

The role of smartphones and the internet in developing countries

El papel de los smartphones y la internet en los países en desarrollo

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ABSTRACT:

This study tackles the role of Internet in developing countries. The purpose is to analyze this role through investigation of market expert reports via analysis, synthesis, generalization. Findings are general trends in use of Internet-connected devices. Internet technologies penetrated all aspects of life. Countries in the sample follow both global and local trends and have individuals using the Internet in all population groups. Most are technology recipients. IT increases development rates, improves competitiveness scores. Generally, online platforms boost IT business.

Keywords: Internet, developing countries, smartphone, information relations.

RESUMEN:

Este estudio aborda el papel de Internet en los países en desarrollo. El propósito es analizar este rol a través de la investigación de informes de expertos de mercado a través de análisis, síntesis y generalización. Los hallazgos son tendencias generales en el uso de dispositivos conectados a Internet. Las tecnologías de Internet penetraron todos los aspectos de la vida. Los países en la muestra siguen tendencias tanto globales como locales y tienen individuos que usan Internet en todos los grupos de población. La mayoría son receptores de tecnología. TI aumenta las tasas de desarrollo, mejora las puntuaciones de competitividad. En general, las plataformas en línea impulsan el negocio de TI.

Palabras clave: Internet, países en desarrollo, teléfono inteligente, relaciones de información

1. Introduction

The Internet technology has significantly changed the economies of developing countries. The access to technology and unlimited up-to-date information, outsourcing of individual industries, access to e-commerce marketplaces (Amazon, Ali-Express, etc.) are factors that gave developing countries a chance to become competitive in the global market. According to the Report on World Internet Development (2017), the global economy is characterized by the following:

- economy sectors that are directly or indirectly associated with the use of Internet technologies, demonstrate the highest growth rates and, probably, will generate the greatest income and profit in the coming decades;
- the greatest threat to the Internet is the lack of control and security;
- developing countries are making the most significant contribution to the development of the Internet economy, but the highest growth rates will be observed in the Internet economies of China, India and Argentina;
- more than 50% of the world's population use mobile Internet;

Since the Internet became popular a few decades ago, general impact of Internet technologies on the economies of developing countries has not been determined and the experience has not been gained yet. This fact explains the relevance of our research.

2. Literature review

The researchers have been practically interested in studying the influence of the Internet on the economies of developing countries since the end of the last century. Thus, in the work ([Kanti Srikantaiah & Xiaoying](#), 1998), it was established that wider access to the Internet resulted in new industries in China and India. At the same time, there is a so-called digital divide between developed and developing countries. It can be eliminated by deregulation of the market for Internet service providers (Wallsten, 2002, 2005). According to the Stanford University study conducted in Mozambique, Peru and India (**The Impact of the Internet on the Developing Countries**), the digital divide is exacerbated by the cultural conditions and current problems of developing countries. Local authorities do not understand the prospects for using the Internet, because the most important problems are providing immunization, food and energy supply. At the same time, the Internet is perceived as a growing social and economic opportunity. The penetration and accessibility of the Internet in developing countries are determined by such factors as income, human capital, youth dependency ratio, telephone density, law enforcement and the development of the banking sector. At the same time, at the modern development stage, the factors related to the introduction of computers and the Internet are not significantly different for developed and developing countries; and the low technology deployment rate in certain areas of developing countries will be explained mainly by low incomes and the quality of infrastructure (for example, telephone networks) (Chinn & Fairlie, 2010).

Nevertheless, according to some researchers, the introduction of the Internet in most developing countries resulted in increased globalization and depletes the resources of developing countries, which makes them more economically dependent on foreign states (Albirini, 2008).

At the same time, many developing countries (for example, African countries) are characterized by the fact that women find it difficult to access the Internet ([James](#) , 2010).

At the present development stage of civilization, the affordable Internet is considered to be a priority for the development of developing countries. This is explained by the fact that many people in developing countries live in rural areas, where access to the Internet is often difficult. Therefore, a mobile phone is the main device which will help the "next billion" of Internet users go online (Sambuli, 2016). However, even the availability of mobile Internet for the majority of people in developing countries does not reduce the problem of social exclusion of some population groups, for example, women. They do not widely use the Internet, mainly because smartphones are still unavailable to them and they know nothing about the Internet (Chigona et al., 2009).

Thus, we can conclude that the introduction of the Internet made a significant contribution to the development pace of developing countries. It gave them a chance to increase their competitiveness in the global market. At the same time, most researchers consider African, Latin American and Asian as developing countries where the majority of the population lives in rural areas. The role of the Internet (including mobile) in developing post-Soviet countries is not studied. These countries are characterized by the fact that the majority of the population lives in cities, there is no problem in accessing the Internet due to discrimination,

and the development rate is much closer to the rate of developed countries. The conducted literature review revealed that the problem was not sufficiently developed for such countries and it formulated the purpose of our research.

The purpose of the research is to analyze the role of smartphones and the use of the Internet in developing economies.

3. Methodology

The research is based on the publications of market experts. We used theoretical research methods (abstraction, analysis and synthesis, idealization, induction and deduction, mental modeling, ascent from the abstract to the concrete, etc.).

To study the role of smartphones and the Internet in developing countries we used the methods of analysis, synthesis and generalization.

4. Results

The introduction of digital technologies is accompanied by certain challenges that the state and society must overcome. They are short-term lost productivity due to the introduction of new technologies; a decrease in the number of employees, in particular, highly paid and low-skilled workers and increased technological unemployment; a temporary income inequality for the period of raising the qualifications of workers to the required level; significant changes in the regional structure of the distribution of productive forces; transformation of norms and rules (greater intellectual property rights protection and improved antitrust laws, etc.), lifestyle.

The national statistics (Federal State Statistical Service; State Statistics Service of Ukraine; National Statistical Committee of the Republic of Belarus; Committee on statistics Ministry of national economy of Republic of Kazakhstan) shows that on average, annually the number of Internet users increases by 7.5–9% and the number of social networks users grows by 6.5–7%. More than 87% of the population of developing countries are Internet users, while the Internet is not used by older age groups living in remote areas. About 75% of the population of these countries use mobile Internet. The share of smartphone traffic is about 25% and the growth rate is 18% compared to the last year. Tablet users are less likely to access the Internet (the growth rate is about 6% compared to the last year). Users read news, search for goods and services, but only about 45% make online purchases. They spend money on travel, hotels, toys, hobby, health and beauty products. There is no limited Internet access for any population groups in developing countries. A significant part of the population is active users of social networks, and most of them use mobile devices to go online. On average, people spend 2.5 hours in social networks and stay online for about 6.5 hours every day. Daily communication becomes virtual. In addition, there is a phenomenon in which some active Internet users refuse to use social networks or use them only to participate in thematic groups. In this case, the participation of these users in social life decreases. The number of both real and virtual contacts with people also falls down.

Table 1
Generalized indicators of the Internet use in developing countries

Indicator	Russia	Ukraine	Belorus	Kazakhstan	Georgia	Moldova
The share of Internet users	88%	87%	86%	88%	89%	88%
The share of mobile Internet users	78%	77%	75%	78%	77%	79%
The share of active social network users	65%	66%	68%	67%	68%	67%

Average time spent in social networks	6,5	6,8	6,7	6,2	6,9	7
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Young people tend to be Internet addicted and dependent on social networks. At the same time, there is a downward trend in alcohol and tobacco dependence. One tendency is replaced by another, namely:

- net compulsions: compulsive search for information in remote databases;
- information overload: pathological tendency to gambling, online auctions, electronic purchases;
- cybersexual addiction: dependence on "cybersex", that is, visiting pornographic websites, discussion of sexual subjects in chats or closed "adult" groups;
- cyber-relational dependence: dependence on communication in social networks, forums, chats, group games and teleconferences, which may lead to the replacement of real family members and friends with the virtual ones;
- the substitution of real life with the virtually created one: due to the low standard of living in developing countries, virtual confirmation of high material status (photos, videos, etc.) is particularly important.

The recent growth of social networks has been promoted by two factors: an increase in the number of people accessing the Internet via mobile phones and an increase in social networks users due to older people, which has become the fastest growing segment. According to the statistics, in developing countries, the most growing segment of Facebook users are people aged 54-54 years old; Twitter users – people aged 55-64 and Vkontakte users – women aged 55-65.

The most popular messengers are Skype, Viber, Facebook and ICQ. The indicators of the use of the messengers by age group are the following: Skype is the leader in all categories; Viber is popular with the users aged 16-44; Facebook Messenger has the same level of popularity (from 25 to 30%) with the users of any age; ICQ is popular with older users (from 45 to 59 years old). Viber is popular with smartphone users (92%), but it is not widely used on other devices (the indicator does not exceed a quarter). Facebook messenger is used on both smartphones (62%) and other devices (laptop, desktop computer and tablets - 49%, 43% and 27%, respectively). The most popular messenger Skype is installed mainly on computers, as well as ICQ.

At the same time, the majority of Internet users are included in the global network segment, rather than in the national one: users prefer to order products directly from foreign marketplaces (for example, Amazon, Ali-Express), rather than from the national ones. This is explained by the fact that national online stores provide products at higher prices and the range of goods is not so wide.

The inclusion of Internet users in the global network segment created such a phenomenon as remote work directly with customers. Due to low wages in developing countries, the work on freelancing websites has become very attractive. At the same time, an increase in the number of freelancers is accompanied by a decrease in their remuneration or the transfer of orders to countries with a lower standard of living. The development of national freelance marketplaces has quite significant positive aspects, especially if the unstable political and economic situation and the crisis observed in many sectors of national economies are taken into account. The active development of freelance activities in developing countries has a positive effect on their economy, since it can be used as a tool to reduce unemployment. The active cooperation of freelancers with foreign customers results in foreign exchange earnings in the national economy. The growth of such incomes may increase investment, especially in real estate. When working for a foreign company, freelancers get work experience, which they use in their country. There is an active exchange of experience at the international level. It is also possible to highlight the negative consequences of the development of freelancing and IT in developing countries:

- tax evasion, shadow income that freelancers receive, like any shadow income, lead to the development of corruption and the shadow economy;

- freelancers cannot create political lobbying organizations, they are politically passive; this leads to a weak development of social partnership;
- the activity of a freelancer is not related to the territory of the country. If the economic or political situation becomes worse, he/she is free to change his/her place of residence; and foreign companies can help highly-qualified workers to relocate;
- there is a problem of protecting confidential information and copyrights, a low level of social protection for this category of employees, the lack of legislative regulation, which causes an outflow of the population employed into the informal economy sector.

Another consequence of the availability and actual lack of control of the Internet is the widespread piracy, the main reasons for which are:

- public tolerance (and to some extent encouragement) to piracy activities;
- the price for licensed products, which in most cases is too high;
- availability of pirate copies;
- confidence in the legality of misconduct;
- negligence, that is insufficient attention to the terms of licence agreements and other documents accompanying the software product;
- scientific and technological progress.

Piracy indirectly affects the economy of developing countries. It influences local video and music industry. Pirates, for the most part, harm international manufacturers of computer products and video / music content.

The mass distribution of digital technologies has changed the possibilities and behavior of consumers. It also transformed common technologies and standards of many industries. Mobile technologies significantly change business models, since information can be controlled remotely. Smartphones are a personalized multifunctional network device. It has a wide range of applications, video cameras, photo cameras, which allow you to connect with all devices on the Internet and other people.

The modern banking sector is characterized by two types of Internet banking:

- 1) Internet banking, i.e. the provision of remote banking services based on the Internet banking system;
- 2) mobile banking, i.e. the provision of remote banking services via mobile technologies; it is believed that in the future mobile services will provide a maximum increase in the customer base of banks.

People aged from 25 to 50 years find Internet banking the most relevant. However, it should be noted that older people (people in their fifties) are getting interested in this banking service. Although it is not an unusual fact, taking into account the modern realities of life. The most common Internet banking operations (including mobile) are viewing bank statements, processing deposits and loans, utility payments and transfer of funds; mobile account replenishment; purchase of tickets.

E-commerce is one of the most dynamic markets. It is a part of a small number of economy segments that continue to grow despite the crisis, currency fluctuations and other problems that the countries have faced in recent years. Most of the buyers are young people with higher education living in the cities. More than half of Internet buyers in post-Soviet countries are people aged from 14 and 34 years old; just over 36% of them are residents of the cities with a population of more than 500,000, and 20.5% live in rural areas. The access to 3G Internet is an important factor positively influencing the growth of online shoppers. This will be especially noticeable in the coming years. The global reach of the mobile Internet is surprising. Only a year after the introduction of 3G, there were more than 10,000,000 users. Income is one of the important components of the Internet user portrait. Here, the negative impact of the current economic situation can be clearly observed – only 9% of the users have above average income while every third person has below average income.

The introduction of digital technologies into business makes a significant contribution to its

modernization (transformation of business models, changes in the management and business operations). It also promotes the growth of its competitiveness. In this regard, it is important to assess the penetration rate of network technologies and their potential for the development of digital economy, including by industry, as well as in comparison with leading world economies.

In recent years, cloud computing has become a driver for the use of network technologies in organizations. Cloud computing optimizes business processes and hardware and software costs. In 2018, the IT services implemented on a cloud platform and aimed at storing information, organizing interaction between information systems, employees, providing access to software and platform solutions, were used by 20.5% of organizations. This is almost 7 % higher than in 2017. Compared to 2016, it is an increase of 2.1 %. In the digital sectors (IT and communications), every third organization uses these technologies; 23–27% of organizations use cloud services in hotels and catering, trade and manufacturing.

Nowadays, the Internet is not only a single information space, expanding the sphere of communication and access to information and services, but also a fundamental infrastructure of the digital economy that supports all sectors. The main contribution to the value-added to the Internet economy (about 60%) is made by non-digital industries engaged in both online and offline activities. Moreover, the dynamics of the Internet business is usually ahead of the traditional business. The main contribution to the dynamics of the IT sector was made by the companies involved in data processing, web hosting and provision of information security services for computing systems and networks: their own production in comparable prices increased by 29%. The sales of the organizations engaged in the creation and use of databases and information resources, including Internet resources, increased by 7.5%. The companies specializing in retail e-commerce improved their results by 11.7 % compared to 2018, while in the retail sector as a whole there was a decrease by 6.1% (in comparable prices).

The development of B2B e-commerce is the initial stage in the countries under consideration. They have opportunities for its rapid growth, a variety of areas and categories of online sales. This is positively affected by the e-commerce growth rate, the penetration rate of the Internet, and the growth in the number of e-buyers. E-commerce is an industry that is developing quite fast compared to other economy sectors. It was determined that e-commerce has recently entered the growth phase, but the volume of online retail in the national economy segments is generally relatively small.

Thus, the e-market is gaining significant popularity. High growth rates are observed in e-commerce. The obstacles for entering the e-market are not significant, and the benefits of e-commerce for users and entrepreneurs are visible. However, at the present stage, the development of the e-commerce market of the post-Soviet countries is hampered by a number of unsolved issues. number of unsolved issues.

5. Discussion

The analysis of trends over the past ten years with regard to individual Internet connections in the post-Soviet countries reflects global economic processes, according to which the developed countries of Europe and the USA were the leaders of economic development ten years ago. In 2006, the share of developed countries having access to mobile communication and the Internet was, respectively, 41.1% and 56.4%, India and China - 22.8% and 14.8%. In 2011, the share of developed countries decreased to 28.4% and 38% respectively. But in India and China, it rose to 32.1% and 28.8% (World Internet Development Report). At the same time, the countries under consideration are characterized by the same tendency: the level of Internet connections during this period was about 7% per year. The last half decade is characterized by the tendency towards some stabilization and the establishment of parity between the players. In this period the share of India and China in the world market of mobile connections in 2018 decreased to 31.7%, and in developed countries it fell down to 21.9%. The share of Internet connections in India and China increased to 30.9%, while in developed countries it decreased to 30.6%, which is comparable with similar data for the countries under consideration (Internet World Stats;

Internet Growth Statistics; Global digital population as of January 2019; The Inclusive Internet Index: Bridging digital divides; Women and the Web; QFINANCE Dictionary; Digital Economy: Future Directions; Review report on clouding technologies and the platform WindowsAzure).

The dynamics of absolute indicators is largely determined by demography. It cannot reflect the basic development trends of the world market. The analysis of the annual growth rates of mobile and Internet connections made it possible to determine the current state and predict that the general development trends of the Internet technologies market will coincide with the similar trends for developed countries, but the growth rates will coincide with the rates of developing countries, attracting new users and developers to the Internet technology industry. In general, this may lead to an increase in outsourcing to the countries with a lower standard of living.

6. Conclusions

Nowadays, the Internet has become a global market, which is poorly regulated by any legislation. Therefore, for developing countries it can be described as a perfectly competitive market according to Smith's classification. Such a market is characterized by all relevant trends, taking into account its virtual characteristics.

The Internet, including the mobile, has become the driver that can significantly reduce the civilization gap between developed and developing countries. In this regard, the following trends are observed in developing countries:

- Internet technologies have penetrated into all spheres of human life and the degree of their penetration for developed and developing countries is similar;
- most countries are the recipients of Internet technologies;
- the difference between developing countries and the countries under consideration lies in the fact that all population groups have Internet access;
- active work of freelancers contributes to globalization;
- Internet access has led to the emergence of social elevators related to IT business and work for international companies.

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Bibliographic references

Abdrakhmanova, G. I., Bondarenko, N. V., Vishnevsky, K. O., Gokhberg, L. M. et al. (2018). *Internet development trends in Russia: an analytical report*. Coordination center of the national domain of the Internet, National Research University "Higher School of Economics". M.: HSE, 184 p.

Albirini, A. (2008). The Internet in developing countries: a medium of economic, cultural and political domination. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 4(1), 49-65.

Australian Government. Department of Broadband, Communications and the Digital Economy [Internet source] / Digital Economy: Future Directions (2009). Recovered of http://www.dbcde.gov.au/digital_economy/what_is_the_digital_economy

Chigona, W., Beukes, D., Vally, J., Tanner, M. (2009). Can Mobile Internet Help Alleviate Social Exclusion in Developing Countries? *EJISDC: The Electronic Journal on Information*

Systems in Developing Countries, 36. DOI: 10.1002/j.1681-4835.2009.tb00254.x.

Chinn, M. D., Fairlie, R. W. (2010). ICT Use in the Developing World: An Analysis of Differences in Computer and Internet Penetration. *Review of International Economics*, Blackwell Publishing, 18(1), 153-167.

Committee on statistics Ministry of national economy of Republic of Kazakhstan. Recovered of <http://stat.gov.kz>

Federal State Statistical Service. Recovered of http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/en/main/

Global digital population as of January 2019 (in millions). Recovered of <https://www.statista.com/statistics/617136/digital-population-worldwide/>

Internet Growth Statistics. Recovered of <https://www.internetworldstats.com/emarketing.htm>

Internet World Stats. Recovered of <https://www.internetworldstats.com/>

James, J. (2010). Mechanisms of access to the Internet in rural areas of developing countries. *Telematics and Informatics*, 27(4), 370-376.

National Statistical Committee of the Republic of Belarus. Recovered of <http://www.belstat.gov.by/en/>

QFINANCE Dictionary | Business Dictionary Online | Financial Dictionary Online – QFINANCE [Internet source] / QFinance — The Ultimate Online Financial Resource. Business, economics, banking terms and accounting dictionary and glossary. Recovered of <http://www.qfinance.com/dictionary/digital-economy>.

Review report on clouding technologies and the platform Windows Azure. Recovered of <http://www.oszone.net/18431>.

Sambuli, N. (2016). Challenges and opportunities for advancing Internet access in developing countries while upholding net neutrality. *Journal of Cyber Policy*, 1:1, 61-74. DOI: 10.1080/23738871.2016.1165715

Srikantaiah, T. K., Xiaoying, D. (1998). The Internet and its impact on developing countries: examples from China and India. *Asian Libraries*, 7(9), 199-209. DOI: <https://doi.org/10.1108/10176749810237626>

State Statistics Service of Ukraine. Recovered of <http://www.ukrstat.gov.ua/>

The Impact of the Internet on the Developing Countries. Recovered of <https://cs.stanford.edu/people/eroberts/cs201/projects/2000-01/third-world/index.html>

The Inclusive Internet Index: Bridging digital divides. Recovered of <https://theinclusiveinternet.eiu.com/assets/external/downloads/3i-bridging-digital-divides.pdf>

US Smartphone market. Recovered of <http://geektimes.ru/post/120734>

Wallsten, S. (December 2002). *Regulation and Internet Use in Developing Countries World*. Bank Policy Research Working Paper No. 2979. Recovered of <https://ssrn.com/abstract=366100> or <http://dx.doi.org/10.2139/ssrn.366100>

Wallsten, S. (January 2005). *Economic Development and Cultural Change*, 53(2), 501-523.

Women and the Web. Recovered of <https://www.intel.com/content/dam/www/public/us/en/documents/pdf/women-and-the-web.pdf>

World Internet Development Report. Recovered of 2017 http://www.cac.gov.cn/1122128829_15135790271261n.pdf

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