

KNOWLEDGE ECONOMY AS A STRATEGIC VECTOR OF UKRAINE'S DEVELOPMENT

Abstract. *The purpose of this research is to identify the prerequisites for the socioeconomic development of Ukraine and setting up a strategic vector of long run advancement. The research involves comparison of foreign experience, global economy tendencies, and the reality of Ukraine's economy. The aspects explored include the pillars of knowledge economy and the potential of their development in Ukraine. The results of the analysis justify that to become an economically leading country in the long-term period Ukraine should start building a society based on knowledge and innovations.*

Key words: knowledge economy, innovation, information technology, pull learning environment.

ЕКОНОМІКА ЗНАНЬ ЯК СТРАТЕГІЧНИЙ ВЕКТОР РОЗВИТКУ УКРАЇНИ

Анотація. *Метою даного дослідження є виявлення передумов для соціально-економічного розвитку України і створення його стратегічного вектора у довгостроковій перспективі. Дослідження включає в себе порівняння зарубіжного досвіду, глобальних тенденцій економіки та реальності української економіки. Результати аналізу показали що, для того щоб стати економічно провідною країною в довгостроковому періоді Україна повинна почати будівництво суспільства, заснованого на знаннях та інноваціях.*

Ключові слова: економіка знань, інновації, інформаційні технології, середовище навчання.

ЭКОНОМИКА ЗНАНИЙ КАК СТРАТЕГИЧЕСКИЙ ВЕКТОР РАЗВИТИЯ УКРАИНЫ

Аннотация. *Целью данного исследования является выявление предпосылок для социально-экономического развития Украины и созданию его стратегического вектора в долгосрочной перспективе. Исследование включает в себя сравнения зарубежного опыта, глобальных тенденций в экономике и реальности украинской экономики. Результаты анализа показали, что, для того чтобы стать экономически ведущей страной в долгосрочном периоде Украина должна начать строительство общества, основанного на знаниях и инновациях.*

Ключевые слова: экономика знаний, инновации, информационные технологии, среда обучения.

Knowledge Economy (KE) is a system of consumption and production that is based on intellectual capital. The key component of KE is a greater reliance on intellectual capabilities than on physical inputs or natural resources [1, p.3]. KE is the economy where knowledge is converted into money and where intellectual skills and competences deliver value. Nowadays the leaders in the KE area are Sweden, Finland and Denmark. One of the best examples in moving to the KE is Finland, which in the 1970s had a resource-based economy, drawing on wood processing, pulp production etc. At some point, there was no more room for development in these industries, and in the 1990s, through investment in IT and in the KE as a whole, Finland came to the forefront of Europe in this respect. Another example: South Korea initially was an agricultural appendage of the North. But the country redirected all public investment into areas where at least 30 % was innovation-based. Today, South Korea is 20 years ahead not only of Ukraine, but of the U.S. in many technological areas. Nowadays the economic reality of Ukraine is not bright. The share of KE in the creation of GDP in Ukraine is about 12 %: information technology accounts for 1.8 % of GDP, education — 5 %, R&D — 0.8 %, healthcare — 4 %, and biotechnology — almost zero [2]. In Western Europe the share of these sectors is 35 %. In the U.S. the KE accounts for 45 % of the economy as a whole. The GDP of Ukraine remained the same in 2013. In Ukraine ferrous metals account for 27 % of exports (\$17.5 billion), mineral exports — 10 % (\$6.8 billion) [2]. For comparison: the turnover of the high-tech sector in Chicago is \$60 billion per year. This is the same for the year exports of goods of Ukraine in general. We should also pay attention to another indicator. Ukraine occupies the 156th place among 223 countries with life expectancy of 68.93 years, while in Europe it almost reaches 90 [3]. Life expectancy was 70 years there half a century ago. Such a situation could be coped with by taking a course on building a society and economy based on knowledge and innovations.

Overall, according to Knowledge Economy Index (KEI) 2012, delivered by the World Bank, we are ranked in the 56th place in terms of knowledge economy development. Ukraine holds first place among the lower middle-income countries, drawing its advantage mainly from its education pillar

[4]. Knowledge economy is impossible without innovations as the classical definition of knowledge economy is the highest stage of development of an innovative society. For instance, in the U.S. such a society was built due to the functioning of start-ups. However, the Ukrainian economy has a different structure. While two thirds of the U.S. GDP is made up by small and medium-sized companies, most of the Ukrainian industry is dominated by large companies: in some cases monopolies, oligopolies, and syndicates, all very large businesses with which start-ups would struggle to compete. However, it does not matter whether a high-tech company is big or small. What matters is whether this company creates added value or not. So the appropriate conditions should be created for innovative performance of both big businesses and start-ups.

Therefore, it is important to outline the priority spheres where these innovations should be implemented in building KE in Ukraine. I suggest the following pillars as the elements of GDP that play a crucial role in KE and which would propel the development of Ukraine:

- Information Technology (IT)
- Education & Training
- R&D
- Biotechnology & Healthcare

IT industry in Ukraine can become the main driving force of the economy. The share of Ukrainian software development services was around only 1 % of the global outsourcing market in 2013. At the same time, Ukraine is ranked 4th in the world in the number of certified IT professionals (after the United States, India, Russia). Besides, Ukraine is in the Top 30 locations for the transmission of orders for software development. Experts predict that our IT sphere will be leading in the list of the most promising industries in the next decade. There is a range of prerequisites for the development of the IT sphere in Ukraine: talented and creative people, good reputation of our IT professionals in the world. In addition, the job creation in this industry requires minimum investment. So this sphere creates auspicious conditions for further development of Ukraine. One of the main objectives here is to bring the brain-drain of highly skilled IT specialists from Ukraine to a halt and to export intellect through the creation of new technologies, new products, and know-how. Therefore appropriate conditions should be provided to the IT specialists in Ukraine:

- a) normal environment, without corruption and bureaucracy, which can be constructed in the framework of high-tech industrial parks like those in China, Vietnam, Malaysia, Turkey, Poland etc.;
- b) tax and customs preferences and reducing administrative barriers for high-tech companies;
- c) state co-financing of basic infrastructure and research projects.

I would like to emphasise that IT does not only deal with producing software. IT should be introduced in all sectors of the economy by taking a comprehensive approach. Part of this approach is to upgrade outdated facilities and equipment at Ukrainian plants. Also IT should be implemented in the sectors, in which Ukraine is relatively strong, such as heavy industry and agriculture. In addition Ukraine needs to reduce oil and gas consumption since, according to The Economist, Ukraine is one of the most energy-intensive economies in the world [5].

In education Ukraine is doing relatively well. According to The Human Capital Report 2013, it ranks 45th among 122 countries [6, p.56]. Nevertheless, according to Global Human Capital Trends 2014, the world is now moving from «push» training to «pull» learning. Historically, most training programs have followed a «push» model. For example, an employee was invited to a training session in a classroom at a specified time, listened to a series of lectures, and was sent back to work. Content was pushed down to employees based on the training department's schedule and success was measured by how many employees attended the class. Today, according to the «pull» model, learning and development is a continuous process, with training pulled seamlessly through computers or mobile devices anywhere, anytime; workers take it upon themselves to find information, educate themselves, and supplement their own expertise [7, p.36]. At this point it is in top priorities to build such a «pull» learning environment and a culture of continuous learning as well as to encourage everyone to become their own «chief skill officers». One of the tendencies in this sphere — the explosive growth of online learning from the pioneering Khan Academy and edX to Coursera and dozens of MOOCs (massive open online courses) — is democratizing education for millions by putting learners at the centre of the education process. These new tools allow students and employees to continuously upgrade skills by incorporating learning into everyday study and work experience and progressing at their own pace. Ukraine needs to transform a learning program scattered into an integrated, global learning function with measurable results and cost transparency. Ukrainian universities should be forced to turn into vibrant and dynamic research and educational corporations.

Furthermore, a cluster system should be set up. Such a cluster will be an organisational structure with three core units: University, where the ideas will be generated; R&D institute, where high-skilled scientists will work out the ways to transform the ideas into practice; Company, where the novation will be converted into the innovation and implemented in the technological, operational or managerial enterprising. In the centre there will be Government which will coordinate performance of these core units. Such a network will give synergetic effect that in its turn will improve companies' operational efficiency, foster innovation and knowledge diffusion and accelerate social capital formation as well as the correlation between university knowledge and knowledge needed at work. What Ukraine can borrow from, for example, the U.S. KE, is establishing R&D institutions. Here in Ukraine, near Kyiv, an innovation IT park called «Bionic Hill», where Ukrainian IT specialists will live and work similarly to the Silicon Valley, is being built. It will create 35 thousand jobs and deliver a platform for the development of high-tech business in IT, pharmaceuticals, biotechnology, energy saving and clean energy solutions.

The KE includes healthcare, but not present-day healthcare, because healthcare today is what we turn to when a person is sick. The top priority is about prevention, diagnosis and rehabilitation. These branches of medicine are the most effective, because life expectancy and quality of life are determined by the standards of healthcare. Our real wealth is people, their intelligence, knowledge and experience. Nevertheless, it is an inexhaustible source of our wealth as long as these people are healthy.

In my research I have compared modern global economy trends and the reality and potential of Ukraine's economy. As we have seen, Ukraine needs to set up priorities for a long-term period and restructure its economy because of the discrepancy between socioeconomic tendencies in the world and the real situation in Ukraine. I came to the conclusion that KE is the most relevant and rational strategy for future development of Ukraine. The strategy I suggest targets the evaluation of the quality, adaptation, and usage of knowledge, with the goal of creating effective KE here in Ukraine capable of competing globally. There are great prerequisites for the development of all the pillars of KE: IT, Education & Training, R&D, and Biotechnology & Healthcare. Nevertheless, such drawbacks as corruption, bureaucracy, and political turmoil should be dealt with first to give the way to the future Ukrainian socioeconomic development based on knowledge and innovations.

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