

Organization of innovative activities in telecommunications enterprises

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Article History: Received: 10 January 2021; Revised: 12 February 2021; Accepted: 27 March 2021; Published online: 20 April 2021

Abstract— In the context of the global pandemic, the rapid penetration of information technology in all spheres of economic activity, increasing demand for online sales of services and goods, leads to the important role of telecommunications companies in the national economy. The main role of the telecommunications sector is reflected in the essence of the impact of the national economy on the process of transition to innovative development. This, in turn, requires the development of innovative activities of telecommunications enterprises that meet the requirements of the current stage of development, taking into account the impact of internal and external factors that threaten the innovative development of the country. In general, the innovation process consists of obtaining and commercializing inventions, new technologies, types of products and services, production, financial, administrative or other decisions and other results of intellectual activity.

keywords— technology, commerce, social systems, economic development, efficiency, innovation process

1. Introduction

In the context of the global pandemic, the rapid penetration of information technology in all spheres of economic activity, increasing demand for online sales of services and goods, leads to the important role of telecommunications companies in the national economy.

The main role of the telecommunications sector is reflected in the essence of the impact of the national economy on the process of transition to innovative development. This, in turn, requires the development of innovative activities of telecommunications enterprises that meet the requirements of the current stage of development, taking into account the impact of internal and external factors that threaten the innovative development of the country.

In general, the innovation process consists of obtaining and commercializing inventions, new technologies, types of products and services, production, financial, administrative or other decisions and other results of intellectual activity.

Innovation is a radical and changing change in the products, processes and strategy of an enterprise. The main purpose of innovation is the efficiency, economy, quality of business, customer satisfaction. In other words, the concept of innovation can be equated with the concept of entrepreneurship. That is, creating new opportunities to improve business performance is an innovation.

A distinctive feature of innovation is the application of ideas in practice.

Innovation is viewed from different perspectives: technology, commerce, social systems, economic development, and policy formulation.

Before studying the content and specifics of the development of innovative activities of enterprises in the field of telecommunications, it is important to clarify the basic concepts such as "innovation" and "innovative activity":

The concept of "innovation" as an economic category was first proposed in the early 20th century. J. Shumpeter, in his Theory of Economic Development, considered various combinations in the development of an organization (or innovation), as well as gave the first complete description of the content of the innovation process.

At the present stage, there is no consensus in defining the content of this concept in the works of researchers, which is due to the use of different methodologies to understand the essence of this multidimensional concept. The main approaches to the interpretation of the concept of "innovation" allow to consider it from two positions:

- as a process (creation, distribution and application of innovations) that allows you to optimize or increase the efficiency of this or that activity;

- as a result of the process of investing in the development and acquisition of new knowledge.

There are many goals for the development and implementation of innovations - discrete (in solving any specific, time-limited tasks), systematic (to ensure long-term, systematic implementation of innovations in the activities of economic entities).

In this context, it is expedient to move on to the analysis and explanation of another concept - "development of innovative activity".

The basic concept of the term under consideration at this stage - "development" - can have different definitions:

- as a process involving the accumulation of qualitative changes;
- as a process and result of appropriate management activities in a changing economic environment;
- as a means of efficient allocation of resources; - as a process of renewal of the organization, etc.

Analysis of works on the development of innovative activities of telecommunications enterprises allows us to conclude that the term "development of innovative activities" is used in connection with the following aspects of the activities of economic entities:

- when taking measures to increase the competitiveness of the organization;
- to make full use of the innovative potential of the organization on the basis of available resources for the implementation of innovative activities;
- increasing the efficiency of the innovation process, which is determined by the speed of movement towards the innovation cycle;
- as a condition and opportunity to introduce new techniques and technologies into economic circulation, and the driving force of innovative development is the level of novelty of innovations, etc.

In recent years, especially in the context of the pandemic, Uzbekistan has taken and continues to implement a number of legislative, organizational, institutional, economic and financial measures for the full transition of the national economy and its strategically important enterprises to the model of innovative development.

The innovation process includes the following features:

- 1) means the implementation of scientific research, scientific and technical, in fact, innovative, production activities and marketing;
- 2) it can be understood as time stages of the life cycle of innovation from the emergence of the idea to its development and dissemination;
- 3) From a financial point of view, this can be seen as a process of raising funds and capital for the development and distribution of a new type of product or service. In this case, the investment project is considered as an innovative project, which is considered as a special case.

The situation in the telecommunications market of Uzbekistan allows us to confirm that the country's telecommunications sector has entered a new stage of development. In recent years, the communications market has grown and changed significantly. It has been centralized with a new distribution of income among the participants. The largest operator companies are successfully expanding the boundaries of their activities.

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Uzbekistan's telecommunications networks are experiencing a more active stage of development and modernization. Timely and full modernization of telecommunications networks is a necessary condition for the successful development of our economy. Each year of the life of Uzbektelecom JSC is a series of important events and milestones in the development of the industry.

In particular, in 2017, the Company built about 12,100 km of fiber-optic communication lines (OTAL) through the installation of channel-forming equipment, including the development of networks on FTTB technology.

The company has installed and integrated 10,080 multistandard base stations. For the development of information and communication infrastructure in rural areas, 533 base stations with a total capacity of 52,960 KPU ports have been installed.

2,102.2 km of fiber-optic communication lines were laid to facilities located in rural areas (including sparsely populated and inaccessible areas), as well as social infrastructure facilities, including medical, local police stations.

In accordance with the Decree of the President of the Republic of Uzbekistan No. PF-4131 dated September 18, 2013 "On measures to implement the agreements reached during the state visit of President Xi Jinping to the Republic of Uzbekistan and further develop bilateral cooperation" ., Ltd »(Huawei), « ZTE Corporation » (ZTE) and« Jiangsu Zhongtian Technology Co., Ltd. » (ZTT) joint ventures were established, in which a project on the organization of production of telecommunications equipment was implemented.

The process of transition from "copper to optics" in Uzbekistan continues on a large scale. Every active subscriber of the company strives to have fast, reliable and cheap internet. Updated tariff plans of UZTELECOM UNLIM series allow the population to use Internet services up to 100 Mbit / s. These services are provided on GPON technology.

From 2019, Uzbektelecom JSC has started the process of connecting to the Internet for its subscribers on the basis of GPON technology.

GPON (English, Gigabit Passive Optical Network, gigabit passive optical network) is a broadband multiservice access network with a single cable with guaranteed quality of service for Internet, telephony and television services. GPON is a personal optical fiber channel with a capacity of up to 1 Gbit / s. GPON technology (gigabit passive optical network) provides users with maximum speed and reliability when connecting to the Internet.

In order to improve the quality of services, from March 1, 2019, the company will switch to new subscribers (individuals) connected via FTTB and GPON technology, as well as existing subscribers from ADSL to FTTB, FTTB to GPON, up to 100 meters (UTP and optical) cable was scheduled to be provided.

Since the beginning of 2019, Uzbektelecom JSC has installed more than 5,000 km of fiber-optic communication lines to provide modern telecommunications services to the population and social facilities using GPON technology. By the end of 2019, tens of thousands of kilometers of fiber-optic communication lines have been laid in the homes of citizens across Uzbekistan.

The bandwidth of Uzbekistan's external Internet channel has increased 10 times at the end of 2018 and now stands at 1,200 Gbps. This is enough to meet the needs of all providers and operators in Uzbekistan today.

Today, Uzbektelecom JSC offers the highest speed tariff plan for the population, ie 100 Mbit / s, which compares with the previous period. It can be seen that it has been increased 5 times. At the same time, the cost of the Internet has decreased by more than 3.5 times this year.

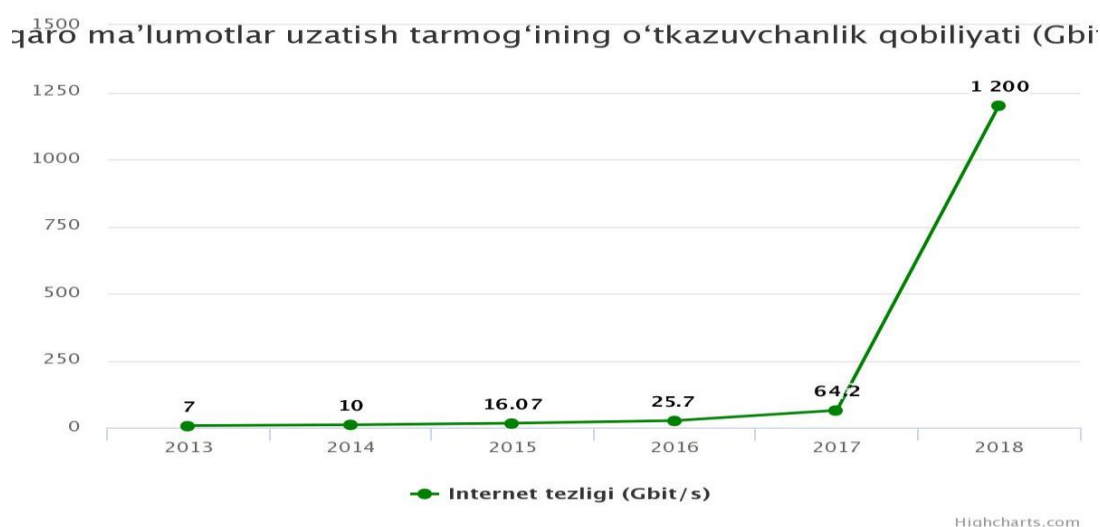


Figure 1

International data network bandwidth (Gbit / s)

In a pandemic, there is a growing demand for internet services, especially online services. This, in turn, requires the acceleration of practical work to increase the speed of the Internet.

The pandemic has reduced the physical activity of the world's population, including Uzbeks, and encouraged people to use more technology and the Internet. Now people are trying to make more use of public services online, albeit with the demands of the situation.

Ookla's Speedtest.net service has released new data on Internet speed in March 2020, and in this Speedtest Global Index ranking, Uzbekistan has risen another 7 places.

In the ranking of Internet speed, Uzbekistan currently ranks 95th (among 176 countries) and has risen by 7 places in a month and 36 places in a year.

In general, according to the results of last year, the speed of wired Internet in Uzbekistan increased by 2.5 times - from 11.62 Mbit / s (as of March 2019) to 26.92 Mbit / s (as of March 2020).

According to the UN, the importance of government portals has increased during the pandemic. As of March 25, 2020, 110 of the organization's 193 member states, or 57 percent, had provided information through their national portals, while the remaining 43 percent (83 states) were unable to provide information through portals. As of April 8, 86 percent of member states provided information through the state portal.

Uzbekistan also has an e-government platform, where people are learning to use public services online. According to the State Service Agency, currently more than 140 public services are available in Uzbekistan through the portal my.gov.uz. According to statistics provided by the DXA, in 2019, only 5-6% of public services provided to citizens online, ie public services in the first 4 months of 2020, public services used by citizens online increased by 15.5% compared to the corresponding period of 2019, according to the analysis.

During the quarantine period, the number of applications for electronic digital signatures (more than 157 thousand) was the highest.

During 2019, the cost of external channel connection tariffs for operators and providers connected to the International Packet Switching Center was reduced from 85 thousand soums to 70 thousand soums (17%) for 1 Mbit / s. From January 1, 2020, this tariff has been reduced to 56,000 soums (20%).

All this indicates that the tariffs for Internet services in Uzbekistan have fallen by an average of 4 times, in particular, the speed of wired Internet for almost all users of Uzbekistan has almost doubled.

Various promotions are being held to attract subscribers to reconnect to ADSL technology via fiber-optic lines (FTTx and GPON) or high-speed VDSL technology, and as part of these promotions, the subscriber's device is provided with a free 100 m cable at a 99.9% discount.

As a result of the implemented innovative processes, the total number of Internet users in Uzbekistan in 2020 will exceed 22.5 million.

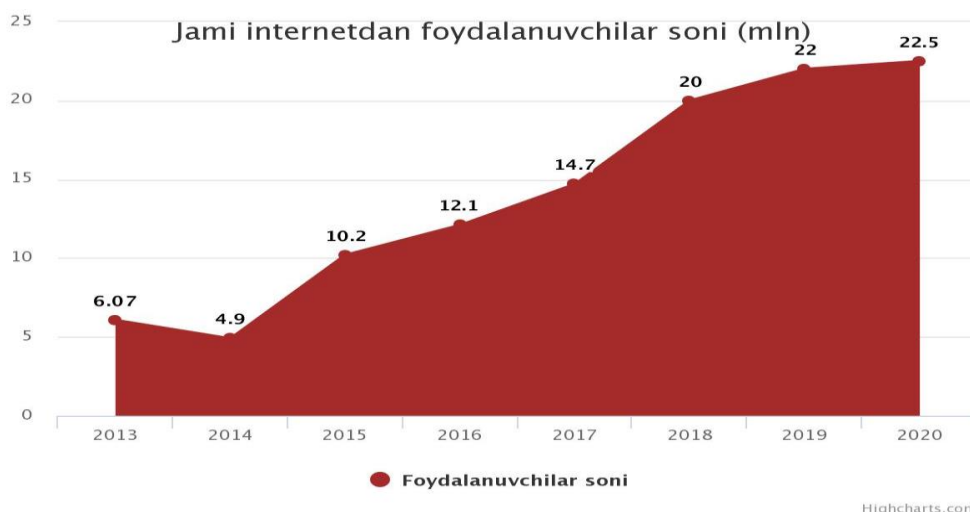


Figure №2

It should also be noted that the Company is also involved in social projects. For example, in 2019, Uzbektelecom JSC provided high-speed services to public education, preschool education and healthcare facilities by building more than 3,500 km of optical lines.

In order to create additional conveniences for subscribers, Uzbektelecom JSC has introduced a new procedure for making a subscription fee for Internet services on any day of the month, regardless of the first day of the calendar month.

In cooperation with the Russian company IVI, Uzbektelecom JSC has launched a unique project to provide online cinema services with a large catalog of more than 80,000 films, cartoons and series, which can be viewed on any convenient device.

As part of a comprehensive program for the development of national content, a project to create a pier network "Uz-IX" was implemented, which allowed to localize the world's most popular Internet resources and portals and develop projects for the development of high quality national content.

According to the Speedtest.net web service, the monthly rating of the Speedtest Global Index, which includes data on mobile and wired internet speeds worldwide, in November 2019, the Internet speed in Uzbekistan increased by 11 points.

2. Result

In the overall ranking, our country ranked 108th out of 180 countries in the world (up 11 places). This is the most reliable growth for the year. In November 2019, the Internet speed in Uzbekistan doubled from 9.98 Mbit / s (Download) in November 2018 to 21.47 Mbit / s.

The communication infrastructure of our country is rapidly moving from copper lines to fiber-optic lines. In the same year, the Company laid more than 12,000 km of fiber-optic lines across the country, providing more than 500,000 people with high-speed Internet access.

As for the mobile services of the Uzmobil branch of Uzbektelecom JSC, it should be noted that the cost of Internet packages has tripled this year.

In 2019, great work was done to modernize and expand the network of Uzmobil branch of Uzbektelecom JSC. In 2019, more than 3,751 base stations were commissioned, of which 2,085 were commissioned in hard-to-reach rural areas. As a result, the quality of services provided has improved and the scope has been expanded.

The scope of roaming is also expanding. In 2019, subscribers will be able to use the services of 25 telecom operators. According to the results of the work, the base of mobile subscribers by the end of 2019 amounted to 5 million people.

The company plans to implement a number of projects in 2020 in order to develop innovative activities, improve the quality of services and the speed of Internet access. Including:

- Modernization of more than 3,000 mobile base stations on 3G / 4G technology, installation of more than 700 mobile base stations on 3G / 4G technology;
- expansion of broadband network to more than 1 million FTTx / GPON technology ports;
- increase the capacity of the backbone network by 4 times, ie up to 400 Gbit / s in regional centers, up to 40 Gbit / s in district centers;
- Establishment and expansion of data storage and processing centers.

The main goal of Uzbektelecom JSC is to bring the level of development of broadband services in Uzbekistan to the level of CIS countries by expanding the capacity of the external channel, increasing the speed and reducing the cost of traffic for subscribers.

In the context of ever-increasing competition, the role of the operator company in the communications market in the near future depends in many respects on the successful solution of the identified tasks.

The telecommunications industry relies on innovative products like no other. Innovative products in telecommunications are huge and bring huge profits to investors when they enter the market. Business solutions of telecommunications are actively using exploration solutions in relevant areas of technology development (IT, fiber optic communication lines, etc.) or develop appropriate tasks for them (ADSL, FTTx, GPON, VDSL). It should be noted that the use of innovative telecommunications solutions determines the success of business in other areas of technology development (transport navigation, tele-education, telemedicine, e-government, etc.).

The following advantages of innovation can be noted:

1. The development of productive forces and production relations, the emergence of new, more efficient forms of management, more perfect products and so on.
2. The pursuit of innovation is inherent in man as a biological species.
3. Improving the efficiency of production and management, improving people's lives.

- 4. Increase in labor productivity
- 5. Emergence of new jobs, professions, etc.

Economic analysis is an integral part of any innovation process. Economic analysis can be used not only as a tool to assess the level of innovative activity and sustainability of the enterprise, but also as a tool to assess changes at this level under the influence of various levels of technical and economic factors. It is through economic analysis that it is possible to predict the negative aspects of the business, the obstacles to the implementation of an innovative project, that is, economic analysis is the most important tool for determining the level of innovation activity, innovation efficiency and internal resources of the enterprise. Economic analysis of innovation is a tool for developing management decisions aimed at improving the efficiency of the enterprise, as well as used to assess the professional skills and business qualities of enterprise managers, innovation departments and specialists.

The results of the analysis of innovative activities of the enterprise are presented in Table 1 by users.

Table 1:Subjects of innovative analysis of the activities of economic entities

The subject of innovative analysis	Key points of interest
Investors who allocate funds for the implementation of innovative projects	The level of return on investment in the enterprise (project), as well as the risk of loss of investment
Managers and managers of the enterprise	information on the effectiveness of innovations, its main results and trends in their change, the state of innovation potential of the enterprise. Analysis of this data allows them to develop management decisions to further increase the effectiveness of innovations and the sustainability of the enterprise as a whole.
The results of innovation are buyers and customers	Information that determines the reliability of existing business relationships with the enterprise and the prospects for their further development
Business employees	Information on the main results and prospects of innovative activity of the enterprise, guarantees of its profitability and stability, availability of jobs and the corresponding level of wages
Shareholders and owners	The effectiveness of the enterprise's innovative activity, its future stability, as it depends on the availability and amount of dividends, as well as the level of risk in the purchase of shares.
Government agencies	information for statistical monitoring, implementation of management functions assigned to them
Public (press, various public enterprises)	Information to assess the company's contribution to innovation in the region and the country as a whole

The fact that a user belongs to a certain group determines the level of his access to sources of information about the innovative activities of the enterprise, which, of course, affects the capabilities and quality characteristics of the analysis.

The presented group of innovative analysis subjects allows to separate this type of analytical research into external and internal parts. In practice, internal and external analyzes are often parallel and superimposed on each other. Internal analysis is carried out by the relevant departments of the enterprise, consultants, the results of which are used for planning, control and overall management of innovative activities of the enterprise. Its goal is to use resources wisely, increase innovation efficiency and ensure enterprise sustainability. The purpose of external analysis may be to create opportunities for profitable investments, profit maximization, and so on.

The purpose of innovation analysis is to determine the feasibility of implementing innovative implementations in the activities of the economic entity.

In the analysis of innovative activities, the company's management solves the following tasks to achieve this goal:

- 1) development of the strategy of innovative activity of the enterprise;
- 2) rational organization of these activities (technology, equipment, resource potential, staff, etc.);
- 3) assessment and analysis of expected indicators of efficiency of use of enterprise resources as a result of innovative activity;
- 4) analysis and assessment of the financial condition of the enterprise as a result of innovative activities;
- 5) increase the efficiency of innovation capacity management.

In our opinion, it is expedient to analyze the innovative activity of the enterprise in the following sequence:

Step 1. Defining the goals and objectives of innovation analysis.

3. Conclusion

Phase 2. Analysis of the innovative potential of the enterprise. The type of activity, the structure of the governing bodies, resource potential, financial condition and readiness of the enterprise for innovation are assessed. At the same time, the composition of the sources of capital financing of the business entity, their role in the formation and development of innovative potential is assessed.

Step 3. According to the results of the current analysis, in order to increase the innovative potential of the enterprise, the direction of identification and use of in-farm resources has been formed.

Step 4. Development of directions for the implementation of innovative activities, the readiness of the resource potential of the enterprise for such changes.

Step 5. Assess the composition of funding sources for specific areas of innovative development.

Step 6. Evaluation and analysis of indicators of efficiency in the use of enterprise resources in the implementation of innovative projects.

Step 7. Evaluation and analysis of investment efficiency indicators (net present value, payback period, discounted payback period, internal rate of return, etc.);

Step 8. Formation of results of innovative activity, construction of forecast reporting forms.

Step 9. Development of the plan of implementation of innovations, definition of its terms, directions.

When developing an innovation plan, the finance manager should consider the following possible innovation challenges:

1. Uncertainty and risks of future development. It should be noted that the risk factor is very important, it is inherent in any activity related to planning. In this case, the enterprise should determine the methods of assessing the probability of a hazardous event, their use and the development of preventive (warning) measures to minimize their negative consequences. To date, various methods of reducing the economic risks associated with the choice of behavioral strategy have been developed, in particular, diversification, insurance and others.

2. Feasibility study of projects and business plans. Innovation and investment projects start with planning. While the feasibility study of the project is being developed, it is called a business plan based on modern traditions. In particular, it addresses the issues discussed above. The main problem is the validity of these plans.

3. The problem of staffing, because innovations often involve the use of employees with a different level of professional training, which forces the company to hire new employees or send "old" employees to improve their skills.

4. Problems of the product sales market. The use of innovations in the activities of the business entity involves the production of new types of products and, consequently, the development of new trade markets.

5. Other types of problems.

The analysis is based on the feasibility of developing and implementing management decisions aimed at increasing the efficiency of innovation and sustainability of the enterprise.

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