

## **Study of Development of Information and Communication Technology in Azerbaijan with Marketing Approach**

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### **Abstract**

*This paper is devoted to study of development and also spread of information and communication technology, including activity of mobile operators and telecommunications satellite in Azerbaijan. In the study work, particular emphasis is laid on conducting marketing in order to investigate the current condition of communication technology, and also the role of related subjects of entrepreneurship as key players in the market. With applying marketing, the advantages and also existing problems in this sector are revealed. The carried research allows determine the socioeconomic effect of communication technologies, as well as business strategy and the peculiarities of functioning of mobile operators with taking into consideration interests of customers in Azerbaijan.*

### **Keywords**

*Azerbaijan, marketing, mobile, operator, satellite.*

### **1. Introduction**

After the proclamation of the State independence of the Republic of Azerbaijan, progress has been reached in the communications sector, as well as in all areas. At present, the development of information and communication technologies, the launch of the first satellite of the country and other issues prove the development of this area. Information and technology communication (ICT) is a new area, and the first operators have been functioning in Baku since 1994.

Mobile communication as a significant integral part of ICT, is a new and prospective field establishing links with foreign countries in the international arena, takes an active part in improving the gross domestic product of the country's economy.

Concerning ICT, it should be noted that substantial and wide scientific research in this field has not been carried out in Azerbaijan. Only mobile operators, particularly in the field of ICT, have been investigated, and relevant scientific articles have been published in various directions.

The scientific novelty of the research is as follows:

- ❖ The mobile operators of Azerbaijan and their marketing network analysis have been carried out for the first time;
- ❖ Current mobile operators and the theoretical and methodological basis of their marketing network have been studied;
- ❖ Comparative evaluation of mobile operators is given;
- ❖ The analysis of network marketing through mobile operators and their future development have been studied.

The **main objective** of our research is to examine the place and role of this sector of the national economy, and effectiveness of the international community, investigate other foreign operators in the future, the extent to which the activity of the positive or negative impact on people's lives will be taken into account with the assumption that the innovations in this field complete solution of the problems identified to date.

To achieve this goal, the following **tasks** need to be solved:

- To define the place and role of Azerbaijan in the international arena;

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- To find out new and better ways to use mobile communications, which is considered a promising field of information and communications technologies, by applying the definition;
- To analyse the potential of the main companies in the ICT market of Azerbaijan and to consider the future of them;
- To substantiate enhancing the access of the population to increase interest in mobile operator marketing network.

**Practical significance of the study** is that proposals put forward in the mobile communication operators may further improve the results, effectively lead to the solution of problems in the future.

The **methods** used for analysing the information on the given topic will include retrospective analysis, synthesis, comparison of data, statistical analysis, deductive thinking, and so on. All the above-mentioned methods are used in their complexity in order to make comprehensive conclusions with the highest added value possible.

## 2. Literature

The data necessary for writing this thesis is taken from publicly available sources, namely bibliographic sources and online resources. Online sources are used for gathering the most up-to-date statistical and other data related to subjects of ICT market, including mobile operators in Azerbaijan and their involvement in marketing activities.

Informational base of the study is Ministry of Communications and Information Technologies of the Republic of Azerbaijan, State Statistical Committee of the Republic of Azerbaijan and the annual reports of the Ministry of Economic Development of Azerbaijan Republic, Azerbaijan National Academy of Sciences and the scientific research of Baku State University, statistical indicators of Azercell, Bakcell, Nar, and Turkcell mobile operators, as well as the academic analysis of the authors. The annual reports of the Ministry of Communications and Information Technologies of the Republic of Azerbaijan highlight this field at least in part; some data of the State Statistical Committee of the Republic of Azerbaijan have been published only in papers.

However, some research work in this field has been done by scholars and has been published in scientific articles.—Taking advantage of the nature of the theoretical basis of the concept of scientific works of scholars, we conducted a comprehensive inspection.

Theoretical and practical aspects of the ICT have founded its reflection in works of Stollings V. (2003), Neiman V. (2010), Davidoff G. (1984), Vishnevsky V., Lyakhov A., Portnoy S., Shakhnovich I. (2005), and other researchers in this field [1, 2, 3, 4]. Gahramanzadeh A. (2004) studied digital commutation networks [5]. Influence of information technologies on contemporary economic relations, including trade operations was studied by Belova L. and Strizhenko A., and also Feyzullabayli I. [6]. Bagirov D. (1999) studied role of informational supply in tax audit [7]. Efficient use of ICT in financial management was studied in works of Blank I., Sheremet A., and Karimov Kh. [8, 9, 10].

ICT as an essential area of the Azerbaijani economy was studied and analyzed from different aspects and methodological approach. Samadzadeh Z. (2004) analyzed general problems of development of ICT and the role of this branch in the economy of Azerbaijan during the second half of 20<sup>th</sup> century [11]. Huseynova A. (2013) studied innovational aspects of industrial activity, and existing relevant potential in Azerbaijan [12].

In the work of Hajizadeh E. (2012), emphasis is laid upon the role and place of e-government activity in development of technologies. The author indicates that this kind of activity will promote the improvement of many economic and social fields in Azerbaijan, and serve for the transformation to informational society in the country [13].

The influence of modern communication and technologies on development of society as well as the role of human factor in this process is studied by Aghazadeh Z. [14]. Development and spread of ICT has been studied also by Mammadova M. and Mammadzadeh F. (2013) who indicate the necessity of conceptually approaching in intellectual management of related labor market with purpose of efficiently use the available potential of specialists in communication technology [15]. Gahramanzadeh A. (2003) studied factors and conditions responsible for successful functioning in ICT sector of Azerbaijan [16]. Regional approach in ICT as well as territorial

organization of ICT found its reflection in works of Imrani Z. and Zeynalova K. (2014). They economically and geographically analyzed the spread of information technologies, and compared the economic regions of Azerbaijan for level of using these technologies [17].

### **3. Analysis of ICT Industry and Its Current Condition**

Up-to-date information and communication technologies create new opportunities for the development of the country, raising the intelligence of the population, and for engaging more actively in the process of integration into the world.

Efficient use of the existing potential and its development, organization of communication and information technologies, improvement from legal, technical, and HR point of view, establishment of information and communication technologies (ICT), and attraction of new investment in this sector, expansion of entrepreneurship, observance of the principles of free market and fair competition, implementation of social projects and other issues are of great importance.

The “National Strategy for Development of Information and Communication Technologies in the Republic of Azerbaijan (2003-2012)”, approved in 2003, was an important step in the development of information and communication technologies in the country. In this regard, World Summit on the Information Society, held on December 10-12, 2003 in Geneva, with the organization of the United Nations and the International Telecommunication Union, noted the importance of the basic principles of the state policy and National Action Program in the development of ICT.

According to the instructions of the President of the Republic of Azerbaijan, the “Regional Innovation Zone” project developed by the Ministry of Communications and Information Technologies in cooperation with Booz Allen Hamilton (a major US consulting company), will support the establishment of techno-parks for the support of innovative entrepreneurship, a regional market for the production and export of electronic equipment and software, a transitional information dimension between the East and the West to provide wide-ranging electronic services to all countries in the

region, and a university for the development of human resources [18].

The main five purposes of the activity of a Regional Innovation Zone can be summarized as follows:

**1. To foster SME / technology innovation:** Stimulate development of small and middle businesses, providing an innovative environment for designing and implementing information and other technologies for application and use in various sectors of the Azerbaijani economy, and potentially for the region;

**2. To enable HR development and look at the establishment of an IT university:** Provide the site, resources, and expertise to support the development of human resource capabilities, and related training and development activities that make part of the broader national initiative to develop a Regional Information Technology University;

**3. To assess perspectives of an International data centre:** Assess the feasibility of a profitable business that involves receipt, value added and return or redistribution (e.g., “transit”) of various forms of information, data and content services from around the world to the domestic and regional market;

**4. To define measures that help to attract new investments, esp. foreign direct investment:** Provide a hospitable, low-risk, innovative and collaborative environment for ICT and other domestic, regional and global technology organizations to invest and develop operations to share ideas, information, research and development, work processes and other knowledge-based activities to support the commercial needs and sustained economic, social and technological development of Azerbaijan and regional markets;

**5. To help Azerbaijan spur Exports activities:** Provide an environment that supports and enhances production and export of electronic equipment and software products and services that are produced in Azerbaijan and distributed to regional markets.

The main strategy of the economic policy of the Government of Azerbaijan is creating new opportunities for achieving development in non-oil sector, diversification of the economy and development of new industrial areas. As a leading sphere of non-oil sector, ICT has great importance.

At present, the country's e telecommunications and ICT sector is rapidly developing.

In 2012, the sector's share in GDP was 1.74%, while the non-oil's – in GDP was 3.7% [19]. It is worth noting that 65% of the sector's income falls to the share of mobile operators. The system of registration of IMEI-codes of mobile phones or mobile devices (SRMU) was established at the Information Centre of the Ministry of Communications and Information Technologies of Azerbaijan in accordance with the "Rules of registration of mobile devices" approved by Decree No. 212 of the Cabinet of Ministers of Azerbaijan Republic on December 28, 2011, and was held within the framework of the year of information and communication technologies.

After the functioning of the registration systems, an IMEI-code for each mobile device, imported to the territory of the republic for private use (via SIM-cards of mobile operators in Azerbaijan), must be registered within 30 days of its connection to the network. The system of registration of IMEI-codes does not apply to foreign citizens and tourists in Azerbaijan using foreign SIM-cards and roaming connection. In other words, they will continue to use the devices with foreign SIM operators without interference.

IMEI number can be determined by dialling \* # 06 # on mobile devices. By using the website [www.imei.az](http://www.imei.az), subscribers can determine the authenticity of their mobile devices via IMEI numbers, as well as get additional information.

The purpose of registration of mobile devices is to create conditions in which users can easily use mobile devices, and will be protected from devices of unknown origin, which do not meet the specifications (commonly referred to as "pirate"), prevent the imports of mobile devices, as well as the level of recognition of manufacturing companies.

At the same time, the use of mobile devices in the network that have lost the registration system will be impossible. Now, this system is used in Turkey, the U.S. and India. In Ukraine, attempts have been made as well to introduce a similar system, but they were not successfully completed. In European countries, EU blacklist is held to exchange information about the theft of mobile devices. Among information technologies, great importance is played in particular

by mobile operators. The network marketing of the 3 mobile operators in Azerbaijan, the country's position in the region, international recognition, trade relations with foreign countries, the role of mobile communications in the country's economy, population and employment levels have been analyzed. Mobile operators in Azerbaijan reduce prices of certain companies and offer new services to the population. However, despite the work done in Azerbaijan, the price of the mobile communication is more expensive in comparison to other post-Soviet states.

In order to determine the condition of ICT as well as the role of legal bodies as subjects of entrepreneurship in ICT market of Azerbaijan, this study is implemented with using approach of marketing.

## **4. Marketing Method**

### **4.1. The Modern Explanation of Marketing**

As is known, the term "marketing" in its preliminary meaning expresses that market economy is a category of the concept of management. However, there are certain differences in its classical and modern meanings. The modern meaning was formed gradually. First of all, it appeared for the first time in the U.S. under the title "product marketing". For the second time in the first period, it was overcome by the use of goods and services.

Marketing is the management function of supply and demand, investigating the relations of production is necessary to clarify the relationship arising from production, in order to ensure sales of the finished product. Marketing is destined to create favourable conditions for the sale of a product, its quality, range and volume of production, in order to adapt to consumer demand analysis and forecast market conditions. The process of marketing management consists of analysis of market opportunities, target market selection, implementation of marketing activities. The management of marketing in the field of marketing research and supervision of the implementation of plans are drawn up. This includes planning, production and sales, price formation, advertisement, sale, implementation, and so on.

The concept of market management, sales and trading activities of the organization and management of production systems are given. Development of

product, production and sale are the main objectives of the system - the market and the real needs and requirements of customers and increased revenue as a result of accurate and comprehensive study should be directed. Marketing forms such type of products, production and sale that show great interest in these products by customers, and for which there is a real demand. Only at a certain stage of development and production, the importance of marketing was understood. Depending on each country's own development, marketing activities are required for an effective approach. If only those economic activities of the country's institutions to implement marketing activities to increase the efficiency of their production, sales and trading activities can be achieved [20].

The main tasks of marketing include the following: study of market, the structure and dynamics of demand, consumer taste and wishes to collect information about the sound, the current and future needs of the production of goods that are relevant to various fairs, exhibitions, advertising, discounts and price policy and service provision, guarantees, the creation of favourable conditions for the product, etc.

#### **4.2. Principles of Marketing**

The main motto of consumers on the basis of the principles of marketing is as follows: the market, the buyer is required to produce the product. Therefore, the human needs of marketing, needs, requirements of the organization. Here is the essence of marketing. To put it shortly, the essence of marketing can be expressed as follows: unconditionally, the buyer prior to the sale, which must be produced in the market with the "uncoordinated" product of the force is not necessary to stitch. It is based on the idea of the needs and requirements of potential users. Produce what you can sell, instead of having to try to sell what you can make, Love the customer, not product". It is the nature of the basic principles of marketing. These principles are as follows:

1. Production and sales activities to achieve the final results of the orientation of the target market of the acquisition.
2. Research, production and marketing activities on sales opportunities in key areas of concentration.
3. Direction to achieve the long-term results of corporate marketing activities;

4. Tactics of marketing and the unity of strategy and application interaction.

#### **4.3 Market Segmentation and Targeting**

Speaking about management of marketing, to achieve the goal in establishment of exchange profitable for customers, strengthening and analysis of maintenance measures, planning, implementation and control is understood.

Literally just half a century ago, the creation of something new brought to a revolution, and gave super-profits to inventors. Now, the main thing is not the creation, but rather skilful and effective promotion of a new product. There have been cases in history when products which in fact were not unique or supernova became bestsellers for many years thanks to a competent marketing strategy. When developing a new product, it is necessary to know precisely for what consumer audience it was designed. It is necessary to know almost everything about your average statistical potential customer: from age and sex, to personal hobbies. It is these facts that make it possible to develop the product down to the smallest detail, and to make an effective advertising campaign. For this purpose, there is such a concept as market segmentation, which is a division of consumers into groups [21].

Target marketing requires running three main events:

- market segmentation: market division into distinct groups of buyers, each of which may require particular products or marketing complexes. Different market segmentation methods are used;
- selection of target market segments: evaluation and selection of one or several market segments for accessing them with own products;
- product positioning on the market – provision of the product's competitive position on the market, and market complex development.

In order to carry out successful market segmentation, it is reasonable to apply five principles: differences between segments, similarities between consumers, large segment volume, consumer parameters measurability, consumer accessibility.

1. The principle of difference between segments means that segmentation should lead to different consumer groups. Otherwise, segmentation will implicitly be substituted by marketing.
2. The principle of similarity between consumers in a segment assumes homogeneity of potential consumers in terms of buyer attitude toward a particular product. Similarity between consumers is needed in order to develop an appropriate marketing plan for the entire target segment.
3. The requirement of a large segment volume means that target segments should be large enough to ensure the company's sales, and cover its expenses. When evaluating segment volume, the nature of the product sold and the capacity of the potential market should be taken into account. Thus, the number of buyers in a single segment on the consumer market may be dozens thousands, while a large segment on the industrial market may count less than a hundred potential customers (for instance, for cell or satellite communication systems, for consumers of power plant products, etc.)
4. Measurability of consumer parameters is necessary for aimed field marketing studies, thanks to which needs of potential buyers may be identified, as well as for studying the target market's response to the company's marketing activities. This principle is extremely important, as "blind" product distribution, with no feedback from the customers, leads to diffusion of the seller's funds, human and intellectual resources.
5. The principle of consumer accessibility stands for the need in communication channels between the seller and potential customers. Such communication channels may be newspapers, magazines, radio, television, exterior advertising means, etc. Consumer accessibility is needed for arranging promotional events, or for informing potential customers of a particular product: its features, value, main advantages, possible sale-offs, etc.

Market segmentation requires detailed knowledge regarding the customers' requirements to the product, and buyer motivation parameters of the consumers themselves [22]. Segmentation may be of several types:

- macrosegmentation, which classifies markets by regions, countries, their industrialization level, etc.;
- microsegmentation, which identifies customer groups within a single country or region based on more detailed criteria;
- inward segmentation, when the marketing specialist proceeds to segmentation from a broad group of customers, and then deepens, narrows it (for instance, watches → watches for men → watches for businessmen with a high level of income);
- broadwise segmentation, when the marketing specialist proceeds to segmentation from a narrow group of consumers, and then broadens it (for instance, balls for professional athletes → balls for professional athletes and amateurs → balls for young people);
- preliminary segmentation, which defines the start of marketing research and covers a large number of possible market segments aimed for research;
- final segmentation, which defines the final stage of market research, and is formed based on market conditions and capacities of the company itself. It is connected with the identification of the most favourable market segments, for which the company will in the future develop its market strategy and program, and it generally comprises a limited number of market segments. Market segmentation and analysis of separate market segments are carried out for the purpose of subsequent identification of target markets which would suit most the customers' requests and the company's capacities, as well as those most favourable for its activities.

#### **4.4. Target Market Segment Selection**

Market segmentation opens up capacities of different market segments where the seller is going to act. Then, the company has to decide:

- how many segments should be covered;
- how to identify the most profitable segments.

There are three market coverage options:

- 1) undifferentiated marketing;
- 2) differentiated marketing;
- 3) concentrated marketing.

Undifferentiated marketing is a situation when the company opts to neglect differences in segments, and contacts the entire market at once with the same offer. In this case, it concentrates efforts not on differences between the customers' needs, but rather on common things in such needs. The company develops a product and marketing program which would seem attractive to the largest possible audience. The company relies upon methods of mass distribution and mass advertising. It strives to address an image of excellence in the minds of people. In addition, undifferentiated marketing is cost-efficient. Costs for product manufacturing, maintenance of its reserves, and transportation are not high. Costs for advertising are also maintained at a low level at undifferentiated marketing. Lack of market segments and planning in division into such segments in marketing research favours decreased costs for marketing research and product manufacturing management.

**Differentiated marketing.** In this case, the company opts to act on several market segments, and provides a separate offer for each of them. The company expects that, thanks to strengthening its positions in several market segments, it will be able to identify the company with this product category in the customer's mind. In addition, it expects growth in repeated purchases, as it is the company's product to correspond to the customers' desire, and not vice versa.

**Concentrated marketing.** Many companies see for themselves a third marketing opportunity, which is especially attractive for organizations with limited resources. Instead of focusing efforts on a small share of a large market, the company focuses them on a large share of one or several submarkets. Thanks to concentrated marketing, the company ensures for itself a stable market position in segment servicing, as it knows better than the others such segments' needs, and has certain reputation. Moreover, thanks to production specialization, distribution and stimulation measures, the company gets economy in many fields of its activities.

## 5. Results

The level of demand for the marketing department's responsibility should influence the timing and nature of the problems facing the organization in helping achieve the goals. Simply defined, marketing management is demand management.

The need for marketing is a necessity only on a certain stage of development, production and marketing. Depending on the characteristics of each country, an effective approach to marketing activities is required. In this regard, mobile operators in Azerbaijan should be able to identify market opportunities. None of the operators should be permanently confident in its product and market. It has to look for new markets, customers should be provided with new offers. Only in this case, we can talk about the prospects of the future of mobile operators.

The concept of marketing in the mobile operator's view of the organization reflects sales activity. The most advanced is the concept of production and marketing of high-quality products.

ICT, which is the catalyst of industrialization and scientific social-economic growth of the global economy, is the sector with the strongest and most dynamic growth and development potential following the hydrocarbon industry. Establishment of the Regional Innovation Zone for information and communication technologies and electronic production will provide the basis for sustainable development of the ICT sector in Azerbaijan, create alternative sources of income, increase attractiveness of the local markets for foreign investors, and will ensure sustainable development of the non-oil sector. During the recent years, a number of measures have been taken in Azerbaijan to accelerate the development of information and communication technologies sector, coordinate to the international agreements supported by the Republic of Azerbaijan for improvement of the regulatory and legal basis of this sector, liberalization of the telecommunications services market and development of the private sector. In this regard, the Laws "On e-signature and e-document" and "On Postal Service" were adopted in 2004, the Laws "On telecommunications" and "On e-commerce" – adopted in 2005, and the "State Program on development of communication and information technologies in Azerbaijan Republic in

2005-2008” (Electronic Azerbaijan) was approved in October 21, 2005. Besides, the Republic of Azerbaijan launched the first telecommunications satellite to the orbit in 2013 and declared 2013 the Year of information and communications technologies (ICT) in the country.

### **5.1. Information Society**

One of the key features of the information society can be attributed to the followings:

- ❖ Creation of the global information environment;
- ❖ Use of ICT, creation of new forms of social and economic activities;
- ❖ Improvement of the educational system on the international, national and regional levels, expansion of information exchange systems to increase the level of professional and general culture;
- ❖ Democratic development, which is important to get information from citizens and social institutions, as well as to disseminate and use it to create an environment that promotes freedoms.

Creation and distribution of the global information environment is carried out by mobile operators.

The level of application of ICT is one of the indicators of the country's intellectual and scientific potential, transparency and the development of democracy in the public administration. The increasing role of e-commerce in the world market and the future competitiveness of the counties create ICT dependency.

Global experience shows that the use of ICT in the development of a wide range of services and technologies that address the socio-economic situation and the existing problems is a consistent means for poverty reduction.

The country's overall e-readiness, as well as the existing telecommunications infrastructure, hardware and software, information resources and services, the legal and normative framework shows that the formation of an information society in the country to speed up the process is as follows:

- ❖ High level of literacy and education of the population;

- ❖ National private telecommunications operators and their development;
- ❖ National projects in the field of information and communication technologies have a wide range of experience;
- ❖ Existence of favourable conditions for the country's economic activities and investment;
- ❖ Mobile phone network covering the entire republic and the formation of permanent development;
- ❖ The wired phone network modernization and expansion, as well as digital communication channels, etc.

The political, economic and technological developments in the world show that the future prospects of countries are characterized by the level of their ICT development. In this development, a special place has to be given to mobile network operators [23].

### **5.2. Azerbaijan's First Telecommunications Satellite**

In modern conditions, changes are made in the legislation, as well as laws, decrees and State Programmes are adopted on the fields of information, informatization and informational protection, in order to achieve the complex solution of problems of social, economic, scientific and technical development of a country and to increase the defence power.

The level of application of ICT for socio-economic development of each country, as well as its intellectual and scientific potential, transparency and efficiency in public administration, as well as the development of society are one of the main indicators. The wide application of ICT in the overall development of the country, as well as the field of information is of particular importance in terms of national security.

The location of the Republic of Azerbaijan in the favourable geo-economic, geographical site, as well as on the intersection of information highways between the European and Asian continents, elimination of dependence of information exchange on foreign countries, establishment and launch of telecommunications satellites, which are among the essential components of economic and information security, to the orbit are of great importance.



"Azerspace" Open Joint-Stock Company was established on May 3, 2010. On February 8, 2013, the first satellite of the Republic of Azerbaijan "Azerspace-1" was launched to the orbit, which cost U.S. \$ 230 million.

"Arianespace" Company, which holds more than 50% of the global market for satellite launches and has realized the launch of total 242 satellite with various carrier rockets since the start to operate in 1980, considers the launch of "Azerspace-1" satellite as the 54th consecutive successful launch with "Ariane-5" carrier rocket since 2002. "Azerspace-1" satellite has been assembled based on STAR-2 satellite platform, produced by "Orbital Sciences" Corporation and at present, successfully operating in over 22 active satellites.

"Azerspace-1" satellite, equipped with 36 active transponders on useful load and weighing approximately 3.2 tons, will be located at 46 degrees east longitude geostationary orbit and will cover Europe, Africa, Central Asia, the Caucasus and the Middle East region. "Azerspace-1" satellite, to have at least 15 years of service life in orbit, is considered to provide TV broadcasting and telecommunications services, as well as to ensure high quality and stable communication platforms meeting the requirements of corporate and governmental customers.

Satellite resources will be used to meet the needs of 20%, and the remaining 80% will be exported to the world markets. Satellite resources will be provided for the sale of more than 40% of signed contracts. "Azerspace-1" satellite technology will connect to a wide range of design possibilities, and will cover a third of the world, it will help millions of people easily use modern information and communication services. The first satellite connecting more than 50 countries will play an important economic role.

Along being an important step towards the economic diversity, ensuring the independence and security of information, development of our space industry and integration into the international space, the launch of Azerbaijan's first satellite is commercial and profitable project as well. Thus, "Azerspace-1" satellite will provide high-quality television and radio broadcasting, including fast IP service within the territory of Azerbaijan in the near future.

Launching the first Azerbaijani satellite into orbit will allow the introduction of digital broadcasting organization in the country, the creation of a centralized automated radio monitoring network, e-government, will improve the integration of public institutions, the increased use of electronic services, scientific research and practical application of nano-technologies, telecommunications and postal modernization of infrastructure, broadband services to all regions of the country and to take other appropriate measures [24].

In order to expand satellite services and come out with a better organization of the Azerbaijani satellite into geostationary orbit is of particular importance. To this end, coming out with telecommunications satellite in orbit of C-and Ku-band frequency range covers most of Asia and all Europe. The satellite realizes phone communications, television and radio broadcasting, high-speed internet access, and multimedia services, and contributes to the establishment of corporate VSAT networks. A low-orbit satellite is planned to be launched in 2015, while "Azerspace-2" satellite – in 2016.

I would like to mention the services offered by the "Azerspace-1" telecommunications satellite can have a positive effect on the tariff policy. Mobile operators use the satellite to link up their antennas where it is impossible to transmit cable. At the present time, this practice is spread as well in Central Asia and in Africa and the Middle East.

Governmental agencies and business organizations contact with one another using appropriate mobile devices via satellite by means of VISAT network. Today, mobile, internet and other services can be organized via satellite and it does require huge expenses. Simply, customers have to set up a scheme for the Internet; after compiling it is very easy to establish it. Besides, there are a lot of producers, and technologies are rational from price and complexity point of view. The global experience shows that major organizations and companies use satellite connection to build a continuous data connection with their regional offices. These offices can be transferred from one country to another country and from one city to another city at any time. If the connection is made through the cable, it doesn't limit the opportunities to connect to a new office; the connection over a satellite enables faster connection.

The main advantages of satellite "Azerspace-1" are the followings:

- Diversification of the economy and development of new industrial areas;
- Elimination of dependence of data exchange on foreign countries and provision of information security;
- Development of human resources and intellectual potential in new economic sectors, implementation of latest knowledge-intensive projects;
- Formation of an innovation-driven economy;
- Enhancement of Azerbaijan's regional and international prestige;
- Turning Azerbaijan into a regional centre for ICT. Providing telecommunication needs of the economy and development of telecommunications infrastructure;
- Provision of broadcasting and communications services, availability of reliable communication platforms meeting the requirements of public and corporate clients;
- Provision of the country's hard-to-reach areas with Internet connection, e-services, education, health and other services;
- Protection of the country from possible information blockade and strengthening Azerbaijan's position in the information war;
- Direction of financial flows for satellite communications services to the economy of Azerbaijan, and sale of satellite capacity abroad [25].

Generally, satellite enables reduction in the price in addition to improving the quality of communications services in the world practice. Thus, while benefiting from the satellite services, mobile operators can cut down expenses. Companies, based on thorough analysis in this field, take into account the reduction in technical terms to some extent due to saving and make decisions according to marketing strategy.

Based on the experience, sometimes satellite is set on the first place, cable is as a backup resource, sometimes, on the contrary, the cable is set on the first place but satellite is kept as a spare. In any case, the satellite has major advantages and satellite

services are safe and permanent. Amplification efforts to develop the export potential of ICT in Azerbaijan are one of the major parts of the plan for the future. The aim in this direction is to become a major exporter of information services in the region. Until 2020, the government plans to spend about \$ 3.6 billion on the implementation of ICT projects in Azerbaijan, and it is expected to increase income to 9.3 billion in this area [26].

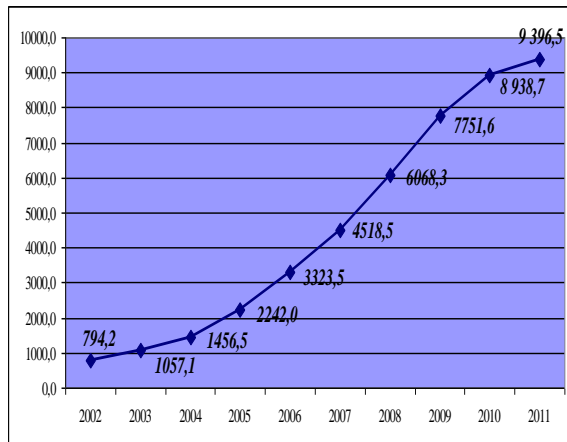
### **5.3. Operators of Mobile Network in Azerbaijan and Its Comparative Analysis**

Playing an important role in the socio-economic life of the Republic of Azerbaijan, the level of development in the field of information and communication is more clearly visible as compared to other sectors of the economy. After the oil sector in the country, which is considered a priority area of information and communication technologies, the country's socio-economic life has been rapidly developing in recent years.

In Azerbaijan, mobile communications is the fastest developing sector of the economy. According to the level of mobile penetration among the population, our country holds one of the leading positions among the states of the former USSR. According to UN International Telecommunication Union's information, the number of mobile subscribers in the world is 6 billion and 800 million. According to experts, in developed countries, subscribers of mobile operators among the population made up 93-95% in 2012. In Azerbaijan, this indicator is higher. Thus, according to the information of January 1, 2011, the number of subscribers of mobile operators in Azerbaijan made up 9 million 396 thousand and 500 hundred people.

As it can be seen from the Figure 1 below, the number of mobile phone subscribers in Azerbaijan in 2011 increased about 11-12 times as compared with 2002. The growth trend has lately continued to grow every year. This indicator is directly linked to the country's mobile phone operators' business activities. When analysing the activities of phone operators in the Republic of Azerbaijan, it is worth noting that mobile communication is very popular in the country, and the overall number of mobile phone subscribers significantly exceeds the number of fixed-line phone subscribers. This is mainly due to the wide coverage of the country's territory with mobile connection networks. At the same time, fixed-line

communication in the country is relatively expensive, due to what the population of Azerbaijan prefers using mobile phones for both domestic and international calls.



**Figure 1: Number of mobile phone subscribers in Azerbaijan, 1,000 subscribers**

Source: The State Statistical Committee of the Republic of Azerbaijan. *Telecommunication and post*. [online]. [cit. 2014-05-22]. Available from: <http://www.stat.gov.az/source/communication/>

Approximately 80-90% of the population uses mobile phones. The masses of mobile intensifying the competition between mobile operators, applies them to a more modern technology, as well as paving the way for the rise of mass mobile networks. There are 3 top mobile operators in the Republic of Azerbaijan: "Bakcell LTD", "Azercell" and "Azerfon MMC".

**Bakcell LTD** was founded in 1994, and it is the first company to provide mobile services in the country. In order to provide its subscribers with the most advanced communications services, the Company made effective investment in the development of its network in 2012; at present, Bakcell network covers 95% of the population and 82% of the country's territory. To ensure high-speed Internet services, the entire network is based on EDGE technology. Actually, it has more than 2,000 base stations and provides high-quality communication in remote areas. At present, the number of active subscribers of Bakcell is 2.5 million people [27].

At present the share of Bakcell is more than 35% on mobile market. Thus, the company has the largest

network of base stations of up to 2,500 units on the market of Azerbaijan. These stations are able to serve both 2G and 3G standards. As of today, Bakcell's marketing strategy on the corporate segment includes several key directions followed by the company's management with an aim to become the largest mobile operator providing telecommunications and mobile communication services to Azerbaijani firms and corporations. These key directions are as follows:

- Development and implementation of products for reaching the goals of active base, income and benefits to the corporate market (under the sub-brand Gold);
- Development of the management-to-management segment;
- Development and implementation of segmented offers for the corporate customer base of Gold;
- Development and implementation of specific advertising campaigns for the corporate market;
- Analysis of the competitors' activities and development of an active strategy against competition.

**Azercell Telekom** was founded on January 19, 1996. The first founders of the company in Turkey are "Turkcell Communication Services, Inc.» and the Ministry of Communications of the Republic of Azerbaijan. The company started its operations on December 15, 1996, post-paid system subscribers (subscription) based on the mobile services offered. In 1998, the pre-payment system was introduced. Azercell is the largest mobile operator covering over 80% of the Azerbaijani market of telecommunications and mobile communication services. Thanks to the large geographical coverage of Azerbaijan's territory and the wide number of customers using the services of Azercell, the company provides services on all customer segments without focusing on any top-priority segments.

The company's marketing differentiation on the corporate customer segment is considerably smaller than on the segment of individual customers. There is only one preferential corporate tariff provided to corporate customers – "Corporate Region". This program can be used by companies having their network of offices and branches within a single administrative region of Azerbaijan, in which case they get significant discounts on all calls both within

the Azercell network and to other operators' subscribers. Also, the company provides its corporate customers with an opportunity to purchase cell phones directly from it at reduced prices, which allows significantly sparing the funds of those companies where there is a need to provide many employees with mobile phone communication connection.

On March 21, 2007, Azerfon started working with the brand "**Nar Mobile**", and within a short time, it was a leading company in the field of telecommunications and mobile communications.

The network covers 80% of Azerbaijan. At present, it has 2 million subscribers. In order to provide convenience for customers in Azerbaijan, Azercell has begun to provide services based on 3G (third-generation) technology (video call, mobile TV, etc.). Thanks to the wide differentiation of its products for young people, the company reaches a great marketing effect on the Azerbaijani telecommunications and mobile communication market. Young customers are mainly attracted by the fact that they get an opportunity to make cheap calls to their friends with a wide choice of the time or communication method most suitable for them. The users of smartphones are mostly young people, such marketing orientation mostly focuses on them as target customers. On the corporate customer segment, Nar Mobile's marketing activities are far less intensive. Thus, the company doesn't provide any tariff differentiation to its corporate customers, and its marketing campaigns and promo events are mainly limited to the possibility of sending newsletters, and reduced roaming prices for companies mainly focusing on foreign cooperation in their activities. Due to this, the company's position in the corporate segment of the Azerbaijani telecommunications and mobile communication market remains rather weak, and Nar Mobile's activities on this segment are not a priority for the corporation.

## **6. Conclusion**

According to the Azerbaijani mobile operators and their comparative analysis, it has become clear to us that each of the 3 mobile operators in the country operating in the domestic and international calls and SMS service is much more expensive compared to other countries. The marketing activities run by Bakcell, Azercell and Nar Mobile significantly differ,

which is deeply rooted in each company's own vision of the Azerbaijani telecommunications and mobile communication market, and the customer segments each of them targets as a key priority in its operational activities.

For Azercell, there is no distinct segregation of different customers in terms of their priority or attractiveness for the company. The mobile operator holds the greatest market share in Azerbaijan, and has the required financial and human resources in order to be able to target different segments of customers at once with differently vectored marketing strategies, campaigns and events.

For instance, Azercell pursues its goals at once on the segments of individual and corporate customers, and allocates significant amounts of funds to finance all such marketing campaigns. The company's offers to the corporate segment are not well differentiated though, and here, the mobile operator rather relies upon the quality of its services offered on the market, and the scope of geographical coverage in Azerbaijan. At the same time, the company's marketing campaigns run on the individual customer segment are well differentiated: Azercell not only offers different tariff programs and individual packages to its customers, but also runs various promo events for the purpose of attracting new clients and raising the interest and loyalty of the old ones.

In contrast to Azercell, Bakcell to a large extent focuses on the corporate segment of the Azerbaijani telecommunications and mobile communication market, and sees corporate customers as its top-priority target customers. Due to this, the company's marketing efforts mainly focus on the corporate customer segment. The company offers different tariff plans and product packages to corporate customers, at the same time constantly organizing various promotional events and campaigns in order to further penetrate the corporate customer segment. However, due to such focus on the target market, the company doesn't run any massive marketing campaigns or events aimed at the individual customer segment, which is rather regarded as secondary by the corporate management of Bakcell. Still, the company's promotional activities in this field have lately been quite successful, even despite their relatively small scale.

Nar Mobile differs from the two previous companies due to the fact that it targets the individual customer segment of the Azerbaijani telecommunications and mobile communication market, largely focusing on young people. The company's marketing activities on the corporate segment are the weakest as compared with Azercell and Bakcell, and are in fact limited to basic packages offered to all companies on the same terms and conditions. On the individual customer segment of the market, the company covers the entire range of possible audience, but its products are especially well differentiated for young people.

In contrast to Azercell and Bakcell, Nar Mobile stresses on the need to provide young people with permanent online connectivity and the ability to reach each other at the lowest price. Thanks to this, the company has stable positions in its target market niche, but considerably loses to Azercell and Bakcell in terms of the aggregate share on the Azerbaijani telecommunications and mobile communication market.

Finally, as we think, in the near future, all the three operators of mobile communication in Azerbaijan should focus on the implementation of new mobile communication opportunities, such as the 4G connectivity or satellite communication which currently remain inaccessible for most people inside the country. The rapid development of new technologies in telecommunications and mobile communication obviously proves that those segments may become crucial already in the near future.

## References

- [1] National Information and Communication Technologies Strategy for the Development of the Republic of Azerbaijan (2003 -2012). Order No. 1146 dated to February 17, 2003 of the President of Republic of Azerbaijan.
- [2] "State Program on development of communication and information technologies in Azerbaijan Republic in 2005-2008" (Electronic Azerbaijan). Order No. 1055 dated to October 21, 2005 of the President of Republic of Azerbaijan.
- [3] Law of the Republic of Azerbaijan on Information, Informatization and Protection of Information. Order No. 460-IQ dated to April 3, 1998 of the President of Republic of Azerbaijan.
- [4] Mammadova M.G., Mammadzadeh F.P. Conceptual approaches to intellectual management of labor market of IT-specialists. Journal of Technological problems. No. 8, 2013, pp. 33-44.
- [5] Belova L.G., Strizhenko A.A. Informational society: transformation of economic relations in world economy. Barnaul. 2007.
- [6] Hajizadeh E.M. The role and importance of conception of e-government in development of technologies of informational society. Tax Journal of Azerbaijan. Baku. No. 5, 2012, pp. 117-128.
- [7] Aghazadeh Z. The new anthropological reality of the global information society. Transactions of Azerbaijan National Academy of Sciences. International scientific and theoretical journal. No. 2 (17), 2011, pp. 56-61.
- [8] Samadzadeh Z.A. The stages of long way: Azerbaijani economy, its reality and perspectives during half of century. Baku: Nurlar. 2004.
- [9] Huseynova A.D. Analysis of innovation potential in Azerbaijan. Baku: Elm&Tahsil. 2013.
- [10] Imrani Z.T., Zeynalova K.Z. Economic and geographical peculiarities of territorial organization of economy in Azerbaijan. Baku: Nafta-Press. 2014.
- [11] Gahramanzadeh A.H. Digital commutation systems and networks. Baku: Elm. 2004.
- [12] Stollings V. Wireless lines of communication and network. Moscow: Tekhnosfera. 2005.
- [13] Vishnevsky V.M., Lyakhov A.I., Portnoy S.L., Shakhnovich I.V. Broadband wireless network information. Moscow: Tekhnosfera. 2005.
- [14] Neiman V.I. The decisive stage of the information revolution. / Elektrosvyaz, No. 1. Moscow. 2010.
- [15] Davidoff G.B. Information and network of communication. Moscow: Nauka. 1984.
- [16] Kahramanzadeh A.G. Basics of development of infocommunication of Azerbaijan. 2003. Baku: Elm.
- [17] Bagirov, D.A. Tax Audit. Baku: Maarif. 1999.
- [18] Proceedings of Azerbaijan National Academy of Science, Institute of Information Technology. [online]. [cit. 2014-05-20]. Available: <[http://www.ict.az/az/index.php?option=com\\_content&task=view&id=2947&Itemid=122](http://www.ict.az/az/index.php?option=com_content&task=view&id=2947&Itemid=122)>.
- [19] The Journal for Business. Information and Communication Technologies in Azerbaijan and Importance of Their Use. p. 122. [online]. [cit. 2014-05-20]. Available : from:<<http://thejournalofbusiness.org/index.php/site/article/viewFile/373/325>>.
- [20] Karimov, X.Z. Financial Management Methods. Baku: Elm. 2005.
- [21] Blank, I.A.. Financial Management. Kiev: Elga Nika-Center. 2007.
- [22] Sheremet, A.D.. Finance of Enterprises: Management and Analysis. Moscow: Infra-M. 2007.

- [23] The open knowledge society: a computer science and information systems manifesto: First World Summit, WSKS 2008, Athens, Greece, 2008, September 24-26. proceedings. 1st ed. New York, NY: Springer-Verlag Berlin Heidelberg, 2008, p. cm. ISBN 35-408-7782-7.
- [24] Azeriobserver. Azeris Contribute to the Conquest of Space. [online]. [cit. 2014-05-20]. Available from: <http://azeriobserver.az/2014/01/25/azeris-contribute-to-the-conquest-of-space/>.
- [25] Ministry of Communications and High Technologies of Azerbaijan. First national telecommunications satellite. [online]. [cit. 2014-05-22]. Available from: <http://www.mincom.gov.az/projects/first-national-telecommunications-satellite/>.
- [26] The State Statistical Committee of the Republic of Azerbaijan. Telecommunication and post. [online]. [cit. 2014-05-22]. Available from: <http://www.stat.gov.az/source/communication/>.
- [27] Bakcell. History. [online]. [cit. 2014-05-28]. Available from: <http://www.bakcell.com/en/company-history/>.



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