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DEVELOPMENT AND INNOVATION POTENTIAL OF THE TELECOMMUNICATIONS SPHRE IN UKRAINE

The article analyses the modern state of the telecommunications sphere in Ukraine, outlines the main tendencies of development, and outlines the perspectives and directions of development through the use of innovation potential.
Key words: telecommunication, innovative potential, services connection.

Проаналізовано сучасний стан телекомунікаційної галузі України, виявлено основні тенденції розвитку, сформовано перспективи та напрями розвитку за рахунок використання інноваційного потенціалу.
Ключові слова: телекомунікації, інноваційний потенціал, послуги зв'язку.

Проанализировано современное состояние телекоммуникационной отрасли Украины, выявлены основные тенденции развития, сформированы перспективы и направления развития за счет использования инновационного потенциала.
Ключевые слова: телекоммуникации, инновационный потенциал, услуги связи.

Introduction. The Modern tendencies of development in the global sphere of telecommunications can be characterized as a transition to globalization, creation of a single information space, single unified telecommunications system and standards of exchanging information, introduction of new information technologies in important spheres of the society, particularly in the economy.

In the conditions of a market economy the telecommunications sphere occupies an important place, starting from the end of the 20th century, information and its transmission became one of the main factors of production, reliable and modern information ensures the owner of such information economic, social and political advantages and gains. Telecommunications infrastructure significantly influences the effective functioning of the national economy through results of others subjects of the economy.

The development of telecommunications – is one of the sources ensuring functionality and rise of the state's economy, as the dynamism of global economic connections has caused a sharp increase in the demand of telecommunication services. In its own turn, scientific and technical progress has led to the creation of new telecommunication technologies, due to the multiplicative effect there is creation of new services and, correspondingly, the emergence of new markets.

The theoretical basis for carrying out scientific tasks in the sphere of providing telecommunication services are scientific works, dedicated, first of all to the issues of management in communications, among these the most significant are the results of scientific researches by such scientists as G. F. Balkina, S. V. Voitko, A. A. Golybotsky, B. M. Granutova, G. M. Zhigulskaya, V. Orlova, I. V. Petykova, S. Redkina, N. P. Reznikova, V. K. Steklova, L. A. Stroi, L. I. Shecktman and others. However, the formation of modern developmental tendencies and perspectives through the use of innovation potential appears to be insufficiently developed.

Statement of the problem. The purpose of research is, based on statistical information, scientific-theoretical developments and taking into account the work of

leading world think tanks, to analyze the features and development of telecommunication sphere in Ukraine and outline tendencies and perspectives of its development through exploiting innovative potential.

Results of the research. Advanced development of telecommunications is a necessary condition in the creation of business infrastructure, formation of a conducive environment which attracts investment into the country, solving problems of population employment, development of modern information technologies. The significance of the telecommunications sphere is evident due to its ever increasing contribution to the Gross Domestic Product of developed countries. The GDP contribution of telecommunications in developed reaches 5%. In Ukraine from realizing connection services in 2014 (without the autonomous republic of Crimea) the volume of income amounted to 52,4 trillion UAH, which was 2 % higher than income received in 2013, but the contribution of IT to GDP comprised 1,39 % [3].

One the features of in the development of this sphere appears to be the monopoly of state owned telecommunication firms and currently, in comparison with other markets it has reached maximum saturation. For 20 years this segment of the national economy turned into one of the most profitable sectors of the Ukrainian Economy.

Besides directs profits and gains from the telecommunications sphere, according to expert assessments from the German Association of Information Technologies, for telecommunications and new methods of mass information in EU countries, a 1 Euro investment in telecommunications gives 1,5 Euro GDP growth, but in America 1 USD investment in telecommunications gives 2,6 USD to GDP growth.

In modern times one of the most important conditions for the development of the services sector is innovative development, which is carried out, first of all, on account of scientific technical progress, owing to which there is hyper development of the services sector: sharp decrease of transportation costs, application of new means of communications and new technologies which do away with direct personal contact between the buyers and sellers of goods; there arose new forms of trading services; increased demand on such types of services which did not have material form before.

Innovative potential is considered to be the economic possibilities for businesses to effectively bring new technologies into the economy [5].

Innovation potential - is the ability to change, to better and to further progress the source of development. Evidence of this can be such phenomenon as diffusion of innovation. The application of new equipment (which is the direct result of innovational progress) leads to the production of new products, which, in their turn, due to appearing on the market, are sources and factors of further changes and development. Thus «the Multiplier effect of innovation is growing much faster than the circulation» [6, p. 24].

The choice of one or another strategy of innovative development depends on the magnitude of the innovative potential. If an enterprise has all the necessary resources, then it can advance forward on the strategy of a leader, developing and introducing new or basic innovations. If the Innovative possibilities are limited then it’s suitable to build up and chose the strategy of a follower, that is to implement improving technologies. This approach in interpreting Innovation potential can be considered as classical.

The essence of any process, phenomenon, and object is usually revealed through its functions. However the lesser clear meaning of the concept «innovation potential» can be tracked by structuralizing it and outlining the main components. The most substantiated approach appears to be that brought forward by D. I. Kokurin in his monograph «Innovative activities», which provides for the allocation of three components of innovative potential - resource, production and internal. His work is interesting for

examining and analyzing, as an orienteer, the building a model of innovative potential of any object, system and process. Thus, the structure of the innovation potential is represented by the unity of its three components: resources, internal ,productive, which exist, mutually contemplating each other and are in use as its «triune essence» [7, p. 126].

Now innovation is becoming a main factor of development in many sectors of the national economy. Characteristically there is a growing number of scientific works, in which Innovative activities are studied. In postindustrial societies National information resources are the greatest potential source of wealth.

In connection with this it is vital to develop a new sector of the economy - information (digital) economy. Postindustrial economy - this is an economy, in which industry according to employment indications and its contribution to the National Production comes second to the sphere of services, and the sphere of services is mainly the processing of Information.

Latest technologies define the «technological gap» and ensure a decrease of costs. As a result, scientific technical progress, based on innovations, permit enterprises and entrepreneurs in the sphere of services to gain temporary monopoly in new services.

As a rule, innovation has a systemic character, leading to changes of all or several elements of production and technical, organizational and economic or socio-economic system of an enterprise. The main forms of innovation, which are used in the telecommunications sphere are:

– technological innovations - activity of organizations, connected with processing and introduction of new technological products and processes, and also significant improvements in products and processes, new and significantly improved technological services, new and new and significantly improved means of services production [8, p. 23–29];

– marketing innovation - new and significantly improved Marketing methods, including: 1) significant changes in design and package of goods; 2) use of new methods of selling and presentation of production; 3) formation of new pricing strategies [9, p. 344–356]. They are aimed at fully satisfying the needs of the consumers of goods; opening new sales markets; expanding the base of consumers of goods and services, with an aim of improving volumes of sale;

– organizational innovation - use of new methods in conducting business, organization of work places, organization of external relations [10, p.62].

– in enterprises of the telecommunications sphere innovation is a main strategic factor. Innovation process ends with the application of the results of intellectual activity on the market. Empirical research has shown that introducing about a third of new products ends in failure, and from the introduced goods only one third gives profits of an average level, and others only allow the covering of expenses. Mobile communications are less costly compared to industry, but they require significant capital for maintaining infrastructure and also for its constant upgrading and modernization. One feature of this sphere is the fast obsolescence of equipment; therefore it becomes necessary to spend considerable money in the acquisition of new, Innovative equipment and technologies.

The domestic market of telecommunications services is characterized by the stability of the market positions of key operators, stable demand on services, and also high competition in the segment of adjacent products [2].

On the Ukrainian communications and information market as on 01.01.2014 there were 86 377 telecommunications operators, having licenses on a certain kind of activity in the telecommunications sphere, 57,1 % of residents in Ukraine have internet access; 39,9% of households have broadband internet access; 1\5 of Ukrainian households have

access to cable television services; nearly full mobile communication coverage all over the country's territory, whose level of penetration, according to the statistics of operators, comprises 142,4 % of Ukraine's population.

As at the end of 2014. More than 298 000 people work in enterprises of different forms of ownership; this is 13% of the average number occupied in the services sector. The total amount of income from rendering services in the sphere of communications and information in 2014 amounted to 67,5 trillion UAH, which 21,5 % of the all-Ukrainian volume of realized services.

Dynamic of income and its annual growth from service provision in communications and information sphere during the period from 201– 2014. In comparing similar data for the same period, Table 1 was made according to statistical information [2; 3].

Table 1

Dynamics of income from rendering services in the sphere of communications and services 2011-2014, billion UAHa

Years	2011	Increase, %	2012	Increase, %	2013	Increase, %	2014
Income	50,3	106,0	51,1	106,0	51,4	102,0	52,4
Mobile communications	31,0	107,6	31,6	101,7	30,9	99,7	31,6

The current state of the telecommunications market is determined by a number of factors, namely- the long awaited introduction of 3G(UMTS) connection standards as all other countries have transitioned to this standard, but in Ukraine mobile internet is provided on the basis of the outdated 2G standard. The introduction of 3G (UMTS) must lead to a high microeconomic effect, first of all, additional funds for the country's budget for the use of corresponding licenses (more than 9 billion UAH has been injected into the budget), creation of employment and emergence of new markets. However there are certain difficulties. Such difficulties as the devaluation of the Hryvnia, termination of mobile communication operations in Donbas and Crimea, which has led to high expenses in the introduction of the long-awaited 3G(UMTS).

In February 2015 all the leading mobile operators obtained licenses for rendering 3G (UMTS) services, which allows reducing the gap between communication standards used by Ukraine and the leading countries of the world, and opens doors of opportunity for exploiting of the advantages of modern 4G communication, used by 124 countries and more than 800 operators around the world.

Leading Ukrainian operators are actively increasing investment funds for implementing the new standard, for half a year +2015 whole more than 5.2 billion UAH was invested in fixed assets, «Kyivstar» invested 1981000000 UAH in development, «Astelit» 1.8 billion UAH, «MTC» - 1371000000 UAH. According to statistics from Ukrchastotnadzor these investments gave an opportunity to put more than 3,3 thousand 3G(UMTS) base stations into operation, however a small amount of subscribers use these services. Unfortunately, it became clear that such considerable investments do not guarantee considerable profits to the company.

Today, the number of phones working under the control of operating systems (smartphones) is growing in Ukraine. The share of smartphone owners and communicators who were registered in telecommunication sites of mobile network operators grew approximately by 35 – 40 % and exceeded 6 million within a year. This is turn created conditions for increase in demand of the population on services with the use

of high-speed broadband radio access technologies such as UMTS, CDMA, WiMAX and to significant increase in the volumes of mobile internet traffic tabl. 2.

Table 2

The number of smartphones registered in networks of the main Ukrainian operators at the beginning of 2014

Service provider	2011	2012	2013	Share from the General number smartfonev in the traps of Ukraine,%
MTS-Ukraine	2,4	3,5	5	21
Kyivstar	1,5	2,6	4,3	15,6
Astelit	-	1,2	2,4	26

Source: *CNews Analytics, 2014.*

A result of the absence of 3G and 4G standards is the slow penetration of smartphones in the Ukrainian mobile network sites, subscribers gradually move to Android (the leader in the sphere of mobile OS in Ukraine), but they still use phones based on Symbian.

The share of data transmission services by Ukrainian operators comprises only 9% of the total income of operators, in the EU in 2003 – 2004 the income from data transmission comprised 15–18 %, and now it's more than 40%, thus the prospects of the Innovative potential of the Ukrainian market are closely connected with the slow infiltration of smartphones and tablets on the market.

Connection services are divided into main and additional according to the principle of necessity of provision. Main or basic services determine the profile and specialization of an enterprise, but additional services allow raising the quality and competitiveness of the enterprise in general. Basic services of mobile connections – providing access to communications systems and firm activities for the reception, processing, transmission of telecommunication messages. Additional mobile communication services – all communication services, which are not connected with telephony (voice transmissions).

All additional mobile communication services are divided into consumer and technological services. Consumer services – these are all the additional services, provided by the operator, directly not connected with the standard of used communications. Technological services - these are services directly connected with possible standard networks, in which the operator works.

Now in Ukraine the main mobile operators are: Life:), Beeline, PEOPLEnet, Kievstar, Djuice, MTC, JEANS. The main tendency in recent times has been the emergence of three leading mobile communication operators: Kievstar, MTC, and Astelit, as confirmed by data in table 3. Following the results of 2014, they showed a record growth in the subscriber base. The number of subscribers of these companies grew more than 7 %, obtaining high significant value of this indicator for the past three years.

The National Commission executing government regulation in the sphere of information and communication (NKRSI), in a report on results on analyzing market services terminating services on sites of mobile networks, carries out its own assessment method on competition on the services markets of traffic termination on mobile networks [2; 3].

The main indicator used for calculating these criteria, market share of the operator in the services market of traffic termination (tabl. 3).

Table 3

Market share of the operators of mobile networks at the of 2014

Entity	The number of subscribers, mln	Market share of operators, %
Private Joint Stock Company «Kyivstar»	25,96	45,22
Private Joint Stock Company «MTS Ukraine»	20,424	35,58
Limited liability company «Astelit», the brand life :)	7,954	13,86
Private Joint Stock Company «Ukrtelecom»	1,009	1,76
Private Joint Stock Company «Telesystems Ukraine», PEOPLEnet	0,8537	1,49
Limited Liability Company «International telecommunications»	1,204	2,1

Thus, according to the statistical results of the activities of mobile operators, in 2014 the number of Kievstar subscribers grew to 25 969 000, and this ensured Kievstar the greatest share on the market 45,22 %. The next competitor, just like as in the past, remained MTC Ukraine with a subscriber base of 20 424 000 and a market share of 35,58 %. In the third place, by number of users, is JSC Astelit, the life brand :) which almost didn't change its number of subscribers in comparison with the previous period - 7 954 000 and 13,9 % market share. Number of Ukretelecom network subscribers reached a mark at 1009000 and correspondingly the market share changed to 1,8 %.

In October 2015, the analytical company pyramid research, published a forecast on the development of the Ukrainian telecommunications market till 2018. By its estimates, the sector growth stopped in 2013 when the market comprised $5 200 000 000 (3,3 % higher than in 2012). But starting from 2014 this segment of the economy was to fall annually on average at 2,4 % and shrink by $500 million to $4700 till 2018. The expected decrease in market turnover, according to Pyramid research, is a result of the current political and economic difficulties in the country. «The annexation of Crimea and military conflict in the east, and also interruption in network operations and devaluation of currency- all this negatively reflects on the general purchasing power», analysts say.

Conclusion. Telecommunication service market in Ukraine is being developed continuously: in accordance with the data of iKS-Consulting' analytics, penetration of mobile connection service at the end of 2014 was 141 %, in accordance with NKRZ's data it was 142 %. Telecommunication service market overcame one hundred per cent level of density in 2007 but this criterion shows only the tendency of 2–3 SIM-cards by one talker use, but not a real quantity of mobile connection users.

1. Thus, mobile operators' market is almost at the stage of maturity: the level of mobile connection service penetration is high enough and there will not be a wave of new talkers and an average income from one user (ARPU) is gradually falling down and consequently the income rise of the giving service of mobile connection is very low. Almost for all operators an average monthly income per a user has approximately 1–2 % gone down.

2. At the contemporary stage of the mobile connection service additional service on the basis of different technologies is being actively developed: SMS, MMS, GPRS, WAP, USSD, IVR etc. Theme service (additional and information-entertaining mobile connection service) is being dynamically developed, which is realized with the help of new technological decisions. Theme service on the basis of SMS technologies is of special popularity.

3. New companies do not appear in Ukrainian mobile connection which is our country's peculiarity, in other words general stimulus to the rapid innovation development in the sphere is absent and the necessity to develop additional service has appeared in

accordance with the mobile connection service move to the filling and accentuation of price competition. Additional service has become stimulating one for companies-operators marketing activity and their communication policy.

4. It is being waited that the tempo of the mobile Internet in Ukraine will evidently be accelerated if the operators have a possibility to sell the service of the third generation 3G in full swing using the given resource.

5. In such conditions telecommunication companies have to conduct a constant innovation policy and according to the plan introduce new service to the market, the price of which, as the research shows, is rather high and does not always recoup so quickly. This can be explained by high level of science capacity and much shorter life cycle of the service comparing with the other fields of life and rather limited capacity of the existing products definition as a result of their high standantization.

6. Innovation criterion influence on the enterprise nowadays is a radical and complex one. Too high financial profit of the leading world companies from innovation activity is explained by their use of not very effective and even old technologies under the slogan of new ones. In reality, innovations and the science which they create are much more difficult to reach today than the most valuable natural resources. The result is that only highly developed countries have them, it gives them a chance to hold monopoly and thus to appropriate excess profit.

In the near future mobile connection market will stay highly competitive and intensive. As a result of such movements the only reliable methods of competition in the field are competition of quality and promotion of connection service. Telecommunication service market of Ukraine will continue to rise in view of the popularity of the mobile Internet service but not very quickly. Real dynamic can be waited only by the expense of effective mechanisms of regulation introduction conditions, which will give a chance to diminish the influence of dominating operators on the pricing and new service and technologies introduction.

Science newness consists in determination of the condition, main trends and directions of Ukrainian telecommunication (media) area due to the high-quality using of innovative industry's potential.

Statistic analytic and comparative research methods were used in the work as well as the results of leading world companies exploration.

Research results can be used for formation of the industry's development strategy and findings of perspective investment trends for enterprises, which work on the Ukraine's media market.

Forward research extension can be developed toward the perspectives of new market creation due more wide scale using of exactly additional services of the media market.

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PROBLEMS OF REFORMING THE LAW ENFORCEMENT SYSTEM OF THE STATE: AN INNOVATIVE METHOD OF MOTIVATION OF STAFF

The features of the restructuring process of the law enforcement system of Ukraine. The methods for creating an effective system of motivation of employees in structural change. Revealed more important areas of improving the motivation of social actors in the activities to achieve the strategic objectives in the fight against crime, ensure social security in the material and spiritual spheres of society. The ways of creating opportunities for implementation of the individual abilities of employees, providing depth study of individual abilities and needs of each individual artist to intensify its efforts to achieve the goals of the organization. Explore such ways to encourage employees of law-enforcement sphere, as participation in development and decision-making, the introduction of competitive vacant posts, the demilitarization of special ranks, the democratization of the personnel policy, the development of professional mobility of employees.

Key words: motivation, innovation, promotion, management, reform the law enforcement sphere, the police, personnel, international experience and European standards, international experts.

Проаналізовано особливості процесу перебудови правоохоронної системи України. Досліджено способи створення ефективної системи мотивації працівників під час структурних перетворень. Виявлено найважливіші напрями вдосконалення процесу спонукання соціальних суб'єктів до діяльності з досягнення стратегічних цілей у боротьбі зі злочинністю, забезпечення соціальної безпеки в матеріальній і духовній сферах суспільства. Розглянуто способи реалізації індивідуальних здібностей співробітників, що передбачають ґрунтовне вивчення індивідуальних здібностей і потреб кожного окремого виконавця для активізації його діяльності з досягнення цілей організації. Досліджено такі шляхи стимулювання співробітників правоохоронної сфери,