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Vitaliy Gurnak
Vitaliy Ananchenko

IMPACT OF ICT ON PRODUCTION PROCESSES IN INDUSTRY AND TRANSPORT

In today's dynamic world, information and communication technologies are vital to the economic development of our country as Ukraine lags significantly behind in the development of IT technology. The article describes situation and prospects for increasing the preparation of specialists of IT technologies for industries and transport in institutions of higher education in Ukraine.

Keywords: *transportation, transportation system, information communication technologies.*

В сучасному динамічному світі інформаційно-комунікаційні технології стають життєво важливими для розвитку економіки нашої держави, оскільки Україна суттєво відстає в розвитку ІТ-технологій. В статті охарактеризовано стан і перспективи збільшення підготовки спеціалістів ІТ-технологій для галузей промисловості та транспорту в вищих учбових закладах України.

Ключові слова: *транспорт, транспортні системи, інформаційно-комунікаційні технології.*

В современном динамичном мире информационно-коммуникационные технологии становятся жизненно важными для развития экономики государства, поскольку Украина существенно отстает в развитии ИТ-технологий. В статье охарактеризованы состояние и перспективы увеличения подготовки специалистов ИТ-технологий для отраслей промышленности и транспорта в высших учебных заведениях Украины.

Ключевые слова: *транспорт, транспортные системы, информационно-коммуникационные технологии*

Resolution of the problem in general terms. One of the most important factors in today's economy is the rapid development of information and communication technologies and efficient implementation of their components in the production processes in industry and transport system of Ukraine. The necessity of increasing the training of IT professionals at different levels is shown in the article.

Main material. ICT is one of the most important factors influencing the twenty-first century society. Information technologies are quickly becoming a vital stimulus for the world economy, they also provide an opportunity to state enterprises, individuals, companies and communities that are engaged in business activities more efficiently and crea

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tively solve economic and social needs. Information and communication technologies are used in almost all branches of industry and transportation sectors with innovative and effective solutions. The current business environment and production both in Ukraine and in Europe and the CIS is characterized by dynamic changes in consumer needs, upgrading marketing methods to promote products and services companies in new and existing markets. Given this, there is a need to assess, analyze and predict the effectiveness of the implementation of specific projects and activities (marketing, organizational, information, innovation and investment, etc.). This is why in certain objects the effective operation of a single business or enterprise is impossible without reliable, operative and relevant information about the status of the company. The need for such information exists in the heads of departments, and executive management. Obtaining the necessary information in a simple, accessible not only to narrow specialists form provides additional competitive advantages in the field of optimal management decisions. Also in today's IT development it is required to collect initial data from different sources. This may be data from such registration systems as SAP, 1C, Oracle, Excel, sites of enterprises and companies, open statistical reports and more. At the same time measures of protection of commercial and other confidential information become really important.

Trade secret is information that is secret in the sense that it generally or in a particular form or set of components is unknown and not readily accessible to persons that normally deal with the kind of information to which it belongs, and therefore this has commercial value and has been the subject of adequate circumstances existing measures to preserve its secrecy taken by a person who legally controls the information.

Trade secret information may be technical, institutional, commercial, industrial, etc.

Thus, in a competitive environment it is important to maintain information containing confidential and trade secret business. To do this, first of all, you must:

- First, decals on the documents must match the classifications used in the protection of state secrets;
- Second, they must be understood only to employees of the company and not to attract the attention of strangers;
- Third, the number of classifications should be clearly defined;
- Fourth, the work of subordinates should be organized in a «clean table».

The gist of it is that the employee because of his absence should not leave any documents at the workplace. All information in electronic or paper form is securely stored in a safe, metal cabinet, server, or desk drawer.

Currently information resources have huge material value, and unauthorized access to these resources may result in a disaster or, in competitive corporations, companies and entire countries can radically change the situation on the market. Therefore, issues related to information security are at the fore and data protection becomes a complex task that aims at implementing and maintaining security.

IT technologies used in different, often unexpected areas of business. So once the Parliament adopted the Law on Amendments to Article 181 of the Code of Ukraine on Administrative Offences to establish responsibility for participation and organization of gambling using information and telecommunication networks.

Information and communication technologies have four characteristics:

- Pervasive nature;
- Contribute to more efficient operation of markets by simplifying and increasing access to information, elimination of barriers to new entrants;

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- Have a global spread, so a huge amount of knowledge can be stored, forwarded, and become the property of the people in any part of the globe;
- Accelerate the innovation process, enabling easier and cheaper processing of huge amounts of data and reducing the time required to develop new products and services.

We are witnessing formation of new industrial space, characterized by the possibility of separation of the production process in individual plants that can be placed in different locations. However due to modern communication technologies a single production process can be provided according to the specified standards. There are more opportunities in business to use existing advantages (geographical, natural and human resources, etc.), as territorial remoteness of production units from one another is not a big obstacle. Modern telecommunication systems and computers reduce time and communication costs, Border States do not affect their use, they accelerate the spread of expertise and competence on a global scale.

Unfortunately as of 01/01/2013, with the development of ICT Ukraine was on the 67th place in the world according to rankings compiled by the International Telecommunication Union, whose headquarters is located in Geneva. Note that the first ten places on this list are South Korea, Sweden, Denmark, Iceland, Finland, the Netherlands, Luxembourg, Japan, the UK and Switzerland. Also on indicator «access communication» (fixed telephone, mobile, Internet) Ukraine took 71st place in the rankings mentioned, but on the «level of education and opportunities to benefit from IT» – in 11th place.

Information and communication technologies enable easier and cheaper to offer personalized products and services. Manufacturers can obtain detailed information about the needs of each individual customer and automatically provide products and services that meet their individual requirements. Until very recently, information and telecommunication technologies actually only served the economy. The development of Internet technology will allow the computer world to take the leading role and not only to serve for the production and transport, but also to influence the economy.

Implementation of information technology increases the demand for specializations, which require specific skills and good education. The economy is becoming increasingly dependent on knowledge. Information and communication technologies significantly change the requirements for manpower and level of training of employees. This includes new the requirements for modern education. Now significant part of materials used in the educational process is submitted in electronic form. The use of telecommunications, multimedia educational tools, Internet technologies – is the potential for improvement of the process of education.

Two years ago the Government of Ukraine decided to increase training of IT professionals in a 4-fold, as main higher institutions for this were identified Kyiv and Lviv Polytechnic and Taras Shevchenko National University of Kyiv.

During the session of the Cabinet of Ministers of Ukraine, on June 26, 2013, the Government decided on the creation of the State University of Telecommunications. This step involves combining the State University of Information and Communication Technologies of the Military Institute of Telecommunications, Institute of special communication and media Kyiv Polytechnic University and Zhitomir Military University Queen NAU (National Aviation University).

In 2013, the Government of Ukraine has allocated from the State Budget for Government Procurement training 25 billion grivnas, which is 5% less than last year, however funds for IT professionals were 2-fold increased, and significantly reduced by training lawyers, managers, economists. So according to the Department of Higher Education,

Ministry of Education and Science of Ukraine state order for training of economists, lawyers and managers decreased by 10 % and journalism reduced by 15%, but the number of budget places to educate IT professionals compared to previous year increased by 24%. If recently school graduates were massively trying to become lawyers and economists, now programmers are in priorities. According to preliminary data aggregated for all universities applications from those who wish to study computer science has increased by one thousand in comparison to 2012, in software engineering – three thousands, in computer science – almost four thousand. [6] And considering the fact that there are not much more students: a year ago there were 693, 000, and in 2013 – about 704, 000.

In addition Department of General Secondary and Early Childhood Education MES of Ukraine decided that from 1st September 2013 informatics lessons were mandatory in school even for second-graders. Subject is entitled as «Steps to science» and includes theoretical and practical training at the elementary level. One lesson of informatics is held once a week where students are taught to use the computer for drafting texts, drawings and elementary algorithms.

These and other measures are contemporary; in fact, analysis shows that IT professionals in recent years are the most demanded and scarce personnel in the labor market. Moreover, employers often take programmers without experience, even when they are still enrolled in high school (usually after the third year). Companies create their own laboratories or training centers and trying to attract strong students. A very important requirement is proficiency in English, as many IT companies in Ukraine are international and need to communicate with foreign customers. It should be noted that for career growth professionals need to continually develop themselves – watch the news, read specialized sites, blogs, literature, because the world of IT is constantly changing. After all, as evidenced by domestic experience you can become a highly skilled software developer only after working in this sphere for at least four years. For example, at present time the most demanded specialists are – Java Developer, C / C + +, .NET, developers of applications for IOS and Android, but no one can guarantee that after some time there will be no changes.

It's not a secret that all technological revolutions are not only involved with the benefits but they can also involve risks. Any new technological advances result, for example, to reduction of jobs and professions, but as history shows to replace them even more new specialties appear. Here is an example. In July 2012 the only automated system of freight transportation was introduced in the railway and in fact there was not a single job place that was not touched by the process of automation. The introduction of new information technologies creates a transparent system of management of the sector, allows you to control the usage of logistical, operational, financial and human resources. For example, the introduction of workstations (WS) commodity cashiers and receiving deliverers reduced the need for the number of employees for a unified technological processing center of transportation documents (UTTD) from 1 thousand 153 people to 353 staff units [2].

Consider the current state of air transport, which is pretty much known to all the negative trends ranging from depreciation funds of major airlines and ending with the lack of opportunities for competitive advantage in the market for air services. However, despite all these difficulties, aircraft in Ukraine has strong potential and this can bring Ukrainian aviation to a potentially new level. This is the potential of information and telecommunication systems (ITS).

Information and telecommunication systems for air transport are designed to perform the following basic functions: communications, navigation and surveillance to ensure the high quality of the air freight and the appropriate level of security. Modern systems are

constantly evolving – networks become more powerful, the optic telecommunications systems have appeared.

Features of execution of airlift necessitating constant information of air process: from planning of the flight and ending with service entities involved in air travel. The main thing is to achieve compliance with quality quantifications of ITS fixed assets airlines of Ukraine in today's global market development and integration of Ukraine to it.

There is a widespread allegation of geographical advantages of our country as a transit area between Europe (West) and Asia (East) which is considered almost as axiom. However, without introduction of information technologies to international transport corridors, Ukraine will not be able to achieve significant growth in transit traffic. The analysis shows that, for example, in road transport transit is effective in recent years, with stable volumes. And the main reason for this situation, in our opinion, is the organizational obstacles and congestion at border crossings, especially to Poland, Slovakia and Hungary. It's not a secret that many international transporter companies go around the territory of Ukraine via Belarus and the Baltic countries to the Russian Federation due to the above reasons, and also because of the poor state of roads and service. Similar actions are observed by the carriers in the other way of transporting goods from Russia and the Central Asian region to consumers in Western Europe. All these lead to a decrease in foreign exchange earnings to the country as transit is most effective.

One of the possible solutions for elimination of congestion of vehicles and road congestion at border crossings, in our view, would be the introduction of new information technologies, in particular the prior advance notice of the relevant services, especially the customs authorities of the arrival of transport for conduction of necessary inspection and control procedures. That mess and constant-long or even multi-day delays of cars (cami- ons) also constrain attraction of foreign investment to expand or increase the logistics real estate at border crossings, as a result foreign investors do not see the prospects of increasing in transit traffic by road transport through the territory of Ukraine.

So it is safe to say that now a prominent place in production processes for rail, road and sea transport should be occupied by IT technologies.

Conclusions. Thus, the widespread implementation of information and communication technologies in all areas of the economy and the way of life – is the most important technological feature of the modern global economy. The continuous development of ICT promotes the quality restoration of technological basis of production, which should lead to higher economic growth. To some extent, this should facilitate timely and quality training of IT professionals of the new structure in our country.

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