

Modern Trends of E-Commerce, Software Market and Business Development in Azerbaijan

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Abstract— the article discusses the development of e-commerce, market and business in Azerbaijan. There's a comparative analysis with a number of countries, including Eastern Europe and the USA. An attempt is made to identify the resources and capabilities for improving this area of the country's economic development.

Index Terms—Electronic Commerce, Electronic Services, Internet, Software Market

I. INTRODUCTION

INTERNET AS A PLACE FOR COMMUNICATION - Over the past decades the amounts of processed information and the activities related to it have increased tenfold. This process is typical not only for our country but the world as a whole. Information society that we have become a part of is characterized by the availability of information and new qualitative level of its processing provided by the ICT. As a result, the processes of economic development have accelerated significantly, especially when it comes to finances, trade, infrastructural divisions of enterprises, the system of economic management in general, structural changes by production industries, agriculture, the growth of the service sector in industries such as tourism, sports and recreational activities in general.

In general, the impact of ICT on the development of the Azerbaijani economy can be considered a number of areas, among which are the following:

- The effectiveness of the institutional system and management structure, which is reflected in the socio-political, economic, spiritual and moral development in established political regime, in the nature of management system in the spheres of social and economic life of;
- Economic growth prospects and the possible need for changes in the structure of the economy, due to the possibility of direct application of ICT in various sectors;
- The problem of external liquidity and foreign investment policy that is directly related to turnover of the oil capital;
- Budget figures, including such as public debt, budget deficit, the results of the monetary economy.

Azerbaijan Internet has its own ethno-cultural peculiarity of development. It is based not on the rate of Internet penetration throughout the country, but more likely on the general level of education, which keeps decreasing from year to year. [1] The Internet penetration rate in the regions isn't indicative of e-commerce development or the increase of interest in encyclopedic and scientific portals that is in knowledge. Knowledge comes from the source, but the number of sources in Azerbaijani language is reducing.

Although oil revenues are used to somewhat modernize the streets of Baku, where we can see a huge amount of

foreign cars, but in terms of science and technology a psychological portrait of our country is changing under the pressure of external forces, which are the foundations of scientific and technological progress in the whole world. This is obviously a complex situation. The country's contribution to the world science is equal to the inflow of financial resources received from the sales in the energy sector.

According to the Ministry of Information Technologies of Azerbaijan, the statistics of broadband Internet penetration in Azerbaijan amounts to 30%. In the country broadband ranking list, compiled by the International Telecommunication Union Council and UNESCO, Belarus took the 34th place in the world in terms of broadband Internet penetration rate, while Azerbaijan ranked only 58th. For every 100 people in Azerbaijan only 11 are Internet subscribers. [2].

Another important factor is an estimate of the processed and updated information from the Internet users. If we compare the top 10 most visited websites in the Czech Republic (according to alexa.com from February 11, 2013), 6 websites out of 10 in "Top 10" are Czech belonging to the local CZ domain.

In Belarus, this number is equal to 2. The main reason for this is that Belarusians are the Russian-speaking nation, and many popular resources are Russian. Still, the Belarusian website presented in the "Top 10" is into e-commerce.

In Azerbaijan, only two websites rank in the "Top 10" of most popular resources, and both are news websites (trend.az, day.az). They resemble each other in some way. Unfortunately or not, today social networks have taken the place of many more useful Internet resources, in some cases relegating live communication to the second place. "Facebook" and "Odnoklassniki" social networks are dominating in Azerbaijan.

I intentionally compare these two economies with Azerbaijan since the economic and demographic characteristics of these countries are similar to a certain extent.

News giants in Belarus (tut.by) and Azerbaijan (day.az) were created almost at the same time. But the difference in the website traffic for February, 2013 is considerable. Every day tut.by website gets 500,000 unique visitors, while the amount of traffic on Azerbaijan day.az is equal to 150,000 unique visitors per day.

II. TECHNOLOGY PARKS AND ANALYSIS OF THE FUTURE MARKET

Global processes have created a launching ground for a successful integration of the IT sphere in Azerbaijan. The year 2013 in our country has been declared the year of IT.

What exactly do the IT and Internet business

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mean for our country? How to develop it? Where to start? In this article we are going to analyze the trends of development and expansion of the IT sector in Azerbaijan by means of creation of the new websites for e-commerce and online auctions.

According to A. Abbasov, the Minister of Communications and Information Technologies of Azerbaijan, the volume of information and communication technology sector in Azerbaijan is expected to grow five times in the next eight years. It's very important to create a High-Tech Park, the construction works for which are already being performed. The High-Tech Park will facilitate the support of intellectual business, the increase of competitiveness and the expansion of national products into the world markets. [3]

In our case it's relevant to compare and analyze a similar Russian project known as "Skolkovo Innovation Center." On March, 25 the "Vedomosti" newspaper published an article with comments of investors, business representatives and government officials on the creation of an "innovation city" in Skolkovo. Speaking at the conference of American Chamber of Commerce *Jack Barbanel*, from Strategic Investment Group said that the "innovation center in Skolkovo is devoid of the main trump card required for success – the scientific minds that are capable of making a breakthrough. He says that the scientific potential in particular served as foundation for the US Silicon Valley and Massachusetts Institute of Technology; "the primary condition of a successful innovation center is a laboratory of ideas, which can be converted into "income" afterwards; he estimated the ideas of a world-class innovation city in Skolkovo at 5% [4].

The current Azerbaijani reality is that the country has a large amount of free capital, which can and should be successfully diversified in the scientific and intellectual sectors. First of all the ICT sector includes the selection of personnel (recruitment process), protection of the intellectual property, building of an image, promotion of the innovative product and teaching of innovation management, etc. The last statement of M. Mardanov, the Minister of Education of Azerbaijan concerning the level of informational support of the education system is as follows: "The current level of informational support of the education system can be safely estimated as satisfactory and it will grow as long as this sector is being financed"[5].

At the same time, M. Abbaszade, the chairman of the State Student Admission Committee made a rather paradoxical statement on the reasons why the exam passing scores in the one specialist group were reduced to 150. After all, the one specialist group of is the motive power and the base for ICT development. [6] The development of information system doesn't mean highly qualified personnel; it is human recourses that play the crucial role.

In addition, according to the "Development Concept: Azerbaijan 2020", along with keeping the annual ICT growth at the level of 18-20%, the revenue of the sector is expected to reach \$8-9 billion over the next 8 years, therefore the revenue from ICT sector will be equal to the revenue from the oil sector in Azerbaijan [7]. But today there are no real numbers and statistics showing the current situation in the field of information technology. And considering that today 75-80% of Azerbaijan budget are

generated by the oil fund and taxes in the oil sector, and the rest 20% are mainly received from taxes and customs, the diversification potential of Azerbaijan economy seems extremely vague.

Just for the sake of analytics we can review the budget of Azerbaijan for 2013. Azerbaijan budget is divided mainly between these sectors:

1. Industry and construction - 35%
2. Expenses not related to the main section - 15% (?)
3. Social protection and social security - 9%
4. Education - 8% [8].

In a couple of years it will be clear what principles will be used to build the development process of the ICT sector.

III. WEBSITES, PORTALS, THEMATIC PAGES

In order to understand the market conditions of the Azerbaijan ICT sector it's necessary to turn to statistics and already existing service websites and selling pages. Assuming that technical equipment and electronics are mainly imported from abroad, the issue of retail sales appears to be very relevant. The economy of any country depends on how the medium and small-medium businesses are developing. In developed countries, ample opportunities for the implementation of Internet technologies are a prerequisite for the development of any business or commercial service. There are a lot of reasons for this, the main of them being convenience, speed and a new type of market expansion.

The largest and most popular auction in the world - ebay has a good reputation in Azerbaijan due to the established system of seller and buyer rating. However not only due to that, but to an enormous amount of products, huge discounts, a good system of postal delivery, and most importantly really competitive prices. EBay rating in Baku and the regions is quite high, the website traffic amounts to about 50,000 unique visitors per day. Only the turbo.az car sale portal can boast a wider user audience of about 60,000 unique visitors per day (as of February 14, 2013).

So why the Internet in Azerbaijan is developed mainly through the information portals? What's the reason?

In today's world, where the Internet has become a platform not only for information, but also for controlling the masses of people and nations, as well as changing the paradigms of the entire societies, the information technologies have played the role of the main violin. The possibilities of the Internet have not just widened, but become a new round of human relation development. The best example of Internet technologies in the name of politics is the "Internet and Society" Beckman Center, located in the U.S. (something the local secret services should worry about). It is engaged in two things: studying the blogosphere and the development of FSESs, that is, the education standards for different countries, including the standards of education in Azerbaijan. [9]

Information portals or news websites have a large audience all over the world. And the trend is likely to remain at the same level, but with an addition of the new options, such as video reports (online TV). There are thematic resources in Azerbaijan (obyektiv.tv, kanal13), but the quality and the level of news broadcasts at the

moment is quite low. The Internet TV market in Russia is developing at a much faster pace. And it's not only about the YouTube (youtube.com) video channels with hundreds of thousands of subscribers, but also about the new generation Internet TV (tvrain.ru, russia.ru) with feedback communication, an opportunity to discuss any program live and take part in debates, etc. This segment of Internet will develop even on a larger scale. Therefore, the monetization of the Russian Internet resources, if accompanied by the quality information management, is not that complicated.

Monetization in Russia is easy because the processing companies (merchants), as well as mobile operators provide convenient and flexible price plans for the Internet services. The situation that has developed in Azerbaijan is a little different. For example, the commissions of the processing companies in Azerbaijan (processing of credit/debit cards) are 1.5% higher than those of the Russian merchants. SMS payment processing in Azerbaijan has inflexible conditions, to say the least. Mobile operators charge 50% from the processing of any amount of services (SMS).

Google AdSense is a giant of contextual advertising. AdSense is free and easy-to-use program that offers website publishers (both large and small) an excellent opportunity to earn money by placing relevant Google ads. In addition, AdSense allows publishers to enable Google search on their websites, this way generating income from displaying Google ads on the search result pages. Of course, the startup websites that get over 300 visitors per day should start using the services of the giant to monetize their resources [10].

IV. THE ICT SECTOR AND PERSONNEL

While the problem of the Internet project development in Russia is related to the legal system, in Azerbaijan it's not totally relevant. There are a lot of reasons for this, but I don't want to repeat myself or discuss a distressful problem of personnel, as well as the possibilities of expansion of the local IT projects by means of external recruitment.

Globalization, as a new stage in the history of economic and political thought, has failed, having built a new order afterwards. The unitary world has become more flexible. Internet as a global project is constantly changing. The Internet is facilitating fast distribution of information and its comprehension by ordinary people and this is one of the main peculiarities of the new world. In this regard the process of establishing any enterprise or a project with the help of IT is very important for us. But in any case, the issues of personnel and optimal solution of the problem at any level, be it the creation of a social network or an unmanned aircraft; require a new, special approach to their solving. In the course of time a well-established scheme in any open or closed system has to be not only optimized but also reformed. A particular feature of the IT sector and market is their constant expansion and improvement. Today, the IT sector is thriving. The market is divided into two sectors - software and hardware markets.

A little further on we will analyze the issue of investments in the ICT sector, the policy of Chinese companies and the government, as well as their attitude to the personnel and work processes in the companies that have already become supranational. And now let's have a look at the world's software market.

Mass software market appeared 27 years ago. This happened on October 1, 1980 in Miami, when Bill Gates has made the most important deal of his life. And IBM has made the biggest mistake having bought the Basic programming language from Gates and got the rights to install DOS operating system on their personal computers for free, while IBM was prepared to pay for the Basic and the operating system. The modern software market fundamentally differs from the market of the 80s. Thousands of companies (not a dozen and a half as it was back in the day) with a turnover from hundreds of thousands to tens of billions dollars operate on the market. But the main feature of this business has remained unchanged since the deal between Microsoft and IBM: new market segments and niches in which even small companies can compete with the software giants are constantly created. As we have already pointed out, the world has become globalized.

That's why the new world offers great possibilities to launch own products. In 2006, more than 35% of the global software market was controlled by just six companies: Microsoft, IBM, Oracle, SAP, Symantec and Adobe. Each of them dominates in its segment. In case of Microsoft it's operating systems and office software. For IBM it's infrastructure software, Oracle – databases, SAP - business process management systems, Symantec - security and antivirus software, Adobe - desktop publishing software, applications and utilities.

Business growth rates of the top six companies are above the market average, also due to acquisitions. Large software developers are constantly acquiring assets, exploring new market segments or increasing their project portfolio in the key segment [11].

The R.I.S.K. Company can serve as the best example of a successful software company. It's the leading system integrator in the countries of Eastern Europe and Central Asia, which has been operating on the market since 1993. The company is focused on providing solutions in the fields of: IT consulting, systems integration, IT outsourcing, software application development and geographic information systems.

For more than a 19-year period of activity, the company has become one of the most successful organizations in the region, with an extensive package of innovative solutions for the government, financial, telecommunication, oil and gas and transport sectors. The company's solutions are a versatile instrument used to optimize the business processes of the vertical market participants and increase their efficiency.

The company's activity is focused on the fulfillment of the socially significant projects involving the implementation and development of ICT infrastructure, information security systems, application platforms, systems based on its own technological developments and solutions of the fellow IT market leaders. For example, today RISK research and Production Company supplies computers, server equipment and software for the Central Bank of Azerbaijan.

It's a good example of a company, which managed to achieve great results and domination not only on the local software market within years - the contract with the Aeronautical

Information Service of Eastern Siberia LTD (Irkutsk), the second one - with the State Scientific Research Institute of

The RISK company started the implementation of PANDA flight procedures design system and ACCENT

flight navigation system developed by its engineers in the Aeronautical Information Service of Eastern Siberia. Russia became the tenth country in the list of states using the developments of RISK for air navigation services.

Today, these systems have been successfully used by air navigation services in Azerbaijan, Kazakhstan, Belarus, Moldova, Latvia, Estonia, Thailand, Brazil and the Dominican Republic. [12]

The absolute support of such company at all levels of its penetration into the foreign markets should be a matter of national importance.

Design and production of informational safety instruments have widespread in recent years and are actively developing at the moment. They play an important role in solving issues of national security, thus being involved in forming the legal framework, creating structural units in the system of management, improving technical means to ensure this safety. Banking systems, large companies and firms, as well as industries, which are of strategic importance to the country and its law enforcement agencies, are being the most active among them.

Wireless telecommunications is currently the most actively developed ICT sector due to the rapid rate of its growth, as shown by the statistics. Launching own communications satellite has no doubt played a major role here, increasing the possibilities of satellite communications threefold, and ensuring even faster rates in the future.

That being said, the production of computers and

Air Navigation Federal State Unitary Enterprise (FGUP of the Aeronavigatsia USSR, Moscow). auxiliary equipment is dropping year after year. Obviously, not every country and not every company is able to compete in the global market, which is confirmed by the fact that the production of electronic boards hasn't been commercialized to an appropriate level and is decreasing year by year. The need for this type of products is satisfied through international deliveries.

At the same time, computer and auxiliary equipment and communication equipment repair services are gaining momentum. This ICT development sector also has a big potential, since the repair requires highly qualified personnel, sharing experience, etc., and the process itself enables many professionals and technicians to specialize in this field.

Great progress has been achieved in the use of web pages (Internet portals), however this direction is facing a significant problem – maintaining a proper amount of traffic.

Other information technology and computing activities are also being actively developed, meaning that the diversity of information and computer technology is interlinked with the country's economic activity: various sectors and areas of industry, agriculture, law enforcement structures, education, science and culture. That being said, the ICT sector, given its crucial importance in strengthening the country's economic, military and political power, should have a strategically important place in the state's economic policy.

Let's take a closer look on the basic indicators of the ICT sector and ICT product trade in Azerbaijan.

Table 1. Key Indicators Of The Ict Sector And Ict Product Trade In Azerbaijan

INDICATOR	2011	2012	2013
Production (incl. services) in the ICT sector, mln AZN	1236,4	1420,2	1528,0
Communications sector	1114,9	1289,2	1341,6
Volume of added value created in the ICT sector, mln AZN	786,7	861,8	920,1
Communications sector	714,6	783,5	810,8
ICT enterprise investments in fixed assets, mln AZN	408,7	307,3	192,4
Imports of the ICT products, mln AZN	262,6	249,2	203,8
Computers and auxiliary equipment	73,6	66,5	50,8
Telecommunications equipment	136,3	116,3	112,1
Electronic equipment	23,9	19,7	18,5
Other ICT products	28,8	46,7	22,4
Share of imported ICT products in the value of all the products imported into the country, percentage.	2,7	3,3	2,4
Number of the ICT sector employees, thousands of people	18,5	19,0	19,3
Percentage of the ICT sector employees in relation to all employed in other sectors of the economy	1,3	1,4	1,3

Production (incl. services) in the ICT sector has tripled over the past 10 years, and so has the volume of added value created in the ICT sector. The share of imported ICT products in the value of all goods imported into the country over the past four years has downward dynamics. Investments, allocated by the ICT enterprises in fixed assets reached their 9-10 year peak in 2011-2012. In 2013, their volume reduced by one-third.

From year to year the import volumes of telecommunications, electronics and other equipment are

growing, and so is the number of employees involved in the field of ICT. This trend has had a positive impact on the amount of office equipment used in enterprises in the country. Positive dynamics were achieved throughout the whole country, where over the past 8-10 years, the number of computers in institutions, organizations and enterprises increased by 4.5 times. It also signifies the rapid growth of the non-oil sector, since it is the opening of new jobs in the regions as



part of state programs dictated by the state's social policy, that contributed to the development of already existing companies and the opening of new ones. In the meantime, the activity of enterprises requires new technologies and information possibilities, provided by the ICT. The provided table is rather extensive; however it enables us to determine the direction, in which the Azerbaijani ICT sector is developing. The table shows that the country is a major consumer of resources and possibilities of the ICT sector. But we are currently unable to produce certain types of ICT products, and in this case the development can go towards coordination with the developed countries, which is what we are working on.

Argentina, in particular, is interested in the new satellite projects in Azerbaijan. This country is ready to cooperate with us in the field of ICT: "The Argentine party intends to strengthen collaboration with Azerbaijan in the satellite industry, in the field of nuclear technology, biotechnological research and will work towards the creation of the Argentine-Azerbaijani joint ventures" [Argentina is interested in investing in the Azerbaijani information technologies // <http://1news.az/>].

The progress is great, as can be judged from the fact that investment in the development of Azerbaijani ICT sector in the 1st quarter of 2014 amounted to 29.5 million AZN [<http://interfax.az/>]. The launch of the first national telecommunications satellite Azerspace-1 ended with the signing of an agreement between the Azerkosmos JSC and the Georgian company Iveriasat, the DHT (Direct to home, live broadcast) operator in Georgia, which resulted in the start of broadcasting of 18 Georgian TV channels and 13 radio channels via the Azerspace-1 satellite. Our country has also signed a long-term agreement with the Malaysian company MEASAT on the use of orbital slot for the Azerspace-1 communications satellite. According to experts, "in the next 10 years the ICT sector of Azerbaijan should increase 4-4.5 times, its annual growth rate amounting to 15-20%" [The number of TV channels broadcasted by the Azerspace-1 satellite has reached 66 // <http://www.zerkalo.az/>]. All these processes indicate that the country's ICT sector has reached a new stage of development.

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