

Marketing analysis of information and communication technologies as a factor of compliance function and business growth

Tetyana Dronova ^{* A}; Yuliia Horiashchenko ^B

^A Oles Honchar Dnipro National University, Gagarina Avenue, 72, Dnipro, 49000, Ukraine

^B University of Customs and Finance, street Vladimir Vernadsky, 2/4, Dnipro, 49000, Ukraine

Received: April 23, 2021 | Revised: May 28, 2021 | Accepted: June 16, 2021

JEL Classification: M21, O14, O31.

DOI: 10.38188/2534-9228.21.2.12

Abstract

The purpose of the study is to visualize the results of marketing analysis of the current state and prospects of ICT business. The impact of the use of technology on the activities of enterprises is assessed. The study used the method of SWOT-analysis to assess the internal and external environment of the industry. PEST analysis to study the external environment that may affect the industry. Trend forecasting method for calculating the number of enterprises that will use ICT. ABC analysis to determine the most promising services for specialized educational institutions. The analysis revealed weaknesses (insufficient number of marketing specialists, lack of domestic technology equipment of the required class of quality and productivity) and threats (unpredictable course and consequences of Covid-19, the tendency to reduce scientists and the share of enterprises implementing innovations) in the field of ICT and enterprises. In the activities of the computer academy «STEP» there is a group of services that bring the most profit. It is investigated that «STEP» has significant advantages over competitors. The proposed results of the study can be used in the further working of enterprises. In particular, the academy to promote its services in the education market focuses more on the site, site service and mobile application «Mystat», the social network Facebook. These communication channels are the best channel of connection between the educational establishment and service users. The use of information and communication technologies by enterprises allows them to work more productively in their field and communicate better with potential consumers.

Keywords: information and communication technologies, marketing analysis, business, innovations, education, science.

Introduction

According to Baker McKenzie in its Connected Compliance study, technology deployment during the pandemic increased despite budget cuts: 56% of executives continue to invest in new technologies, and the company sees the greatest value in efficiency and transparent decision-making. In addition, more and more companies are borrowing technological developments or mixing their own and external technologies (Connected Compliance, 2020). It is unfortunate that with

the growing digital divide in Ukraine, a developing country, there is a growing technological backlog. The issues of strategic analysis of enterprises and organizations that have embarked on an innovative path of development, including technology transfer, are sufficiently researched (Shvets, V., 2015; Voitovich, N. et al., 2020); research of information and communication technologies (ICT) as a basis for digital economy and processes of diffusion of innovations (Khanin, I.

* Corresponding author:

^A Ph.D, Associate Professor of Tourism Business and Hospitality, e-mail: tatyana_sergiivna@i.ua, ORCID: 0000-0003-0440-5614

^B Ph.D, Associate Professor, Associate Professor of Marketing, e-mail: julia.goryaschenko@gmail.com, ORCID: 0000-0001-7020-1412

et al., 2020). Paying tribute to this works of scientists, we note that, at the same time, they need further research and consideration of the issue of marketing analysis of ICT, taking into

account market demands.

The purpose of the study is to visualize the results of marketing analysis of the current state and prospects of ICT business.

Material and methods

Marketing analysis is understood as «collecting information about the enterprise, studying it in several main areas (product, price, buyers, promotion) and using the results to select areas of business development as a whole and its individual components» (Moshenskyi, S. et al., 2007). The main components of marketing analysis are the analysis of the market, consumers, competitors, the study of goods, pricing policy, the system of demand formation and sales promotion, advertising. This type of analysis is conducted to justify the commercial viability of the project, assess the feasibility of a particular product in the selected market and obtain a level of income that would cover the costs of the project and satisfy the interests of investors (Mytaii O., 2011).

The methodology of ICT marketing analysis includes such stages as analysis of ICT demand and industry development strategies, market environment analysis, project strategy, marketing concept and marketing plan. Successful application and adaptation of technology, knowledge or research results obtained at one enterprise or field of activity for the needs of another enterprise or field of activity is a transfer of technology.

The author of the theory of diffusion of innovation, Everett M. Rogers, understands technology as a project of instrumental action that reduces the uncertainty of causal relationships on the way to achieving the desired result. In his opinion, it consists of two components:

- hardware – a device that embodies technology as a material object;

- information part (software) – information base of this device (Everett M. Rogers, 1983).

The object of technology are inventions, utility models, works of scientific, technical nature, computer programs, trade secrets, know-how.

Many scientists states that today in Ukraine is dominated by «outsourcing model of ICT business, in connection with which one of the key tasks is the transition to a «product model», which requires the intensification of innovation» (Khanin, I. et al., 2020).

Given the subject of the study, it is worth noting the difference between an innovative enterprise and a manufacturing enterprise that develops / sells innovative products. Innovative enterprises according to Ukrainian legislation include technoparks, technopolises, innovation centers, engineering centers, technology transfer centers, innovative business incubators, venture (innovation) funds, startups, etc. Industrial enterprises and other players of the innovation ecosystem can independently produce innovations or adapt / use as a customer / consumer innovative products and services of an innovative enterprise.

The study used the method of SWOT-analysis to assess the internal and external environment of the industry. PEST analysis to study the external environment that may affect the industry. Trend forecasting method for calculating the number of enterprises that will use ICT. ABC analysis to determine the most promising services for specialized educational institutions.

Results and discussion

To identify the factors influencing the internal and external environment of enterprises engaged in innovation, it is advisable to use the method of strategic planning, which

is a mandatory tool of marketing analysis – SWOT-analysis (table 1).

Note that ICT includes information technology, as well as telecommunications,

media broadcasting, all types of audio and video processing, transmission, network management and monitoring functions.

For the analysis of the macroenvironment of the enterprises carrying out innovations, we apply the PEST-analysis (table 2).

PEST-analysis (STEP) identifies political (Policy), economic (Economy), social (Society) and technological (Technology) STEP-environmental factors that may affect the strategy of the enterprise and industry.

Table 1 – SWOT-analysis of the ICT industry and technology transfer companies

Strengths	Weaknesses
High potential for the use of technology	Low cost of unfinished technological innovation
(Low) initial investment in technology development	Lack of the necessary amount of funding
No need to use production capacity	Inconsistency of technology portfolio with product policy
High added value of innovative products	Insufficient number of marketing specialists familiar with the specifics of technological and innovation management
The importance of achieving standardization	Insufficient competence to purchase technology and sell an intelligent product
Currently, building an innovation ecosystem is a priority for the country. In the conditions of anti-terrorist operation growth of a role of technologies of dual purpose	Lack of domestic technological equipment of the required class of quality and productivity in the country
Threats	Opportunities
Competitive environment caused by the nature of innovation	Selective growth and aggressive development
Bad market conditions	Establishing information exchange through distance education and training: seminars, symposia, exhibitions
The tendency to decrease scientists and the share of enterprises implementing innovations	Establishment of research and production and research associations and centers that provide services in the field of technology transfer
Unpredictable course and consequences of Covid-19	Ukraine's accession to the European Union
Instability of legislation, disharmony in political relations	Creation of technologies under the order of intermediaries (technology transfer center)
The difficult economic situation in the country, the deformed structure of the economy	Development of scientific and technological progress, the latest technologies
Lack of marketing opportunities to carry out sales activities abroad, the problem of patent purity	Possibility of carrying out by various enterprises and scientists of joint developments and researches (joint projects)

Source: supplemented by authors according to (Shvets V., 2015).

* factors are listed without identifying primary and secondary and without a detailed analysis of the relationship between them.

Table 2 – Influence of STEP-factors of the macroenvironment of enterprises engaged in technology transfer

Macro-environmental factors	Probability of impact
<p><i>Political:</i></p> <ul style="list-style-type: none"> - against the background of a large number of strategies for innovative development, imperfect legislation in the field of innovation and scientific and technical activities; - corruption factors; - fulfillment of requirements for EU accession; - low level of investor confidence 	<p>In recent years, the legal framework has undergone a number of significant changes, resulting in changes in working conditions for the analyzed industry. EU membership is a deterrent to any radical change, so no significant change is expected.</p> <p>Against the background of growing weakness of the country, distrust of developed countries and caution about their exploitation of innovations, ideas, startups.</p>
<p><i>Economic:</i></p> <ul style="list-style-type: none"> - declining GDP dynamics; - inflationary factors; - fluctuations in the hryvnia exchange rate; - outflow of human capital; - rising costs for energy, raw materials and communications 	<p>It is possible to predict a steady increase in demand for information services provided in the coming years. This means that entering the market at the moment and the gradual expansion of its presence of innovative enterprises is extremely favorable.</p> <p>Rising prices for energy, raw materials, supplies and transportation costs are a global trend</p>
<p><i>Social:</i></p> <ul style="list-style-type: none"> - changes in basic values; - changes in style and standard of living (new approaches of young professionals of generations X, Y, Z); - attitude to work and rest; - demographic changes: population decline; - the influence of the media; - education and training, including distance learning 	<p>Too much pressure on small and medium-sized businesses can lead to a serious stratification of business structures, curtailment of innovation in many enterprises.</p> <p>Lifelong learning is a global trend.</p>
<p><i>Technological:</i></p> <ul style="list-style-type: none"> - tendencies to decrease R&D; - formation of a new technological way of life; - increasing the role of high technology (developed on the basis of the latest scientific knowledge, which in its technological level exceeds the best domestic and foreign counterparts and competitive in the world market of knowledge-intensive products) 	<p>The development of information technologies and their increasing availability inevitably complicate the processes of their effective use. Accordingly, the emergence of demand for professionals who can organize their effective use in a functioning business. The trend has a long-term trend and is favorable for the development of the researched business. Development of digital technologies (Internet, virtual reality, augmented reality, artificial intelligence, additive technologies).</p>

Source: authors' development

Policy is studied because it regulates power, which in turn determines the company's environment and the acquisition of key

resources for its activities. The main reason for studying the economy is to create a picture of the distribution of resources at the state level,

which is the most important condition for the enterprise. No less important consumer preferences are determined by the social component of PEST-analysis. The purpose of the study of the technological component is to identify trends in the technological development of the enterprise or industry.

The dynamics of Ukrainian ICT enterprises for 2012-2019 are shown on fig. 1.

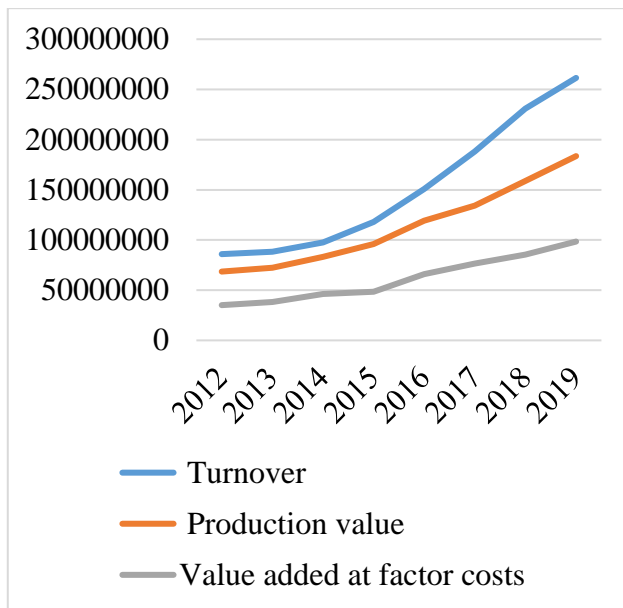


Figure 1 – Dynamics of performance indicators of enterprises for special aggregates of activities (Commission Regulation (EC) № 251/2009 of 11.03.2009) in 2012–2019 (thsd.UAH)

* – ICT total;

- High technology manufacturing;
- Medium-high technology manufacturing;
- Medium-low technology manufacturing;
- Low technology manufacturing;
- Information sector;
- High technology services;
- Knowledge intensive market services;
- Computer related services.

Source: authors' development based on State Statistics Service of Ukraine.

As can be seen from fig. 1, there is a clear trend towards growth of key performance indicators of enterprises. Let us focus on the analysis of the dynamics of production and implementation of information and

communication technologies, including ICT in production (ICT_M) and ICT in services (ICT_S).

During the analyzed period of 2012-2019, the total number of enterprises producing ICT increased by 32%, including ICT_M decreased by 19% and ICT_S - increased by 34%. The impact of automation and digitalization has led to a reduction in the number of employees at these enterprises by 28.5%, including 44% in ICT_M and 28% in ICT_S. Instead, the volume of sold products (goods, services), calculated according to the institutional approach, increased by 204%, including in ICT_M by 39% and in ICT_S - by 215%. The volume of ICT products (goods, services) produced during this period increased by 168%. Value added increased by 180%, including in ICT_M by 39% and in ICT_S - by 194%.

It is important for the country to maintain state statistics on the use of information and communication technologies since 2017. Generalization, comparison and analysis of indicators creates conditions for forecasting and assessing the current situation in ICT. Such indicators include: the number of enterprises that used computers; average number of employees who used computers (by type of economic activity and by distribution according to the average number of employees); the number of enterprises that had access to the Internet; the average number of employees who used a computer with Internet access; the number of enterprises that had specialists in the field of information and communication technologies; use of external communication enterprises with the Internet by type of economic activity and distribution by the average number of employees; use of fixed broadband Internet access by enterprises; number of companies that had a website; the number of enterprises that purchased cloud computing services; big data analysis, etc.

The forecast calculation of the growth of the number of ICT enterprises for the next two years is shown in fig. 2.

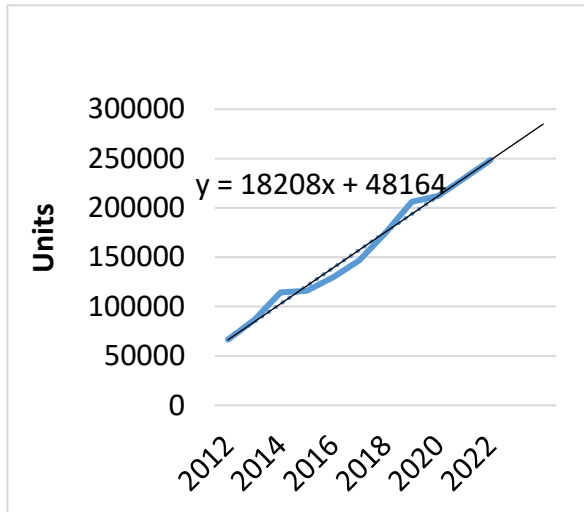


Figure 2 – Forecast of growth in the number of ICT enterprises

Source: authors' development based on State Statistics Service of Ukraine

In addition to the factors of indirect influence (listed in table 2), marketing analysis of ICT, taking into account market demands, includes a study of factors of direct influence. Among them are suppliers and clients (consumers) of knowledge, skills, final information goods and services, specialists in the field of information and communication technologies.

In the direction of formation of competitive specialists a lot of scientific and practical work is carried out at all levels of management. A special place is given to «modeling» (formation) of competent educators: researchers, scientists, practitioners, who in one way or another were, are and will always be a model of highly qualified specialists.

The ICT sector includes about 150 higher education institutions that provide training for ICT, including the computer academy «STEP», which since 1999 has trained programmers, designers and systems engineers, which cannot be replaced by artificial intelligence. To do this, the academy provides deep profile knowledge, teaches to understand tasks, think about ready-made projects and work in a team. «STEP» has 105 branches in 22 countries, in which 2,800 teachers teach 65,000 students. The academy graduated 136,000 graduates. The training program is discussed with stakeholders and partner companies – future employers of

academy graduates. This is necessary so that there are no weaknesses in the knowledge of students and the program itself. The purpose of teaching is to make education conscious, intensive and effective. Upon graduation, students receive an international diploma from the computer academy «STEP», as well as international certificates from partner companies.

The computer academy offers a wide range of services. Adult education (from 15 to 55 years):

1. Software development.
2. Computer graphics and design.
3. Networks and cybersecurity.
4. Professional computer education – training at the educational and qualification levels «bachelor» and «master».
5. Professional special courses:
 - Software testing;
 - Front-end course;
 - Development in Java;
 - Internet marketing;
 - Development and promotion of WEB projects;
 - Back-end course;
 - Programming in 1C environment.
6. Corporate training – training of IT specialists for enterprises.
7. Individual training – for those who want to gain new or improve existing skills one on one with the teacher.

Education for children (from 7 to 18 years):

1. Small computer academy.
2. Secondary school IT STEP SCHOOL (grades 1-10).
3. The first «STEP» for children 7-8 years.
4. Dnepropetrovsk Technological University STEP.
5. Primary school IT STEP SCHOOL (grades 1-4).
6. Children's programs:
 - Secret laboratory X-Lab;
 - Online programs for children;
 - Junior Business Academy.

Among the services provided by the identified the most promising for the industry academy, the method of ABC analysis, we (tab. 3).

Table 3 – ABC-analysis of educational services of CA «STEP»

Service	Cost, UAH / month (2020)	Fraction, %	Cumulative share, %	Groups
Dnipropetrovsk Technological University STEP	65000	47,48	47,48	A
Secondary school IT STEP SCHOOL (1-10 classes)	15540	11,35	58,83	A
Elementary School IT STEP SCHOOL (1-4 classes)	15510	11,33	70,16	A
Professional computer education	5417	3,96	74,12	A
Internet marketing	2800	2,05	76,17	A
Programming in the environment 1C	2800	2,05	78,21	A
Course Back-end	2800	2,05	80,26	A
Software testing	2800	2,05	82,30	B
Development and promotion of WEB project	2525	1,84	84,15	B
Development in Java	2525	1,84	85,99	B
Course Front-end	2525	1,84	87,84	B
Junior Business Academy	2300	1,68	89,52	B
Computer graphics and design	2093	1,53	91,04	B
Networks and cybersecurity	2093	1,53	92,57	B
Software development	2093	1,53	94,10	B
Small computer academy	1766	1,29	95,39	C
Online programs for children	1766	1,29	96,68	C
Secret laboratory X- Lab	1766	1,29	97,97	C
The first «STEP» for children 7-8 years	1456	1,06	99,04	C
Individual training	1320	0,96	100,00	C

Source: calculated by the authors

According to the analysis, three groups of goods were identified: the first group – the most valuable services: Dnepropetrovsk Technological University STEP, Secondary School IT STEP SCHOOL (grades 1-10), Primary School IT STEP SCHOOL (grades 1-4), Professional computer education, Internet marketing, Programming in 1C environment; the second group - low-value services: software testing, development and promotion of WEB projects, development in Java, Front-end course, Junior Business Academy, computer graphics and design, networking and cybersecurity, software development; the third group – the services that are least in demand: a small computer academy, online programs for

children, a secret laboratory X-Lab, the first «STEP» for children 7-8 years, individual training. Therefore, the main income is provided by the first group of services (A). Step Academy Computer Academy actively maintains connections with its students through information and communication resources: the site itself, social networks (Facebook, Instagram and YouTube), the Mystat mobile application and the Mystat service site.

According to a study by the computer academy's website, 3,750 visits per month were detected. For one visit, the user is on the site on average 1 minute. 32 sec. and browses 2 pages of the site. Almost 69% of visitors leave the site immediately after viewing the first page. The

rate of natural references is 92%. This means that users like the posted information and they share the link to the site with others. In the world ranking the site, <https://itstep.dp.ua/> is on 2,893,383 place. You need to reduce the value of the indicator, because the closer to the first place is the Internet resource, the more successful it is. Geographically, the main users of the site are from Ukraine.

Table 4 – Comparison of the use of social networks of the «STEP» spacecraft

Indexes	Facebook	YouTube	Instagram
Number of likes	10624	42	138
Number of comments	1582	2	0
Number of subscribers	75997	1050	4 932
Interest in content per day (ER Day)	0,033	0,52	0,35
Interest in content on posts (ER Post)	0,063	2,095	0,93

Source: Alexa, Site analysis

According to a study of the use of information resources, namely social networks, Facebook is best used in communication with users. This social network has the largest number of likes (almost 11 thousand), comments (1.5 thousand), and subscribers (76 thousand). The greatest interest in content per day (ER Day – 0.52) and content by posts (ER Post – 2.1) is observed on YouTube, where the most interesting content for users. Least interested in the information posted on Instagram, where user activity rates are lowest (tab. 4).

The mobile application and service site «Mystat» give students of the academy the opportunity to quickly communicate with teachers and the academy (fig. 3). Homework, additional materials for training, news (about competitions, consultations, events in

academy, etc.), the schedule of employment, requisites for payment, awards for high achievements in training (in the form of crystals, stars), a rating of success, contacts, questions are placed here and answers.

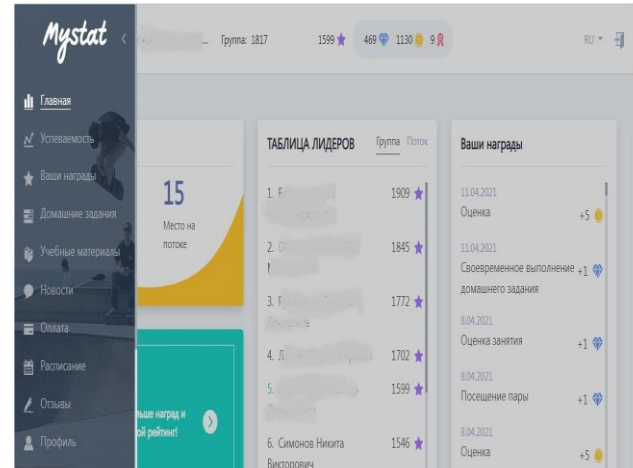


Figure 3 – The main page of the service site «Mystat»

Source: Mystat

Due to the coronavirus pandemic, in 2020 the academy began to use another information and communication technology to continue the education of students – the Teams program. Thanks to this distance learning technology, students have the opportunity to continue learning online. It should be added that globalization with digitalization, distance learning and work were reflected in Internet statistics and the use of Facebook and other networks in the country: according to Statistics of the World Wide Web in Ukraine as of 01.01.2021, there were 40,912,381 Internet users (with population 43,795,220 people). That is, the share of Internet users in Ukraine was 93.4% (compared: in Bulgaria – 66.7%, Romania – 73.8%, Spain – 92.5%, Iceland – 99.0% of the total population). Among Internet users in Europe, the share of Ukrainians is quite high and is 5.6%. As of the beginning of the 2nd quarter of 2021, there were 9.5 million Facebook users in Ukraine (Internet World Stats, 2021).

Comparative analysis of the competitors of CA «STEP» in the field of IT education is given in table 5.

Table 5 – The main competitors of the spacecraft «STEP» in the city of Dnipro

University	Specialties and tuition fee (2020), UAH	Forms of education	Qualification level	Availability of digital marketing tools
STEP Computer Academy,	Software Development, Computer Graphics and Design, Networking and Cybersecurity, Vocational Computer Education, Professional Special Courses Corporate training, Small computer academy, Secondary school IT STEP SCHOOL (1-10 classes), The first «STEP» for children 7-8 years, Dnipropetrovsk technological university STEP, Primary school IT STEP SCHOOL (1-4 classes), Children's programs. 1320-65000	Full-time, part-time, evening	Bachelor	Website, Facebook, Instagram, YouTube, mobile application and service site «Mystat»
Oles Honchar Dnipro National University (DNU)	Computer Engineering, Computer Science. 22100 d., 18800 ev.	Full-time, part-time	Bachelor, Master	Website, Facebook, Instagram, YouTube
National Metallurgical Academy of Ukraine (NMetAU)	Software Engineering, Computer Science, Automation and Integrated Technology. 20300 d., 7500 ex.	Full-time, part-time	Bachelor, Master	Website, Facebook, Instagram
Dnipro National University of Railway Transport by Academician V. Lazaryan (DNURT)	Software engineering, Computer engineering, Cybersecurity. 73200 d., 40500 ex.	Full-time, part-time	Bachelor	Website
Dnipro University of Technology (DUT)	Software engineering, Computer Science, Computer Engineering, System analysis, Cybersecurity, Information systems and technologies. 18100 d., 9100 ex.	Full-time, part-time	Bachelor, Master	Facebook, Website, Twitter, YouTube
Prydniprovsk State Academy of Civil Engineering and Architecture (PSACEA)	Computer Science, Software Engineering. 22650 d., 8000 ex.	Full-time, part-time	Bachelor, Master	Facebook, Website, Telegram, YouTube, Instagram
Ukrainian State University of Chemical Technology (UDHTU)	Software engineering, Computer Science, Computer Engineering, Cybersecurity, Automation and Computer Integrated Technologies. 19210 d., 8500 ex.	Full-time, part-time	Bachelor, Master	Facebook, Website, Telegram, Instagram

University	Specialties and tuition fee (2020), UAH	Forms of education	Qualification level	Availability of digital marketing tools
Alfred Nobel University (ANU)	Computer Science 22704	Full-time	Bachelor	Facebook, Website, Telegram, YouTube, Instagram, LinkedIn
University of Customs and Finance (UCF)	Computer Science, Cybersecurity, 23436	Full-time	Bachelor	Facebook, Website, Telegram, YouTube, Instagram

* d. – full-time education; ex. – part-time education; ev. – evening form of study

Presented in table 5 higher education institutions also provide services in the field of computer technology education, but their range of specialties is different. Thus, the greatest variety of specialties in CA «STEP», DUT and UDHTU. All universities, except DNURT (there is only a website), use information and communication resources: Facebook (the most popular social network), Instagram, YouTube, Telegram, the institution's own website. All educational institutions teach at the qualification level «bachelor», but there are some specialties for which you can get a qualification level «master». Students can also

choose the form of study (full-time, part-time, and evening). The lowest cost of education in 2020 was in CA «STEP», DUT and UDHTU. In addition, the competitive advantage of this university is 100% employment of graduates. So, among the mentioned competitors the academy «STEP» is in the lead on criteria: the largest range of educational services, various forms of training (day, evening, on weekends), the widest range of cost of training (from 1320 UAH to 65000 UAH), SEO-optimized site, social networks, mobile application and service site «Mystat».

Conclusions

This study developed a methodical approach to visualizing the results of marketing analysis of the current state and prospects for the development of ICT business, taking into account the needs of the market.

Strategically important task for business development in Ukraine is the support of its own technological level and, first of all, the development of information and communication technologies as a basis for the digital economy.

The importance of education in the process of «modeling» (formation) of competent educators: researchers, scientists, ICT practitioners, which are

the main resource of the information and communication industry, as well as highly qualified specialists who cannot be replaced by artificial intelligence. A comparative analysis of universities training specialists in the field of information and communication technologies showed the opportunities, advantages and disadvantages of the selected educational institutions and proved the importance of all components of the «knowledge triangle» defined in the EU Framework Program for Formation and Implementation of State Innovation Policy – science, education and innovation.

References

- About the state regulation of activity in the field of technology transfer: The law of Ukraine Available at: <https://zakon.rada.gov.ua/laws/show/143-16#Text> (accessed 11 April 2021).
- Alexa. Available at: <https://www.alexa.com/> (accessed 07 April 2021).
- Analysis. Site analysis Available at: <https://a.pr-cy.ru/> (accessed 07 April 2021).
- Digital economy: trends, risks and social determinants: The Center of Razumkov, Kyiv. Available at: https://razumkov.org.ua/uploads/article/2020_digitalization.pdf (accessed 11 April 2021).
- Dronova T. S. & Horiashchenko Yu. H. (2017). Strategic management of enterprises on the basis of modern marketing. *Economics and finance*, 11, 35-52.
- Everett M. Rogers (1983). *Diffusion of innovations*. New-York: The Free Press, 1983. 453 p.
- Internet World Stats Available at: <https://www.internetworldstats.com/stats4.htm#europe> (accessed 07 April 2021).
- Computer Academy «STEP» Available at: <https://itstep.dp.ua> (accessed 10 April 2021).
- Khanin I., Bilozubenko V., Serediuk T. (2020). Peculiarities of development of innovation diffusion processes in the ICT sector in Ukraine. *Economic space*, 158, 28-37. DOI: <https://doi.org/10.32782/2224-6282/158-5>
- Moshenskyi S. Z., Oliinyk O. V. (2007). *Economic analysis: textbook*, Zhytomyr: Ruta, 704. ISBN: 966-8059-94-8.
- Mytaii O. V. (2011). *Project analysis: posibnyk*. Kyiv, 311. ISBN:978-966-346-511-1.
- Mystat. Available at: <https://mystat.itstep.org/> (accessed 07 April 2021).
- Progressive companies invest in technology YouControl: analytical system for compliance, market analysis, business intelligence and investigations. Available at: <https://youcontrol.com.ua/ru/articles/prohresy-vni-kompaniyi-vkladaiut-koshty-v-tekhnohii/> (accessed 06 April 2021).
- State Statistics Service of Ukraine. Available at: <http://ukrstat.gov.ua/> (accessed 10 April 2021).
- Shvets V. (2015). *Transfer of innovations in logistics systems: posibnyk*, Dnipro: NHU, 219, ISBN 978-966-350-555-8.
- Voitovych N. & Poliak Yu. (2020). Technology transfer as a component of innovative development of marketing activity of agro-industrial enterprises. *Economy and state*, 12, 62-66. DOI: 10.32702/2306-6806.2020.12.62.

© 2021. This work is published under <http://creativecommons.org/licenses/by/4.0/> (the “License”). Notwithstanding the ProQuest Terms and Conditions, you may use this content in accordance with the terms of the License.