

## Application of ICT in Azerbaijan and Installation Issues of Information Systems in the Social-Economic Field

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**The article deals** with development perspectives of agrarian sector base on ICT explaining in detail the works carried out in the field of application of ICT sector in Azerbaijan in recent years. At present application of information technologies into agrarian sector of all countries is widely spread and it is stated in the article that application of modern technologies facilitates manufacture of qualitative product, efficient usage of labor potential at the regions, forecasting of production-market relations, establishment of profitable enterprise at this field. The works those are necessary to be carried out in this direction are also stated in the article. These directions consist of application of ICT in all fields of economy and infrastructure modifications required for this.

**Key words:** *ICT, innovation economy, internet, new technologies, electronic trading, ICT Techno Park, electronic services*

The latest achievements of ICT are applied successfully in all fields in Azerbaijan as other modern countries of the world and this step leads to productivity especially in the economic sectors. In general, the Republic of Azerbaijan has some strategic goals in the application of ICT achievements which based on human intellect.

First, growth potential of oil-gas deposits is exhaustion character and the production level of natural resources will be stable in the near future. Therefore, the transformation of country's economy from natural resources to the technological and innovation economy is very important. ICT has been considered priority in the transformation from the economy based on natural services in Azerbaijan to the economy based on technological knowledge. The most productive way to convert oil profits to the "human capital" is to use innovative technologies in the field of science-technology, education, economy and industry. [1]

The second is to enhance the level of people's knowledge and income and eliminate the dependence of import of some products in the economic fields creating scientific fields in the near future. We can say that a dynamic policy embracing these goals in the state level is being fulfilled in Azerbaijan at present.

Ilham Aliyev, the President of the Republic of Azerbaijan said: "I see information-communication technologies as a priority among others in the near future. Knowledge and education will determine the place of the countries in the world. Therefore, we have to focus on this field. Special attention must be paid to the field of science and education, and this field must be in the foreground. The programs which have been accepted regarding the development of the science and education of the youth lately seek this goal. At present, there is enough strong scientific potential in Azerbaijan. This potential will become stronger soon, especially for the account of the youth. Therefore, information-communication technologies, scientific and educational fields must be priority for the next years". [5]

Demonstrating the devotion to the ideas of information society Azerbaijan took an active part in the World Summit for the Information Society held in Geneva in December 2003, in the next summit held in Tunis in November 2005 and began to fulfill the results of the international meetings. The date May 17 is celebrated as the Day of "Worldwide Information Society" in Azerbaijan since 2006.

The works done in the ICT field and future problems are the focus of attention. State Program on the Development of Communication and Information Technologies in the Republic of Azerbaijan for 2010-2012 (Electron Azerbaijan), creation and development of

aerospace industry, application and development of DVB-T digital broadcasting system and creation of biometric identification system have been accepted under the decrees of the president and are being fulfilled.

The laws of the Republic of Azerbaijan on "Information, Informing and Data Safety", "Electronic Signature and Electronic Document", "Electronic Trading", "Obtaining Information", "Telecommunication", "Post", "State Registry on the Population of the Republic of Azerbaijan", "Biometric Information", and "Personal Information" have been accepted. Strategic goals for the future such as carrying out wide reforms in the communication and information technologies, modernization of telecommunication networks and creation of specialized independent economic zone – techno park are set in these laws. [3]

We can say that positive results have been achieved in most directions thanks to the activity based on international practice in the ICT field, leading technologies and productive partnership.

Annual average growth temp of income obtained in the country within 2005-2011 is 2.5-3 times more than world-wide index and the share of private sector in the ICT market reached to 80% within these period.

Carrying out reforms serving for formation of independent competition environment in the ICT market, including efficient privatization and regulation have been a cause for creation of new stable and mobile communication operators, producers of ICT products and services, and their becoming active members of ICT market of the region.

Our country has achieved average level for main infrastructure indicators of ICT in the world. According to the report of the Ministry of Communication and Information Technologies, there are 110 mobile phones per 100 head, 65 percent of the population is the user of internet, and half of them are the user of broadband internet in the Republic of Azerbaijan. This is nearly 2 times more than worldwide average indicator.

National telecommunication, post and tele-radio infrastructure conforming to the modern standards are established in the country. Installation of telephones have been carried out in all settlements of Azerbaijan and single 7 digital system and "New Generation Network" technology allowing us to use telephone, internet and television services via one channel have been used. Installation of fiber optic main networks covering all the territory of the country and location of regional information servers increased the export of internet services from actively Azerbaijan to the regional countries.

Cover of more than 85 percent of the population with digital broadcasting, rendering bank-finance services by post offices, application of "electronic signature" in the frame of done works regarding formation of "electronic government", creation of "electronic government" portal, as well as realization of "e-education", "e-health", "e-taxes", "e-customs", "e-justice" etc. projects are the most important achievements stimulating the development in the field of ICT.[2]

The first telecommunication satellite will be launched into the orbit in the end of this year as an important step in the creation and development of aerospace industry. Researches regarding the second telecommunication satellite are going to be end and launching of the satellite into the orbit is planned for 2015. Launching lower orbit little satellite into the orbit is planned for 2013. Main and collateral Surface Satellite Management Centers meeting top international needs to control the satellite within the territory are being constructed in the country. "Azerspace" satellite belongs to Malaysia and it will be launched to the 46° eastern length orbital position used by "Measat Satellite Systems". [6]

According to the calculations, launching telecommunication satellite into the orbit will stimulate realization of the projects regarding information in the political, economic, technical fields and will contribute to the development of these fields. Here include the issues such as enlarging the integration to the global information environment, ensuring

the opportunity of connection of legal and individual persons to the satellite network, providing the population with high quality satellite communication, radio and television broadcasting, monitoring of environment in the country and forecasting technological emergency cases, determining the scale of oil spilling in the sea and on the land.

If we here include the creation of new working places and training of new specialists, then we can claim that launching a new artificial satellite into the orbit will contribute both people and country.

There exist a great potential for the development of the internet in Azerbaijan. Surrounding of republic territory with fiber-optic main networks, phoning of all residential places and electroning of phone network and the application of 3G technology in mobile phone networks, as well as 4G (LTE) services gives an opportunity to exit to high speed internet in any place of the country.

The role of private sector in this segment is increasing. There are approximately 40 internet service provider and more than 600 internet club in the country. At the present time, internet connection speed passed 100 Gbit in global internet network of our country, so it gives an opportunity to export internet services to our republic – to regions. In last 4 years, internet price was decreased till 10 times in the country for the purpose to enlarge internet use of the people.

“Activity Program on the development of broadband internet services in Azerbaijan” was adopted and is going to fulfill according to the targets determined by Broadband Commission on Digital Development of International Telecommunication Union. The increasing of rating of the country in ITU (International Telecommunication Union) and other trusty international organizations, broadband internet infrastructure potential and its use, as well as wireless exit to high speed internet in public places will be provided with this program. Besides that, national content will be developed and the volume of domestic traffic will be increased.

The special license for the activity in the field of 3<sup>rd</sup> family (3G) mobile communication services was given to mobile operators acted in the republic in 2011. In a short period, the users of 3G services in Azerbaijan passed approximately 3 million. More increasing of the given service level, taking proper measures in time analyzing telecommunication market cause to say that, the users of that service will increase much more in future. New technologies are learned constantly and necessary measures are taken for its application. Now researches and consultations are carrying out related to the application of 4G (LTE) service.

One of the steps realized in the last years in Azerbaijan is the application of “e-signature” from ICT achievements point of view. Approximately 900 electron signature certificates are realized up today. Now, the identification of the persons who appealed for the services such as the submitting of many electron services rendered for people by state authorities, for example, official documents, declarations, applications and others are required univocally, also stipulates the turnover of electron documents among state authorities. From that point of view, the application of electron signature will create a condition for wide use of “electron government” services and will provide the safety and reliability of their individual information in the process of information exchange. Electron signature will increase the exit opportunities of the users to electron services and will enlarge the rendering modern, comfortable and qualitative services for them, as well as the use of “e-government” and “e-trade” solving.

Wide application of ICT in Azerbaijan also stipulates the process of its local production. Legislative base was formed for it and the law of the Republic of Azerbaijan on “Special economic zones” was adopted in 2009. According to this law, the companies acting in SEZ (Special Economic Zone) will get several economic grants. The project of Regional Innovation Zone (RIZ) is realized in state level to hold grants mentioned in law by ICT companies. It is considered to establish industrial park specialized on the production

of ICT products in the frame of RIZ. In current stage, the establishment process of industrial parks is carrying out in Baku, Sumgayit and Ganja cities of the republic. Here includes important industrial fields such as alternative energy products, heavy machine-building and electric equipment, aluminum production and chemical products. It is considered that, the investments will be invested for establishment of ICT industrial parks in state level in the following stage. Because, intensive use of ICT and technological innovations affected to daily life of the people in all fields of the economy increase the demand for ICT products and services year after year. The volume of ICT market of the country is increasing with accelerated temp. So, it is the factor which creates a condition for increasing of the production.

We must inform that, the expanding of ICT technologies creates important duties. At the present time, the issues before Azerbaijan Republic may be characterized so. At the first, modern inclinations of the economy are to be considered and local production in ICT field must be stimulated. Special economic grants are needed to achieve export-directed production growth for the purpose of increasing the stimulation of local production and compatibility of the local companies. The adoption of legislative law on special economic regime on ICT sector may be advisable.

Tax and customs grants, which application is available, must be reflected for the purpose of activity stimulation of ICT companies in the packet of these proposals, as well as it may be advisable to create Investment Fund on IXT sector as being in many modern countries. This fund may realize the usage opportunities of financial resources of the state on important issues such as formation of new science intensive and innovation-directed projects, drawing of qualified specialists to projects and production in micro and nanoelectronic fields, software and information transport to region markets. This fund also may seriously support training of young high qualified staff. Investment fund on ICT may give a chance involvement of specialist willing to engage in scientific-research and innovative work to start-up projects, successfully strengthening of new company and firms within short period and reaching to the profit level.

Secondly, development of legal market in order to realize transfer from natural resources to technological and innovative economy is the main requirement of today. Supporting of technological and innovative companies with special compromises by state has great importance. These compromises in its turn accelerate the process of making local and foreign investment to the technological, scientific and innovative companies. Establishment of economy based on high technology and innovation is closely related to development of human resources. Only human factor acts in the capacity of innovation carrier and paves the way for creation of new ideas. Therefore, beside technique and technology used for achieving productivity in country economy, attention shall be paid to the development of human resources.

Thirdly, the project of "E-government" commenced to apply in all ministries, committees and structures shall be cause formation of stabile market in respect of rendering electron services, transparency and efficiency at the matters of giving permissions in business field.[4] Finally, in the near future widely application of ICT in all spheres of economy especially in the scientific and productive fields of agrarian sector shall be achieved. Azerbaijan as an agrarian country always follows tendencies at the foreign markets and we can say that modern market requirements call for enhancement of production quality. This includes provision of continuity and quality of production in the field of agriculture by using modern innovation.

## RESULT

It is impossible to imagine the economy without ICT at this information age. Application of these technologies caused for enlargement of intellectual activity field, provision of food safety, efficient usage of natural resources at each country. Application of ICT in all fields of economy, including establishment of electron resources, base information systems, trade-sale and information sites and improvement of excising in order to strengthen data-ware of agrarian sector are proposed at the article.

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