

ИҚТИСОДИЁТДА ИННОВАЦИЯ ЖУРНАЛИ
ЖУРНАЛ ИННОВАЦИЯ В ЭКОНОМИКЕ
JOURNAL OF INNOVATION IN ECONOMICS

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<http://dx.doi.org/10.26739/2181-9491-2019-2-9>

**THE ROLE AND PLACE OF INFORMATION AND
COMMUNICATION TECHNOLOGIES IN THE MODERN
WORLD ECONOMY**

Abstract: This article analyzes the role of information and communication technologies in the national economy on examples from developed and developing countries. In particular, it was studied the share of high-tech goods in the country's exports and were presented recommendations for the development of this modern phenomenon.

Key words: internationalization, globalization, Internet, technology, high technology.

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**ЗАМОНАВИЙ ЖАҲОН ИҚТИСОДИЁТИДА
ИНФОРМАЦИОН ВА КОММУНИКАЦИОН
ТЕХНОЛОГИЯЛАРНИНГ РОЛИ ВА ЎРНИ**

Аннотация: ушбу мақолада инфорацион ва коммуниацион технологияларнинг мамлакат иқтисодиётидаги ўрни ривожланган ҳамда ривожланаётган мамлакатлар мисолида таҳлил қилинган. Шу жумладан, юқори технологияли товарларнинг мамлакатлар экспортдаги улуши ўрганилган ҳамда ушбу замонавий феномени ривожлантириш бўйича тавсиялар берилган.

Калит сўзлар: интернационализация, глобализация, интернет, технология, юқори технологиялар.

РОЛЬ И МЕСТО ИНФОРМАЦИОННО-КОММУНИКАЦИОННЫХ ТЕХНОЛОГИЙ В СОВРЕМЕННОЙ МИРОВОЙ ЭКОНОМИКЕ

Аннотация: В данной статье анализируется роль информационных и коммуникационных технологий в национальной экономике на примерах развитых и развивающихся стран. В частности, была изучена доля высокотехнологичных товаров в экспорте страны и представлены рекомендации по развитию этого современного феномена.

Ключевые слова: интернационализация, глобализация, интернет, технология, высокие технологии.

For citation: Niyazaliev Jasur. The role and place of information and communication technologies in the modern world economy. 2019, 2 vol., issue 1, pp. 54-59

One of the main trends of the modern world economy has become its internationalization and globalization. Internationalization of the economy means the process of developing sustainable economic interrelations between countries (primarily on the basis of the international division of labor) and the emergence of reproduction beyond the national economy. Globalization is a combination of processes such as cross-border flows of goods, capital, technology, information and intercountry movement of people, territorial and institutional integration of markets, and the attendant emergence of global problems, such as the globalization of scientific and technological progress based on ICT.

Currently, the service sector in the world is 63.6% of gross domestic product (GDP) and 48.8% of employment. The table 1 shows the difference in the service sector in developed and developing countries. Secondly, it is the development and dissemination of ICT, in the formation of which the inventions of the transistor (1947), the integrated circuit (1958), the microprocessor and the computer on the chip (1971), the personal computer (1977), etc. were decisive. These inventions formed the core of a new information and technological paradigm. The Internet was created in the early 1990s, covering all spheres of human life. Thirdly, it is awareness of the limited material resources of the planet (for example, the oil crisis of the early 1970s).

Table 1. SERVICE SECTOR BY GDP, 2016

Developed countries		Developing countries	
Greece	80.9%	Turkey	65.5%
United Kingdom	80.2%	Chile	63.6%
United States	79.7%	Albania	63.5%
France	78.8%	Mexico	63.2%
Belgium	77.6%	Kyrgyzstan	56.2%
Denmark	76.4%	Afghanistan	56.0%
Italy	73.8%	Egypt	52.9%
Iceland	73.7%	Algeria	48.4%
Singapore	73.4%	Serbia	47.6%
Netherlands	73.2%	Vietnam	44.0%
Sweden	71.3%	Azerbaijan	43.3%
Germany	71.1%	Turkmenistan	39.2%
Japan	71.1%	Angola	28.4%

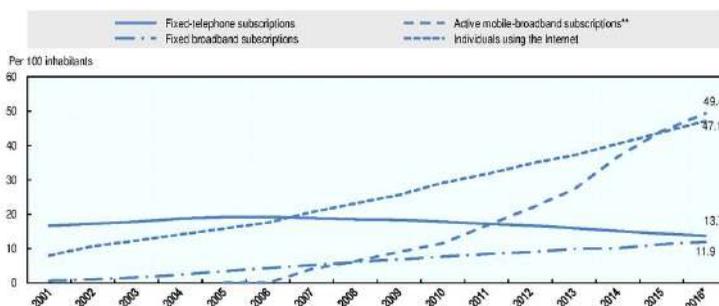
Source: <https://www.cia.gov/library/publications/the-world-factbook/fields/2012.html>

Recent years have been characterised by uninterrupted growth in the spread of ICT infrastructure and in its uptake by citizens, public and private organizations. Between 2000 and 2015, global Internet penetration grew sevenfold, from 6.5% to 43%. The proportion of households with Internet access at home increased from 18% in 2005 to 46% in 2015. The proportion of the global population covered by a 2G mobile-cellular network grew from 58% in 2001 to 95% by the end of 2015. While the global mobile-cellular market is approaching saturation, mobile-broadband uptake continues to grow at high rates in all regions, and mobile broadband remains the most dynamic market segment. It reached a penetration rate of 47% in 2015, 12 times larger than in 2007 (Figure 1).

The data also show a continuous increase in Internet use, with growth in the number of Internet users in all countries and increasing availability of online content, much of which is user-created through social media applications and platforms (Figure 2).

This trend is accompanied by a slowdown in fixed broadband uptake in the developing world, where mobile high-capacity services meet the demand for high-speed Internet access where fixed broadband services are not affordable. In the developed world both fixed and mobile broadband uptake are growing continuously.

Figure 1. GLOBAL ICT DEVELOPMENTS, 2011-16

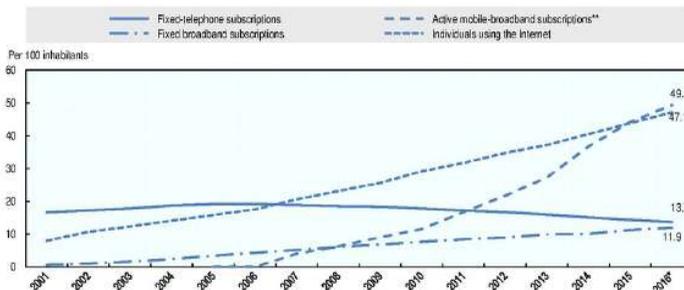


Notes. *2016 data are estimates; **active mobile-broadband subscriptions refer to the sum of active handset-based and computer-based (USB/dongles) mobile-broadband subscriptions to the public Internet that have been used in the last three months. It includes subscriptions to mobile-broadband networks that provide download speeds of at least 256kbits per second (e.g. WCDMA, HSPA, CDMA200 1xEV-DO, WiMAX IEEE 802.16e and LTE).

Source: ITU World Telecommunication (2016), ICT Indicators (database), www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

Most economic statistics refer to OECD countries - they paint a picture of a dynamic and highly economically relevant sector. In 2013 the ICT sector in the OECD accounted for 5.5% of total value added, equivalent to about USD 2.4 trillion (Figure 2). This share varies considerably across countries, ranging from 10.7% of value added in Korea to less than 3% in Iceland and Mexico. Ireland and Japan have the second largest share (7%), followed by Sweden and Hungary (over 6%).

Figure 2. SHARE OF ICT SECTOR IN TOTAL VALUE ADDED, 2013
As a percentage of total value added at current prices

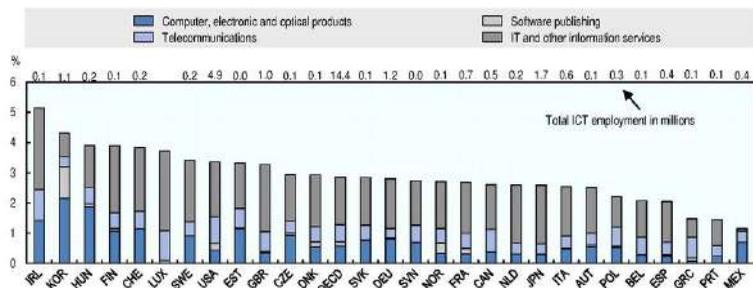


Notes: The ICT sector is defined here as the sum of the following industrial activities classified in the International Standard Industrial Classification, Revision 4 (ISIC rev.4): computer, electronic and optical products (26), software publishing (582), telecommunications (61), computer programming, consultancy and related activities (62), and information service activities (63). For Germany, Iceland, Ireland, Japan, Mexico, Poland, Spain, Sweden, Switzerland and the United Kingdom, data refer to 2012. For Canada and Portugal, data refer to 2011. For Ireland and the United Kingdom, data refer to the United Nation's System of National Account (SNA) 1993 and were extracted in October 2014. For the rest of countries, data refer to SNA 2008. For Canada, Iceland, Ireland, Japan and Mexico, data for software publishing are not available, and are therefore not included in the definition. The figure for Switzerland shows the ICT sector share as defined by the OECD (2011). In this particular case, the share is not totally comparable with the rest of the countries.

Source: OECD (2015), OECD Digital Economy Outlook 2015, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264232440-en>.

In 2013, the ICT sector employed more than 14 million people, accounting for almost 3% of total employment in the OECD (Figure 3). This share ranges from over 4% in Ireland and Korea to less than 2% in Greece, Portugal and Mexico. IT and other information services, together with the telecommunications industry, account for 80% of ICT employment in the OECD area. Between 2001 and 2013, ICT's share in employment decreased in countries with a large ICT sector and increased in countries with a smaller ICT sector. One likely explanation is that the recent financial crisis fostered rationalization in large national ICT sectors and favoured ICT firms in countries with lower labour costs. Belgium and Hungary are the only exceptions to this general trend.

Figure 3. EMPLOYMENT IN THE ICT SECTOR AND SUB-SECTORS, 2013
As a percentage of total employment



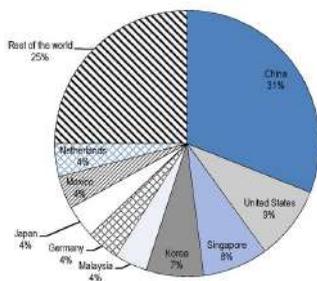
Source: OECD (2015), *OECD Digital Economy Outlook 2015*, OECD Publishing, Paris <http://dx.doi.org/10.1787/9789264232440-en>

Business enterprise expenditures on research and development and the recent increase in ICT-related patents reveal the key role played by the ICT sector in innovation. Broadband markets are expanding, with wireless broadband subscriptions reaching close to 1 billion in the OECD area. These are offsetting a decrease in fixed telephony.

International trade in ICT goods and services underscores the positive developments mentioned above. Global trade in ICT manufacturing, and especially ICT services, continues to grow. Trade data from 2001 to 2013 presented in Figure 5 show continued growth in ICT trade, with exports in ICT services growing faster than exports in ICT goods.

More precisely, world exports of manufactured ICT goods grew by 6% per year between 2001 and 2013, reaching USD 1.6 trillion. Production and exports of ICT goods are increasingly concentrated in a few economies, with China accounting for the lion's share (Figure 6). The shares of Japan and the United States in world exports of ICT goods halved from 2001 to 2013, due in part to offshoring of production. Korea is the only OECD country to have increased its share of the world market for ICT goods over the same period.

Figure 4. THE MAIN EXPORTERS OF ICT GOODS



Source: Adapted from OECD (2015). *OECD Digital Economy Outlook 2015*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264232440-en>.

To a large extent, these trends are due to trade in intermediate inputs (i.e. goods used in production). The dramatic increase in ICT exports from the People's Republic of China, for example, has been matched by a proportional increase in imports of ICT intermediate inputs - notably in its processing zones. Consequently, China's share of ICT goods and services valued added embodied in foreign final demand is significantly lower than its share of gross world exports. In 2011, US exports of ICT goods and services were higher than those of China in value added terms - driven partly by the high presence of US ICT services embodied in final demand products.

In conclusion, it is important to highlight the followings:

1. The Information Society is a modern phenomenon, which means such a state of development of social and, above all, production relations, when a large part of the gross product is created on the basis of the development and use of high technology and information products, that is, through the use of intellectual potential.

2. Information and communication technologies have the most dynamic impact on economic growth in those regions where activities are effective not only for the introduction and use of these goods and services, but also their development and production.

3. World experience shows that for the successful development of the ICT sector, the participation of the state is decisive. The analysis of the peculiarities of the development of the ICT industry in foreign countries has revealed the main factors that are subdivided into direct and indirect ones, which are necessary for the sustainable development of this sector.

4. World trade in ICT goods and services is rapidly increasing. Displacement of world production and export of ICT occurs in the direction of developing countries. The provision of offshore ICT services is a new source of growth in the economies of developing countries, their modernization and diversification. World expenditures on ICT products are increasing. In this case, there is also a strengthening of the markets of developing countries. A further growth of the global ICT market is expected, the demand for products of which will increase in developing countries.

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