

## INFORMATION TECHNOLOGIES IN UKRAINE: PROBLEMS AND OBSTACLES

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**Summary.** In the article the problems and obstacles of developing information technologies of society in Ukraine are explored. The positive and negative consequences of influencing are certain and usage of the information technologies in the life of Ukrainian people. The concretes examples are considered.

**Key words:** an informative technologies, the Internet, a market, a network.

in Ukraine does not growing up the potential of human development but lost it, yielding to this index not only to the developed western countries, but also to neighboring Russia and Byelorussia. In addition, this comparative high index is represents that Ukrainian high indexes in education are not hopeless yet.

### INTRODUCTION

The prospects of developing informative society in Ukraine are limited by unrealized human potential. Ukraine is unable to develop the personal computer of own production, although in times of Soviet USSR she had similar ambitions. So far, there is only not unfounded impression, that Ukrainian nation is the passive user of the innovative technologies created by other nations, and does not offer to the world their own ones. Consequently, our society can not be categorized as smart society, in which indicates about the technologically determined social transformations, and related with transition from wide application of knowledge's to the mass using of information, from which by an automatic way in the necessary time and in the necessary place almost it is possible to «extract» the necessary knowledge's. At the same time, according to the UNO data, after the index of development human potential in Ukraine, it takes the 69 site from 170 countries (in 2010). Sharp property stratification, which generates the problems of poverty, absence of social elevators and etc., is a considerable brake on the way of human potential realization in Ukraine. This is necessary to consider, that during last years

### OBJECTS AND PROBLEMS

The problems of developing information technologies were engaged and researched by scientists from different countries, such as Artur Boguta (Lublin University Technology) [2], Brusilovsky P. and Miller P. [3], Cherednichenco V.S. [4], Galanter E. [5], Goldberg I. [6], Horoshco V.O. [7], Marcin Buczaj, Andrzej S umorek (Department Computer and Electrical Engineering Lublin University Technology) [11], Nawrocki W. [12], Petykiewicz P. [14], Sowa J. F. [16], Tlaczala W. [17] and they are asserts that every country has technological, public and another development information technologies features. Therefore the article purpose is researching of the problems and obstacles of development information technologies in Ukraine.

### RESULTS AND DISCUSSION

On a background the prospects of introduction information technologies in Ukraine with the purpose of human society degree is becoming obvious foolishness of human behaviour, which are enough through an edge at

the level of fictitious formed, bureaucratic corrupted and incompetence, removal of competent people conscious or irresponsible from the management, get up self-evident.

Except for that, it is necessary to consider with threats, that rising up in the case, if people intellect does not answer to the machines wit and when it is necessary to expect the usage of leader information technologies not for the welfare, but for the total control of the human conduct and even its modifications in the desired direction. Without regard to all external signs of progress, on the whole Ukraine there are negative tendencies of development domestic informative sphere. During last year's Ukraine is worsened positions in the various international rating, that certify its electronic consciousness causes.

In particular, according to the rating of developing information and communication technologies they were published in the World Economic Forum by experts in April 2011. Ukraine among occupied the appraised from 138 countries only the 90th place, considerably yielding to such neighbours as Russia (77 position) and Kazakhstan (67 position). But Sweden, Singapore and Finland are headed this list. The given rating is exactly important because he coincides with rating of network development, that is specifies on that, as far as this country or another country in the world is ready to use information technologies in the real life [9].

In the estimations participants of the II Ukrainian Forum of management by the Internet (Kiev, September 2011) were more optimistic, according to them the market of information technologies in Ukraine is on the verge of revolutionary jump, after which stormy extensive growth will begin.

Nearly from 6 million to 17 million Ukrainians are using the Internet. From year to year the quality of Internet gets better – the traffic, a capacity and fast-acting of which appraisal will growing to 2015 year as 48 times. Already today, from data of measuring company Pando Networks, Ukraine is a member of the first ten countries with the highest speed of developing information technologies.

Ukraine has the real achievements in the market of program outsourcing, under which it is necessary to understand the usage of the own benefit in stranger resources, no keys of selection from the production links process, low profitable and transmission to their specialized companies, grant of the resources to other companies, that are

occupied with similar business, but high results were not attained yet.

In the case with program outsourcing the question is shared participation of the Ukrainian performers in creation of the stranger finished product. Indeed, quite a bit software popular product in the world contain a peace of Ukrainian national intelligent, and the specific carriers of various intelligence companies information are arrange real headhunting. There are 55-60 % domestic outsourcings products on export, as piracy incident to Ukrainian market is revolved by modest necessities in the software products of internal producer. Ukrainian informative market has peculiar high degree of shade which is characterized by low index of tax collection and accordingly by low level of budgetary charges for it development.

Ukraine takes the 15 seat in the world rating of software producers. There are about thousand companies, witch are engaged in the information and communication technologies developing. From official data, about 25-30 thousands Ukrainian specialists are occupying here, although, out of doubt, in actual fact the number is bigger.

In the world export of outsourcing products the annual part of Ukraine received almost \$ 1 billion in 2010, but according to analytical agency Gartner the Indian export in 2010 was estimated in \$ 34 billion, Chinese - \$ 28 billion, and Russia - \$ 2,65 billion.

The global market of information export technologies is estimated by experts in \$ 90 billion and in 2013 year it can grow up to \$ 120 billion. There was a question in 2004, if Ukraine could be on the outsourcing field as a player without Russia .She has already became in 2006 an independent player in this sphere. Characteristically, if an outsourcing company were concentrated in large town, presently this direction develops in regions actively [8].

According to data of power, the industry is shortage of specialist: in Ukraine (2010) a 14,4 thousand of specialists was officially counted , that for the state with the considerable scientific and educational resource of their preparation extraordinarily had. At the same time in one of appearances chairman of the state agency about the questions of science, innovation and informatization of Ukraine cited such digits: 60-70 % domestic market of a particular branch is found in shade and 9 from 10 Ukrainian program works in the external market.

In such situation of warning impact to skilled specialist in a border or in the shadow sector of

national economy in natural way is to become one of foreground jobs of state informative policy, the state needs: to provide development of feedback processes by the assistance to entrepreneurial activity at information technologies, flexible reaction on the newest tendencies of its development and on external influences of this development; to create Ukrainian silicon valleys for deserving legal employment of Ukrainian specialists, the expansion of corridor their possibilities through the increase of government businesses, start to specialized projects in the field of information technologies, introduction of the grants system and etc.

Because of the high changing dynamics in industry, it is necessary to carry out the noting state policy of modern stimulation market not on the wave of enthusiasm, but according to the prognoses in relation with perspective directions of his development and cycle of the next preparation wave for specialists (4-5 years). Except for that, the relatively limited budgetary resources will be efficiently to combination alternative sources of financing in – the facilities of the international funds, foreign investors, informative companies, witch can be motivate by locally, and more global.

Determining the degree of processes influencing in informatization on the Ukrainian life and society (Ukrainian citizens), it is not impossible to mark an annoying fact with episodic statistical information and shortage of sizeable sociological researches.

Over that, until now there is no synonymous understanding, that measuring of exceptionally mechanical indexes degree of the newest information technologies introduction (although there are considerable complications) in no way passes the real picture of influencing these technologies on the everyday Ukrainian life and Ukrainians, which are in a great extent is measured by the volumes of the concrete services using , for which informative and communicative technologies are only a methods, instead the goal. Measuring of the Internet amount is the example of a similar inadequate approach - users in Ukraine. Their number is given out for enormous achievement in the field of informatization. Pursuant to data of sociology Institute 54,7 % -is not until now using the computers in Ukraine. However is comparative with the indexes of eight-year remoteness it is possible to mark substantial growth of well-informed amount – the untrained persons were 79, 8 %. But such as positive dynamics is deceitful, because it is arrived at exceptionally due to demographic changes.

Including the rising generation of young Ukrainians (which practically is 100% using computers), an index in actual fact changed: it was corrected by growth number of young people and departure of senior generation. That can mean only: actual absence of state policy from bringing to the new informative and communication technologies of senior Ukrainian citizens generations. Basic discussion around the index of amount in the Internet - users in Ukraine takes place in relation to the choice of concrete methodology of research, which affects an eventual index. At the same time the practical absence of reliable statistics in relation could be ascertain, how exactly the Ukraine citizens use the Internet and select tendencies growing key of common users amount.

The sociology Institute researches, even in 2008-2009 crisis years are demand on the Internet - services did not diminish, but grew up ,the estimation point of view is the explored features question about the Internet for our citizens and it is the considerably major parameter of network value , than another general tendency of growing users [5].

In general case the statistical information about the generalized directions of the using technologies by the citizens (entertainments, news, work, intercourse, etc.) even these forms of activity is practically absent. In this question exactly the reality allows to draw conclusion about that, if the information technologies are influenced on the society life, if they continue to execute a background function.

Statistical data from the economic sphere is an expulsion, which give an opportunity to assert that Ukrainians in separate directions of vital functions indeed begin to use information technologies for facilitation of the existence or acceleration of the certain real processes.

If a few years ago the shops were really exotic things purchases in the Internet , at least time in more than 10 million of Ukrainian people bought commodities or services in virtual shops, etc. Over that, the shops allows to satisfy the most unusual sectors of human mode exactly in the Internet sector.

Banking is actively developing market in the Internet - it has about 22% Ukrainian users of the Internet network, and it has about 3-3, 5 million people( although about 99 % of users are done less than by 5 operations on a month, it answers to the utilitarian using of the system especially - payment of accounts after vital and utilities economy, addition to the mobile telephones and etc.). The

«Touchpoll» company researches are 11 % plan to begin using such system in the near future, and potentially already in 2012 common amount of system users in the Internet – banking can be multiplied to 15-17 million. Needs to mark that not great extent have enough high rates of capture by our citizens, given technology are stipulated by the factor of information lack with existence of such favor: only 46 % from the common number of the Ukrainian network users of the Internet are know about existence of the Internet favor - banking.

The system of express-paying is developing on the same basis, that has also allows to pay the accounts. Such companies signed the special agreements, according to which they get possibility to give a chance to pay the basic types of accounts to the users. At the same time it has already sets the question of destroying in a high-quality new level in providing safety of personal information, as a subject of the condition low knowledge of Ukrainian citizens with principles of the Internet network safety, they could be a prey of criminals.

The pay terminal market in Ukraine is growing up (QIWI, 24nonStop, City-Pay), that allows to fill up quickly the accounts of mobile telephones, electronic pay systems, to pay for vital and utilities economy services and etc. The information of this market all time are corrected, however, for example, during 5 years the functioning system QIWI is total appeal to made 3,2 billion of grn., and the amount of transactions is a 105,7 million [15].

The possibilities of the Internet are actively used for various favourable actions or attempts of citizen's self-actualization - modern communicative possibilities of social networks are allowed to the citizens.

Technology of the remote bank service, which access to the accounts and operations with them is allowed at any time and from any computer, that has an access to the Internet network. To the prime examples of similar actions it is possible to deliver action of the wireless Kiss FM radio station, which proposed on the Aukro.ua personal things, souvenirs and unique suggestions of disc-jockeys. The facilities begun to work on the account of separation for child's oncology in the National institute of cancer became investigation of conducting action. Similar actions with the using of Internet network possibilities - it is that new reality, in which Ukrainian citizens are exist and which is substantially changes the parameters of their vital functions.

On this background, you can see modest successes of the state in the real (instead of model) informatization in the activity and facilitation of co-operations between government and citizens. It is possible to select a few reasons of such state (except for the chronic shortage of facilities on similar initiatives and absence of desire leaders in separate state institutions to carry out such transformations).

Most projects which are realized today, practically do not relate to the necessities of man reality, daily routine (at least - the Ukrainian citizen). For example, the sites of public authorities are actively include electronic waiting rooms or enabled possibilities for electronic appeal from the side of citizen. At the same time, even in the real life an amount of appeals (statements, queries and etc.) from public is not so big, and when they used this one, it is realized by traditional paper and pen.

The low efficiency of the law introduction is accepted in 2010 «About access to public information», which created proper legal support for the electronic management and other forms of developing informative society of modern type in Ukraine, testifies about actuality of this problem. However, as sociologists found out, most Ukrainians either do not know this acceptance law, or disbelieve in its efficiency. Only 3 percents of citizens took the right of advantage to send the informative query to governments. 52 % Ukrainian people are don't known that in Ukraine the law about access to public information is accepted, the main – people don't believe in possibility of this law to do power more transparent and less corrupted. One in five considers that this law is able to have certain positive influence. Only 36,5 % are heard something about it, but do not know exactly, and only 11 % are acquainted with this law.

According to the questioning there is most of those, who did not hear about existence of this law, in south regions - 64 %, and in Crimea - 88 % [10].

The state increasingly focuses on the internal processes of public information management (Back-office), paying less attention to the externally oriented processes. So, annually to the various « informational and analytically systems» in public authorities of all levels are given considerable facilities (at that such systems are often created on different types of platforms, that complicates their concerted work between them).

Informatization of the state specific areas could bring to a real counteraction over the corruptions on places, in what not often interested

experimental and underpaid paid workers of state institutions.

In general, the surplus theoretical problems of introduction electronic management should be noted, that results in tightening of practical steps and preparation of official records on the removed subject of general meaningfulness problem, while most of materials which prepares in foreign countries by the researchers on the theme of alteration of e- government, it is devoted to consideration of concrete projects, instead of generalized philosophical reflections in behalf of that or other model of co-operations.

Without regard to the noted failing and miscalculations, the Ukrainian state undertakes some enough successful steps on a way to the real application of information technologies for citizens are more meaningful for the life spheres.

In the beginning of 2011 year the Ukraine Ministry of internal affairs and inter-regional center of delivery passport documents that is engaged in preparation and delivery of foreign passports allowed to carry out online registration to the Center reception.

The pilot projects are begins in Ternopol from an electronic record to the doctor and conduct of electronic illnesses histories (a project is started jointly with a Danish company «WebAdvancers» without the investment of facilities from the side of the state).

However more meaningful achievements of the state, which at the same time cause most agitations from the side of public, connected with the sphere of education.

During the last ten years in Ukraine it was succeeded to create normative-legal foundation for development the sector of e-education. Already in the beginning of 2010 year the row of documents which regulate development and informative application was accepted information and communicative technologies in education: 4 decrees from President of Ukraine; 2 edicts from Verkhovna Rada of Ukraine; 16 edict from Cabinet of Ministers of Ukraine; 2 orders of education and science Department, youth and sports of Ukraine.

At the same time it is possible to consider this data only partly reliable. Even the brief survey of higher sites educational establishments (which usually are the key elements of the e-education systems) testifies to that majority from them plays the advertising and representative function and have a small differs from publicity booklets. In the real educational process in higher educational establishments modern information technologies are used, extremely unsystematic and episodically.

In the best case it is presentation systems, or in the high institutes it is television space bridge with the personalities.

Last years the usage of informative and prospecting system «Competition» is an informative breach at higher level educational establishments, that is appointed to inform operatively university entrants about the receipt of statements on the entry the higher educational establishments of the III-IV levels accreditation for gaining the educational-qualifying level of bachelor, specialist, master's degree of medical and veterinary-medical directions after directions of preparation (by specialties). Access to the system «Competition» is carried out to the address (<http://vstup.info>). The system functions in the global informative composition in subsystem and local subsystems of conduct the account statements receipt entering higher educational establishments. At the same time the idea of experiment and his motion to got the row of critical remarks from the side of experts, politicians, representatives of public organizations.

Considerably more active information technologies are includes in the domestic schools, more intensive is carried out such introduction. In September 2010 the general scheme of the Ministry education and science, youth and sport of Ukraine and the Institute of innovative technologies and education and maintenance «Shodennic.ua» started, whose goal is to create a unified educational network for all participants in the educational process. In 2011 an educational platform, on which «Shodennic.ua» works on, became the laureate of bonus World Summit Award in a category the «Electronic teaching and education» (E-Learning & Education). During a year more than 3000 schools (with 20 000 from the common amount of middle educational establishments) or about 100000 users were connected to this project. At the same time the detailed statistical data from the system are absent, consequently it is heavy to set in the level of penetration such system (in rural locality). Now it is possible to establish an providing role of such system which allows parents to control teaching of their children in more district way, presence in a class, to get on mobile telephones important information about visitation, teaching successes and etc [13].

On the way of conversion to given project into the life the low level of modern penetration can become a hindrance information technologies in rural districts, that it is related foremost to the lack of infrastructure development. For the

decision of given problem a national project is begun the «Opened world» by which is foreseen creation of national network informative and communication on the basis of technology 4G, that will be used above all things for the necessities of school education. During 2011 year to this project 800 Ukrainian schools are connected.

All these projects are the reflection of the culture dominant real state in society of a new type: no book-texts cultures, but the computer – screen cultures. Young people are reads little and even stops to write with a hand or do elementary calculations. Instead young people looks over quite a bit pictures, collects quite a bit texts on a keyboard, quickly considers on a calculator, that properly it is not appraised and it is not taken into account in the Ukrainian educational system.

The Ukrainian teaching must not renounce the traditional pictures of pupils literacy. But the attention must be paid on a new literacy generated by the epoch of information and communicative revolution and literacy informative-technological, as an ability to work with the informative devices but not with the expenditure purpose of own time, and with the purpose of spiritual and professional self-perfection. The same is touches upon mastering by the bases of pupils screen culture. That the Ukrainian young people very intensively use modern information technologies and the Internet network, in particular is led by sociological researches. As a result of questioning, nearly 80 % of students are daily (constantly) used the Internet (chats, forums, social networks). Over that – exactly playing computer games and pastime in the Internet – it is the second popularity form of spending free time.

These data are correlated with the data of Sociology NAN Institute of Ukraine up to the 20 anniversary of Ukraine independence, after which in 2011 about 20 % Ukrainian citizens link the leisure exactly to the computer (in 1994 such was only 4,7 %). The XXI century became in Ukraine the time of swift computerizing and Internet development. In 2002 nearly 80 % were not able and never used a computer, constantly only 4 % used computers at work. In 2010 remained only 55 %, other either work with a computer (15 %) constantly, sometimes uses computers (30 %). Needs to mark that the number of those, who in general does not plan to buy a computer, remains practically permanent – at the level of 29,9 %.

It is possible to mark, that an amount and general formed of the Internet network using is stipulated exceptionally by appearance of new «young» users, while more seniors remain out of

informatization processes. In such situation the material state of different population layers is instrumental.

As a result of questioning domestic young people, they do not feel strongly limited in a material plan - only 2,7 % marked that they critically have not the facilities (on feed), while to 70 % mark that considerable material confusions are not felt. Fully obviously, that such numbers substantially select young people from senior generation which are appurtenant to certain forces task and create a «digital precipice» between these groups [18].

All marked is stipulates priority of the using by students Internet resources for studying or searching information and only up to half of users usage it for communication (56,6 %). The level of penetration the same social networks in Ukraine (for example - Facebook) remains very insignificant in percents, and in attitude toward the common amount of users in network: at common their amount in 15 million only 1,4 million are users of Facebook, that is one of the lowest indexes in Europe. It is true, that there are some more powerful projects «Odnoklassniki» or «VKontakte». It is confirmed by the results of researching company InMind, according to which the domestic audience of social medias in digestive to 2011 year made 81 % active users for an average index in 61 %.

This level of immersion young people in the Internet and virtual space now allows to speak about the formation of new trends in the behavior of users that were not typical for Ukraine 4-6 years ago. So, already the mentioned number of swift growth amount of the Internet network users, reduced not only to positives, but also to the negative swift forming groups of people, which have dependence on the Internet.

According to the Institute of Social and Political Psychology of the national Academy of Pedagogical Sciences in Ukraine among the Ukrainian users of the Internet are considered dependent from 2 % to 6 %, absolute majority among which are students. In the group of teenagers with a high level of education, men's is the most dependence part on the Internet, this statistician is almost in three times exceeds women part. Almost the same indexes were exposed by specialists, which set that every fifteenth person (6,54 %) which has an experience of working in the Internet have a dependence on this already in juvenile age. Dependence is one of the Internet consequences even although compared with alcohol and drug addiction, this dependence less

harmful to human health, but its consequences have negative social and psychological color. In this sense the influence of this illness on the human relationships with the environment is the most substantial: it is complicate the relations between parents and children, in the married couple, between friends. So increasingly this disease appears during the trials of divorce, from labour disputes and even in relation to the criminal offenses (there is not single one cases of grave crimes like murders in Ukraine). Characterizing the theme of social networks, needs to mark that the Ukrainian sphere of social medias is differs even from the media sphere of Ukrainian neighbours. In general, it is characterized by a certain social lethargy and dominance content entertainment. Local (class, school, institute group and etc.) associations, which is forming the structure of a new society type.

The considerable public activity is not characteristic for the Ukrainian segment of social networks, as for example in Russia, where especially the Internet activity of the «Dark blue buckets» is reduced to the row of scandals and forced actions from the side of public authorities in relation to the movement members. Itself activity (number of users) it is not substance in social networks without her exit in real life. There were no social and political meaningful actions in Ukraine – up to nowadays there are any announced actions in social networks witch are collected the certain amount of admirers in a network, however in «practical» (street) part of action almost nobody come out. This once again, that it is difficult to consider social networks as a source of meaningful public transformations: they are the method of such transformations, but not enough reliable, because can help to spread that exists (deep protest), it is doubtful whether they could «to generate» him. Except this, it have been already mentioned the satisfaction of Ukrainian young people with own material position. This position makes out of them not very reliable revolutionary. The real "revolutionary" class in Ukraine is only the elderly people or groups of people witch suffer from budget diminution on social needs. But, according to the sociological researches, only 3 % over 60 years people have an access to the Internet and probably a little part is able to use it, and to use social networks. It secure obvious failures in the attempts of domestic politicians to use social networks in the advancement of own image or attempts to activate (to unite) their admirers by using similar projects. The most of such projects are created under the elections, after witch they

remain with minimum support of founder, or a founder in general loses interest in them, that leads of the domain sealing (how it happened with a project the «Ideal country») [1].

At the same time, the social networks can turn into the important method of self-expression youth. The world indexes of amount growing and format usage of social networks in Ukraine (according to a data of international media agency Universal McCann): using of social networks: there are 81 % regular users, when the typical index is 61 %; nearly 30 % of Ukrainian audience (and approximately the same percent in the world) using the mobile devices for staying out the Internet; it is set up, that Ukrainian users are actively employment of services Web 2.0, though in global scale the mobile Internet becomes a «new engine» of social media; its popularity in Ukraine have also responsible for indexes (accordingly – 63 % and 65 %); blogger users – in Ukraine and in the world – are mainly young people (to 75 % users in age 16–34 years). The Ukrainian government begins to use these tendencies in the process of adjusting effective external communication channels and effective strategic communications. In 2010–2011 the personal pages of public servants, mayors of cities, governmental mass-media were created.

This pages were created not to adhere to a residual principle (must be so), but most of them are fully supported (not personally, but special representatives). The telecommunication renewal is accompanies the disintegration of «universalism» structures and disintegration of society.

At the same time the integration of lowest level associations is increases: the local identities is the dominant local model of identities, it is called «new tribalism» according to the Herbert theorists type («pedigree sociality»).

As a «screen culture» is produce to weakening of logical generalization culture is certain ideologizing. The rational unique for whole society, the ideology either is done impossible quite, or considerably primitiveness up to the level of «comics». Accordingly to the ideologically motivated idea about the universal determinism orientation of social development is perceptions changing of its uncertainty and multivariate. Educational cultural identity is basis on the new social hierarchy's formation and social groups. Exactly the main social conflicts are basis in this sphere, as indicated in particular, the situation of the cartoon crisis in Western Europe.

## CONCLUSIONS

Currently, it can be concluded that growing telecommunication human capabilities is providing with the foundations for the new virtual teamwork and for the extinction most traditional forms of collectivism, that losing their intermediary, symbolic functions. Trends to dominance in society information technologies did not pass and in the Ukrainian society, which is a significant challenge for all creative forces, politicians, social and educational workers.

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### ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ В УКРАИНЕ: ПРОБЛЕМЫ И ПРЕПЯТСТВИЯ

*Ксения Серебряк*

Аннотация. В статье исследованы проблемы и препятствия развития информационных технологий в обществе Украины. Определены позитивные и негативные последствия влияния использования информационных технологий на жизнь украинцев. Рассмотрены конкретные примеры. Ключевые слова: информационные технологии, Интернет, рынок, сеть.