted to 28.2%. Accordingly, for the other Commonwealth countries these figures are even worse.

Table 2. Trade performance of individual countries in the ICTs sector in 2008-2011

Indicators / countries	2008	2009	2010	2011
Export of the ICTs sector goods (millions USD)				
Belarus	111	85	126	156
Kazakhstan	19	27	-	125
The Russian Federation	784	838	926	1 227
Ukraine	648	438	551	610
World	1 637 683	1 409 546	1 726 578	1 803 017
China	396 424	356 301	459 522	508 012
Hong Kong (China)	151 599	141 881	176 964	193 528
Taiwan (China)	75 487	67 054	94 702	105 765
USA	138 001	113 157	134 549	140 568
Singapore	117 154	91 442	120 806	118 391
Import of the ICTs sector goods (millions USD)				
Belarus	794	530	853	781
Kazakhstan	738	829	-	2 183
The Russian Federation	20 810	12 435	19 526	21 906
Ukraine	1 628	993	1 940	2 136
World	1757764	1 506 040	1 876 486	1 947 221
China	239 961	220 214	284 783	313 798
Hong Kong (China)	156 527	149 537	188 736	206 446
Taiwan (China)	256 235	230 627	280 074	290 565
USA	94 718	78 522	97 728	100 187
Singapore	73 841	62 726	83 132	86 724
The share of ICTs goods in total exports (%)				
World	10,54	11,63	11,78	10,94
Developing countries	17,43	19,42	19,54	19,24
CIS countries	0,23	0,33	0,29	0,30
Developed countries	6,91	7,08	6,91	6,15
Export of the ICTs sector services (millions USD)				
Belarus	298	307	385	450
Moldavia	112	114	133	148
The Russian Federation	2 950	2 472	2 538	2 970
Ukraine	597	777	947	1 275
World	297 496	287 211	310 117	351 662
USA	23 421	23 761	25 090	28 301
Germany	20 714	19 491	21 714	24 040
United Kingdom	21 686	21 185	21 759	23 991
China	7 822	7 710	10 476	13 863

Note: "-" – denotes the absence of data.

* Source: compiled and calculated from the data provided by UNCTAD // <http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx/>

It should be noted that the CIS countries import much more ICTs goods than they export, which, incidentally, is also characteristic of most developed countries, but the volume of such import by the Commonwealth countries is ten times (for Russia) and one hundred times (for the other CIS countries) less than that of the leading countries of the world ICTs sector market. Again, the share of Russian import, which ranks first among the CIS countries, amounted to only 1.1% of the world ICTs sector production import in 2011, and the largest volume of ICTs goods' import came to China, amounting to 16% of the global import in this commodity group.

As for the export of ICTs services by the CIS countries, the situation is somewhat better than the export of goods of this group, but we still have to note a low level of competitiveness of the Commonwealth countries in the world market of ICTs services, as evidenced by both absolute and relative performance. Leading positions among the CIS countries in the export of ICTs services are held by almost the same countries as in the export of this sector's goods – Russia, Ukraine, Belarus and Moldavia. However, even the largest volume of such exports, reached by Russia in 2011, was 9.5 times less than the volume of the ICTs services sold on the world market by the U.S. – the leading country in this segment. The share of exports of Russia and Ukraine in the world ICTs services export in 2011 amounted to only 0.8% and 0.36% respectively.

In this regard, it should be noted that Russia, Ukraine and Belarus, at least, have the sufficient potential for increasing the volume of the ICTs services export. In Ukraine, for example, domestic providers of this kind of services have traditionally been more oriented to the external customers than to the domestic market. In 2010, Ukrainian export of ICTs services reached 947 million USD [3], while ICTs services' volume in the corporate sector of the domestic market amounted to only 189 million USD [4]. Even with taking into account the provision of such services to the private users, their export exceeds the amount of consumption in the domestic market by 2-2.5 times, that, on the one hand, demonstrates the competitiveness of the domestic ICTs services in the world market, and, on the other, a lack of demand for these services from the domestic private entities. According to the international consulting agency IDC, the market development of ICTs services in Ukraine is constrained by the insufficient qualification of both customers and services' providers, a high share of the shadow economy and the dominance of corruption in both public and private sectors [4]. Experts also point out the imbalance in the consumption structure on the ICTs services market: in Ukraine more than half of such services are provided to the financial institutions and communication services, while in Eastern Europe this indicator does not exceed 40%, amounting to 34% in Russia. These facts show a lack of proper attention to the information technol-

ogy from the industrial private companies and the low level of its use, which, in turn, open up opportunities for the domestic companies supplying ICTs services to expand the domestic demand for these services and realize the existing potential in this area. In addition, the increase of the competitiveness of the companies providing ICTs services in the internal market can also contribute to the expansion of their export activities.

However, the conducted statistical analysis shows the lack of competitiveness of the ICTs sector goods and services, produced in the CIS countries, and the lack of attention to the development of this sector in the aforementioned countries at the state level.

Conclusions. As a result of the conducted research, we can identify the following:

- opportunities that are created for the small businesses due to the use of ICTs, i.e. the decrease in investments required to start a business, reduction of the time and cost of business registration thanks to the functioning of the e-Government, the increase of the sales volumes through the use of the e-commerce channels, the opening of the new kinds and directions of activity not only on the domestic, but also on the foreign markets, the increase of the production and efficiency of the production management system through the reduction of the operating and transaction costs, cheapening of the financial and credit operations based on the use of the mobile payment systems and an increase in production and sales of goods and services in the ICTs sector itself through the stimulation of the domestic demand and the realization of the export potential;

- benefits that the widespread introduction of ICTs creates for the small businesses: greater flexibility and mobility, opportunities to risk without the significant losses and better adaptability to the rapidly changing conditions compared to the large enterprises and corporations;

- benefits for the state, in which the small businesses are actively developing with the use of ICTs: growth in employ-

ment (including self-employment) and tax revenues, reduction in payments to the unemployed, creation of the innovations on the basis of growth in demand for products and services of the ICTs sector, improvement of the investment climate in the country through the strengthening of the ICTs infrastructure, the development of the trade and investment relations with the other countries, the reduction of the shadow economy sector and the level of corruption facilitated by the simplification of the procedures of starting and running a business and the use of the e-Government facilities.

However, along with the highlighted advantages, certain problems significantly inhibit the large-scale use of ICTs by the small businesses in the CIS countries, e.g. the lack of the population's access to the Internet, underdevelopment of the information infrastructure, the absence of the legal framework for the development of e-commerce in most of the analyzed countries, the high cost of the mobile applications, absence of the e-Government in most CIS countries and a substantial lagging of the national exporters of goods and services in the ICTs sector compared to the global market leaders in terms of sales and the market share. The possibilities of overcoming these problems, as well as the role of the state in the process of stimulating the development and implementation of information and communication technologies, can open perspectives for further research in this area.

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ВПРОВАДЖЕННЯ ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНИХ ТЕХНОЛОГІЙ МАЛИМИ ПІДПРИЄМСТВАМИ КРАЇН СНД ЯК ФАКТОР ЗРОСТАННЯ ЇХНЬОЇ КОНКУРЕНТОСПРОМОЖНОСТІ

Визначено, що міжнародна мережа електронних комунікацій допомагає різним економічним суб'єктам швидше знаходити партнерів, оперативніше реагувати на мінливі умови, зменшує відстані і транзакційні витрати між партнерами, підвищує економічну вигоду їх взаємовідносин. Обґрунтовано, що широке впровадження інформаційно-комунікаційних технологій в країнах СНД може сприяти збільшенню кількості малих підприємств і приватних підприємницьких структур, а також посиленню їхніх конкурентних позицій як на внутрішньому, так і на зовнішніх ринках. Доведено, що використання ІКТ може сприяти підвищенню ефективності системи виробництва і управління компаній завдяки розширенню їхнього доступу до інформації, знань, фінансових послуг та інших ресурсів. Завдяки використанню ІКТ для малих приватних підприємств створюються нові можливості розвитку існуючих і відкриття нових видів і напрямків діяльності, що, у свою чергу, сприятиме створенню додаткових робочих місць, збільшенню податкових надходжень і зростанню добробуту населення. Динамічне функціонування приватного сектора може сприяти залученню іноземних інвесторів, розширенню торговельних відносин з іншими країнами, що також може сприяти полегшенню і здешевленню впровадження інновацій. Обґрунтовано, що поширення інформаційних технологій, особливо в країнах СНД, потребує державної підтримки, в першу чергу, з розвитку інформаційної інфраструктури та адаптації законодавства до умов інформаційної економіки.

Ключові слова: інформаційно-комунікаційні технології (ІКТ); конкурентоспроможність; малі підприємства; інформаційна інфраструктура; експорт / імпорт ІКТ-товарів і послуг.

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ВНЕДРЕНИЕ ИНФОРМАЦИОННО-КОМУНИКАЦИОННЫХ ТЕХНОЛОГИЙ МАЛЫМИ ПРЕДПРИЯТИЯМИ СТРАН СНГ КАК ФАКТОР РОСТА ИХ КОНКУРЕНТОСПОСОБНОСТИ

Определено, что международная сеть электронных коммуникаций помогает различным экономическим субъектам быстрее находить партнеров, оперативнее реагировать на изменяющиеся условия, уменьшает расстояния и транзакционные издержки между партнерами, повышает экономическую выгоду их взаимоотношений. Обосновано, что широкое внедрение информационно-коммуникационных технологий в странах СНГ может способствовать увеличению количества малых предприятий и частных предпринимательских структур, а также укреплению их конкурентных позиций как на внутреннем, так и на внешних рынках. Доказано, что использование ИКТ может способствовать повышению эффективности системы производства и управления компаний благодаря расширению их доступа к информации, знаниям, финансовым услугам и другим ресурсам. Благодаря использованию ИКТ для малых частных предприятий создаются новые возможности развития существующих и открытия новых видов и направлений деятельности, что, в свою очередь, будет способствовать созданию дополнительных рабочих мест, увеличению налоговых поступлений и повышению благосостояния населения. Динамическое функционирование частного сектора может способствовать привлечению иностранных инвесторов, расширению торговых отношений с другими странами, что также может способствовать облегчению и удешевлению внедрения инноваций. Обосновано, что распространение информационных технологий, особенно в странах СНГ, нуждается в государственной поддержке, в первую очередь, по развитию информационной инфраструктуры и адаптации законодательства к условиям информационной экономики.

Ключевые слова: информационно-коммуникационные технологии (ИКТ); конкурентоспособность; малые предприятия; информационная инфраструктура; экспорт/импорт ИКТ-товаров и услуг.