



Competitive advantages of US companies in information and communication technologies

Ventajas competitivas de las empresas estadounidenses en tecnologías de información y comunicación

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ABSTRACT:

The article analyzes the state of international and domestic competitiveness of US companies in the field of information and communication technologies (ICT). The authors focus on the fact that Artificial Intelligence is increasingly acquiring a leading role in ensuring national competitiveness. The authors consider the federal and local support of the US national competitiveness, which is related to ensuring national security of the country in the conditions of shaping a multipolar world order.

Keywords: competitiveness; competition; unfair competition; state support

RESUMEN:

El artículo analiza el estado de la competitividad internacional y nacional de las empresas estadounidenses en el campo de las tecnologías de la información y la comunicación. Los autores se centran en el hecho de que la Inteligencia Artificial está adquiriendo cada vez más un papel de liderazgo para garantizar la competitividad nacional. Los autores consideran el apoyo federal y local de la competitividad nacional de los EE. UU., que está relacionado con garantizar la seguridad nacional en las condiciones de un orden mundial multipolar.

Palabras clave: competitividad; competencia; competencia desleal; apoyo estatal

1. Introduction

The competitiveness is the most important condition for the progressive development of a company; it acts as a driver of any economic entity. Today, the competitiveness of companies is associated with the efficiency of management, cost optimization and the introduction of artificial intelligence (AI), the development of new information technologies; at the same time, it reduces real jobs, and therefore determines a more active role of the state, including at the local level (i.e., individual states) in terms of enhancing the policy of creating new jobs and a more constructive integrated approach to this problem. Of importance in modern conditions is the transition of companies to the digitalization of economic activity, which is primarily associated with the introduction of AI.

AI is rapidly introduced in all countries of the world, and the sooner a company moves to its use, the higher competitive advantages it will have not only in the domestic market, but also in foreign ones. The modern world order is being transformed, the tendency of transition to multipolarity is becoming more persistent. And this, in turn, adjusts the regulation of the business environment, leading to an

increase in the role of national-state regulation and more stringent provision of the national interests of the country. In this regard, the current policy of protectionism pursued by the United States (US) responds to the current trend of transition to multipolarity.

The US policy aims to maintain national and international competitiveness, to prevent new competitive players supported by foreign countries from entering the US market. In other words, the leadership of the United States de facto understands that a transition to multi-polarity is inevitable, and in these conditions, it is necessary to activate the role of the state as an institution for effective regulation of economic policy and international cooperation.

For the US, universities, legal responsibility regulation, innovations and cluster system, effective management of companies, and capital markets can be a positive factors that ensure the growth of the US economy competitiveness (Attis, 2008; Bainbridge, 2010; Disparte, 2013; Globerman & Georgopoulos, 2012; Hoban, 2018; The Conference Board, 2009; M. West, 2012).

In the context of the transition of the world community to multipolarity, the study of the national economies' competitiveness proved that multipolarity implies an increase in the role of states in regulating international cooperation (for instance, trade in goods and services, monetary conditions of trade, institutional cooperation etc.) (Perskaya & Eskinarov, 2015). At present, when the US economic strategy undergoes significant changes compared to the period before 2016, the development of the field of information and communication technologies (ICT) is considered as a key direction in ensuring the US national competitiveness in the world economy (Ezell, 2018).

1.1. Literature review

The competitiveness of companies, especially those operating in frontier areas of economy, is a very popular topic of scientific discussion. The basis for discussing the competitiveness of high-tech companies is expressed by Alexandrova (2019), who states that a company's competitiveness is not just an issue of whether it is a high-tech company or not, and this does not depend on its performance efficiency – this is an issue of a technological niche, in which it operates. Another opinion is that ICT improves the company's performance without regard to the sphere it operates (Barba Sanchez, Calderon Milan and Atienza. Sahuquillo, 2018). In fact, we assume that the second opinion is limited to the non-hi-tech sector, and the first applies only to ICT companies.

US companies actively involved in high-tech developments have been the focus of research since the wider penetration of the Internet into everyday life (USITC, 1991). Hannah (2018) researches their competitiveness and history and analyzes the circumstances that allow small and medium-sized enterprises of the Silicon Valley to develop and flourish, becoming technological giants over time. This study was very helpful for our research. We also refer to the analytical materials of leading research companies (Deloitte, 2019) and international organizations (Costa, 2019).

We also should mention researches by Maune (2014) covering some of the issues related to ICT development in US companies, including protecting corporate secrets in technology, and by Braendle, Mozghovyi & Huryina (2018), which allows to state that the ICT sector in the US is not as stable as it seems and needs some reforms in order not to cause negative social consequences and not to lose drivers, given the risk of being overcome by Chinese ICT corporations.

To determine the international and national competitiveness of the national economy, we refer to Porter (1990), Porter & Rivkin (2012a, 2012b). Regarding the US competitiveness, we refer in particular to Attis (2008), Bainbridge (2010), Disparte (2013), Ezell (2018), Globerman & Georgopoulos (2012), Hoban (2018), M. West (2012).

2. Methodology

The major aims of our research are to identify the significant aspects of the US policy in the field of ICT and to indicate the main reasons for the high development of this sector in the US. We adhere to the idea that the ICT competitiveness starts from the state level. Our research is based on the analysis of the regulatory framework and the influence of the actions taken in accordance with these documents on the US companies and the future development of the ICT sector in the United States.

3. Results

The Global Competitiveness Report 2017–2018 states that economic growth in modern conditions should be focused on the tasks of improving the well-being of the population of all countries. It includes issues of fairness for the overwhelming number of people, environmental sustainability, and the development of information and communication technologies as a tool to ensure the implementation of the above-mentioned components (Schwab, 2017).

Competitiveness remains an important indicator reflecting the real state of affairs in the development of human-centered economic progress, creating the resources needed to improve well-being, including improving the quality of education, health and safety. The Global Competitiveness Index (GCI) is based on monitoring of nearly 140 countries. It assesses factors and institutions that can be a determinant of a long-term growth and economic prosperity.

In 2017–2018 the GCI index points to three main problems that are primarily hampering the development of innovation and digitization of national development. These problems are:

- financial vulnerability as a threat to the competitiveness of the economy and its ability to finance innovation and technological new solutions;
- developing economies are ahead of developed countries in the field of innovations, and the problem is to make their innovations more accessible to other countries;
- in the conditions of the Fourth Industrial Revolution, flexibility of the labor market and increased protection of workers for the growth of national competitiveness are needed.

According to the Global Competitiveness Index 2017–2018, Switzerland is in first place, followed by the US. Germany is in 5th place, while such powerful developing economies as China and Russia are in 27th and 38th places, respectively (Table 1).

Table 1
WEF Competitiveness Index

| Place | Economy | Score |
|-------|----------------|-------|
| 1 | Switzerland | 5.86 |
| 2 | USA | 5.85 |
| 3 | Singapore | 5.71 |
| 4 | Netherlands | 5.66 |
| 5 | Germany | 5.65 |
| 6 | Hong Kong | 5.53 |
| 7 | Sweden | 5.52 |
| 8 | UK | 5.51 |
| 9 | Japan | 5.49 |
| 10 | Finland | 5.49 |
| ... | | |
| 26 | Republic Korea | 5.07 |
| 27 | China | 5 |
| 28 | Iceland | 4.99 |
| ... | | |
| 37 | Malta | 4.65 |
| 38 | Russia | 4.64 |
| 39 | Poland | 4.39 |

Source: (Schwab, 2017).

ICT sector, which includes a wide range of goods and services from electronic components up to telecommunication services, will continue to develop dynamically. If in 2018 it was expected that the sector's revenues will grow by 4.4% (in contrast to 4.3% in 2017), in 2019 it is expected to register decelerating growth in line with global trade. In 2019 activity for ICT products is set to be below the 2013-17 average (3% year-over-year in 2019, 4% expected year-over-year in 2020) (Euler Hermes Global, 2019).

The following factors are expected to be the main factors of the growth of incomes of the ICT sector companies.

First, it is the internet trading (Internet of Things) and the development of 5G networks, which will stimulate the growth of the telecommunications industry. Currently, all major telecommunications companies in the world are investing in the deployment of the 5G network (Carpenter, 2019; Jackson, 2019; Kim, 2019).

Secondly, these are block-based technologies, in the development of which significant amounts of IT budgets of companies operating in various fields are invested (Carpenter, 2019).

And the third factor is expected to be AI, which will become part of almost all new releases of IT products, although in many cases it will be a marketing move for a more modern version of an existing product.

According to Euler Hermes Global (2019), key players of the ICT sector are companies from China (the country is #1 exporter, #2 importer and #2 producer), the US (#1 exporter, #3 importer and #1 producer) and Japan (#8 exporter, #4 importer and #3 producer).

As of 1.01.2018, among the 9 largest firms in the field of ICT 5 are US companies, 3 – belong to the Chinese jurisdiction, and 1 – to Russia (U. S. International Trade Commission, 2017).

Since the beginning of the coordination of the activities of Brazil, Russia, India, China, South Africa (the BRICS countries), the "independence" of these countries has increased in the part of defending national interests, including in the field of protection of intellectual property rights is important for the national competitiveness of the US (U. S. International Trade Commission, 2017). Thus, according to the Declaration adopted in Johannesburg in 2018, the BRICS countries are aimed at strengthening the cooperation "in digitalization, industrialization, innovation, inclusiveness and investment, to maximize the opportunities and address the challenges arising from the 4th Industrial Revolution" ("10th BRICS Summit Johannesburg Declaration," 2018). The partnership aims to strengthen comparative advantages, to stimulate economic growth and to promote the economic transformation of the BRICS countries, to strengthen the sustainable potential of industrial production, to create networks of science parks and technology business incubators, and to support small and medium-sized enterprises in high-tech sectors. The initiative to create the Science Parks Network, Technology Business Incubators and Small and Medium Enterprises of the BRICS countries is a promising step in this direction ("10th BRICS Summit Johannesburg Declaration," 2018).

An important risk for ICT progressive development in the world is the unpredictability of receiving income from invested money. At the same time, funds are especially needed at the stages of developing and adopting new technologies, and not always the liquidity of companies carefully controlled by the audit departments can be maintained at the proper level with the need to channel funds into promising innovative developments. Saturation of the world market with ICT products is a significant risk for all potential investors. In this regard, the cases of the emergence of products only partially modernized, but dynamically presented in the market as a new product with some unique properties that did not previously exist in previous versions are very often in the market of ICT.

Network equipment is a highly competitive market with stable expected growth. The development of the Internet network requires equipment for making technological new decisions related to large data and cloud computing. The segment of services is a huge demand caused by the digitalization of the economy, but its growth is constrained by price pressure.

Digitalization plays a special role in the development of ICT. According to U. S. Council for International Business (2019), the private sector is the main source of innovations and technologies, and therefore needs easy access to markets, resources and ICT-talented human resources.

3.1. The internal competitiveness of the United States

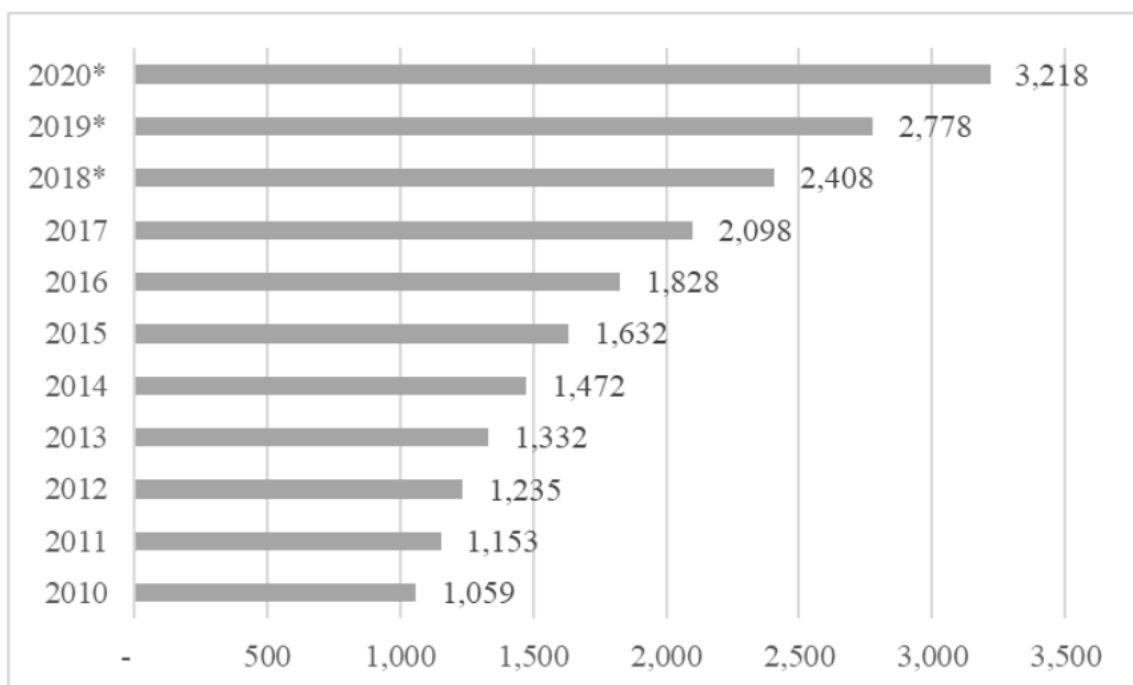
Competition in a market economy is the main driver of the economy, it encourages enterprises to innovate in order to outpace other firms, maintain low prices to attract customers, and pay enough wages not to lose employees.

When enterprises compete for customers, prices fall, and economic growth rises. When enterprises hire employees, competing with each other, there is a rise in wages, and consequently an increase in the standard of living of workers. In this case, non-productive firms are replaced by innovative firms,

the economy becomes more efficient. In other words, in a market economy, competition ensures an efficient allocation of resources. However, in the conditions of a market economy, it can also be the fact that companies striving to provide and maintain their market power can spend significant resources that de facto do not bring any benefit to the national economy, but allow the firm to maintain high profits (Gilbert & Newbery, 1982). According to Shambaugh et al. (2018), over the past few decades there are signs of a decline in the dynamism of development and competition in the economy, including in the field of ICT in the United States. At the same time, Russia, Sweden and Israel are acting as potential competitors, significantly intensifying their activities in the segments that traditionally are the field of activity of American companies.

AI is also an important component of developments in the field of ICT in the United States. The use of robotics is expanding around the world. According to the International Federation of Robotics (IFR, 2018), by 2020, more than 3 million industrial robots are expected to be used in factories around the world. Figure 1 shows that the operational stocks of industrial robots will be tripled compared to 2010.

Figure 1
Global operational stock of industrial robots (2010-2020), thousands of units



*Forecast

Source: compiled by the authors, based on (IFR, 2018).

Robots, autonomous vehicles, virtual reality, AI, machine learning, unmanned aerial vehicles and the Internet of things are rapidly moving forward and transforming enterprises, reducing real employment in the US and other countries. For millions of people working in the areas of food, retail and truck driving, AI replaces jobs.

According to RBC Global Asset Management (2014), the reason for such extended use is that the cost of robots has significantly decreased. Previously, it was believed that "high costs of industrial robots restricted their use to few high-wage industries like the auto industry". However, in recent years, the average cost of robots decreased, and in a number of key industries in Asia, the cost of robots and unit costs for low-wage labor are almost equal. Robots are now a viable alternative to labor.

As an illustration, the activities of a warehouse in California, which implemented robots costing from 30 000 to 40 000 US dollars per unit can be viewed. It is established that robots can "handle 30% to 50% of the items the facility ships each day, in about half the time it takes a human worker" (D. West, 2018).

The US technology companies develop a new financial model that facilitates the introduction of robotics, which will accordingly affect the prospects for employment of low-skilled workers. A robot is expected to be launched, which can perform the tasks currently performed by people with secondary school education or lower at a cost of only \$ 20,000. And this work is going on all over the world. Robots are cheap, efficient and reliable employees and become routine, while they have the knowledge and skills that graduates of secondary school do not have.

At the same time, the efforts of the US and other countries to increase the minimum wage and provide benefits for workers (people) in the form of compensating for the wage gap between the robot and the individual declined even more. Economists Lordan and Neumark (2018) found that "increasing the minimum wage decreases significantly the share of automatable employment held by low-skilled workers and increases the likelihood that low-skilled workers in automatable jobs become nonemployed or employed in worse jobs". The Agency for Advanced Defense Research Projects (US) conducted a competition of robots that could effectively operate in hazardous conditions. They were given eight tasks, including "driving a vehicle, opening a door, operating a portable drill, turning a valve and climbing stairs" (D. West, 2018). The goal was to purchase equipment that could work in damaged nuclear reactors or in natural disasters where human activities are too dangerous. And robots actually prevailed against the use of human labor. Researchers of AI in the US note that automated devices improve the educational process of students too.

Today, the United States is moving from the industrial to the digital economy, and managing the national economy, not taking into account the national interests of the US, to make "America great again" represents a serious barrier to the enhanced development. In particular, the issue of the practice of creating new real jobs, revising the social contract and expanding models of lifelong learning is acute.

In the United States, the problem of ensuring social justice and social partnership is quite acute in the face of increasing replacement of human labor by robotics. In some cases, new technologies clearly exacerbate existing social problems in the US. Financial benefits from technological innovation, as a rule, were received by a small number of people, which significantly increased economic inequality. Instead of weakening the entrenched hierarchy and empowering ordinary people, the wealth generated by the technological revolution increased the income gap and made more difficult the transition to advanced mobility in socially vulnerable groups. At the technological and electronic levels, new products appear that can change society and the economy. With the advent of faster networks, mobile applications and a voice interface, mathematical calculations become ubiquitous and integrated into daily activities.

Robots are just one of the manifestations of new technologies. In combination with AI and the Internet of things, digital innovation accelerates the changes and allows the development of many new products.

At the same time, the evolution of the digital economy is changing business operations and the ways which many people make a living. Outsourcing has become a common phenomenon, and in the economy of joint use there is a greater dependence on temporary employees who do not receive benefits. Expanding the role of robots and automated tools, shifting operations of restaurants, enterprises of the real sector and warehouses affect the demand and quality of work of company managers. Communications and their changes are accelerating, which leads to the closure of traditionally operating enterprises in the United States.

Digital technologies turn computers into higher levels of complexity. Instead of demanding direct personal actions of a person, remote devices automatically control the purity of water and warn people about the problems that have arisen. Monitoring instruments on cars react to vehicles on the neighboring lane, are capable today to take steps to avoid collision. Such automation translates the calculations from the reactive to the active position and puts the robotic machines in conditions of independent actions.

3.2. State regulation to ensure national interests of the United States

The tax policy is one of the tools that can raise the competitiveness of companies in the field of ICT in the United States. Specifically, it is envisaged to protect and promote cross-border trade and investment, in particular based on the predictability of the fiscal environment. Secondly, the US tax authorities strive to ensure the accelerated implementation of the results of projects developed by US companies in conjunction with OECD (Organization for Economic Co-operation and Development) companies in order to minimize the practice of double taxation and to facilitate the process of resolving disputes with European partners based on the application of US rules and regulations.

At the same time, it is proposed to pursue a national policy in the United States, which will be aimed at developing and introducing new information and communication technologies. In particular, it is intended to carry out such state regulation that would act as an "easy touch" meeting the realities of the market, therefore regulatory requirements should be based on the rule of law, but should take into account the priority of the country's tasks of increasing the national competitiveness. In this regard, the need for closer attention to issues of global labor relations and health problems is pointed out.

In particular, in economic studies, the question of the role of subsidizing segments of the economy that are important for national development and US security is considered. For example, when a large firm enters a segment of the economy such as ICT in another state or for export, its impact on the local economy can be significant (Greenstone, Hornbeck, & Moretti, 2010). In these conditions, state and local subsidies can be a powerful incentive for expanding the scope of the company. At the same time, it is noted that state and local politicians have "clear incentives" to attract such enterprises (Shambaugh et al., 2018) and they can use various political instruments, as well as tax incentives and various types of subsidies. This violates the rule of fair competition, which is the basis of the WTO (World Trade Organization), and injustice is reflected, first of all, on the activities of young companies that do not possess the same administrative resource as large firms. But this also affects the fairness of competition in the world market, when subsidized suppliers – large companies that sell on the market – have a de facto certain preference against suppliers that do not have subsidies from the state.

The government incentives in the US (including state and local levels) increased threefold: from 0.5 percent of business value added in 1990 to 1.4 percent in 2015. These incentives were aimed at creating jobs, stimulating investment and Research & Development (tax incentives), and also included property tax abatements and job training subsidies (Shambaugh et al., 2018). At the same time, a number of American researchers believe that subsidizing in general does not negatively affect the competitiveness of US companies at home and abroad, the startups, the creation of jobs or their elimination (Goldschlag & Tabarrok, 2018).

Thus, the US government policy is aimed at gradually increasing the role of state regulation in order to increase the national competitiveness of companies.

With regard to maintaining the level of international competitiveness of the US ICT companies as one of the priority sectors of the national economy, the United States intends to strengthen its influence in the work of the International Labor Organization, increasing its financial provision and setting standards for national governments in implementing labor standards and ensuring compliance with the labor laws of member countries.

This approach seeks to support the initiative of many interested parties to improve working conditions in the process of building global value chains, assuming equal conditions for all interested parties.

Attention is drawn to the intentions of the US Administration regarding the regulation of the Internet system in the United States. For example, George Soros, a liberal billionaire financier (Schoffstall, 2018), has intensified criticism of large technology companies, despite investing millions in companies that he singled out, such as Facebook and Alphabet, Google's parent company. He is looking for ways to de facto resist the influence of large technologies, because "Monopolistic behavior" of such companies, which in their narrowly cartel interests deny liberal principles in the economy and politics, leads to "obstacles of the introduction of innovations" in the economic environment. "The rise and monopolistic behavior of the giant American Internet platform companies is contributing mightily to the US government's impotence", wrote Soros. "These companies have often played an innovative and liberating role. But as Facebook and Google have grown ever more powerful, they have become obstacles to innovation, and have caused a variety of problems of which we are only now beginning to become aware" (Soros, 2018).

Over the past few years, Soros has invested millions not only in Facebook, but also in other projects of the company. Soros, along with a number of other rich liberal donors, provided funding (Daily Mail, 2016) at the end of 2016 for an International Fact-Finding Network, i.e. a group used to verify the creation of "fake news" on Facebook, which were organized by Republicans in connection with their potential bias towards the promotion of liberal ideas. In 2017, Soros began to reduce its participation in technology companies, selling its shares in companies such as Apple and Snap, while also publicly abandoning Facebook (Kharpal, 2017). The Open Society Foundation stated that it is "examining new ways to tackle the growing power of tech giants" and provided a six-figure grant to Open Market Institute, which uses journalism to raise awareness of dangers of monopolization, for "work around web platforms" (McCabe, 2018).

It is assumed that the maintenance of Internet stability in the US will be provided through the rational management of Internet domain control functions and the extension of the application of ICANN (the Internet Corporation for Assigned Names and Numbers) rules to the level of the global community.

In other words, the US will aggressively promote domestic national rules for the regulation of the internet to the entire international community. At the same time, the US will promote the cyber security management model based on risk management, exercising it both at global forums and on the basis of interstate agreements.

The task is to ensure that confidentiality rules do not impede cross-border data flows or innovation, which directly relates to data protection in the US and to the removal of barriers to government

regulation of information transfer in developing economies. Finally, as an incentive for ICT development, it is expected to strengthen interaction with international organizations developing digital trade rules to ensure the interests of members of U. S. Council for International Business, including protection of intellectual property rights of the United States.

3.3. The fairness of international competition in ICT from the position of US companies

One of the most important competitors in the sphere of ICT for the United States is not so much Japan as the growing economy of China, and the planned basis for the development of all spheres of economic activity of China, focused on long-term, is of particular concern in the United States. In the field of ICT, the US President D. Trump de facto defends the interests of approximately 40 American leading companies, including Amazon, Facebook and Google, as well as the interests of a number of leading scientists (The White House, 2018a).

The modern political orientation of the US measures in the field of ICT is reflected in this bulletin, which is actually subordinated to the task of protecting US competitiveness. The threat to American companies in the field of innovation, according to the leadership of the United States, is the Chinese companies. In August 2017, the US foreign trade representative launched the first investigation into the China's acquisition of technology, intellectual property and innovation. The investigation showed that China is using a number of administrative measures of a restrictive nature with regard to the functioning of foreign private property, including requirements for joint ventures and revision of the licensing of activities in China, which encourages or exerts pressure on US companies to transfer their technology to Chinese companies. At the same time, it was established that there was a requirement from China for foreign companies to access new energy vehicles markets for the transfer of basic technologies to joint ventures and the rights to technology for developing and manufacturing vehicles themselves.

According to the US Administration, China is forcing American companies to license technology, transferring rights to use to the Chinese enterprises, which in fact does not meet the practice of market activity. At the same time, introducing "contractual restrictions" on licensing intellectual property and foreign technology, China does not establish any restrictions on contracts between Chinese enterprises. The American side declares that from China there is an unfair practice to support large-scale investments for the acquisition of costly technologies of American companies by Chinese enterprises. For example, a Chinese government-funded fund helped Apex Technology Co (the Chinese investment consortium) to acquire an American computer printer manufacturer that had previously sued Apex for patent infringement.

The US administration is of the view that the government of the People's Republic of China maintains the cyber-attacks on American companies for access to their confidential commercial information, including data of commercial secret. So, in 2014, the US accused five Chinese military hackers of cyber espionage committed against American corporations and labor organization in commercial purposes. In 2017, the Presidential Administration conducted 82 investigations of anti-dumping and countervailing duties. This is 58% more than in 2016. By 2015, the share of the Chinese market in the field of ICT already accounted for 28% of world car production, 41% of global ship production, more than 50% of world refrigerator production, more than 60% of world production of color TVs and more than 80% of world production of air conditioners and computers.

According to analysts of the US White House, China's competitiveness was achieved mainly due to the aggressive actions of the Chinese government, which go beyond global norms and rules or due to "economic aggression" (The White House, 2018b).

The experts indicate the following factors of economic aggression:

- protection of China's domestic market from imports and unfair competition, which is ensured by high tariffs, non-tariff barriers and other regulatory and legal barriers;
- expansion of China's goods and services to the global markets through national industrial policy, financial support for exports and the formation of large state-owned enterprises that can compete with foreign companies in both domestic and global markets. Simultaneously, subsidies are used to finance surplus capacity in China, which affects world prices and drives out foreign competitors from the world market;
- China uses "debt trap" that offer significant financing to developing countries in exchange for encumbrance of their natural resources and access to markets, including bauxite, copper and nickel and rarer products such as beryllium, titanium and rare earth minerals markets;
- dominance of industrial enterprises in China is also provided by preferential loans and tariffs for domestic services (below market ones), as well as weak or poorly observed norms of environmental protection and health and safety.

Economic aggression of China in the field of ICT, according to the White House (2018b), lies in:

- acquisition of key technologies and intellectual property from other countries, including the United States;
- capturing of new high-tech industries (through purchases, mergers and acquisitions), which will contribute to further economic growth, including the development of China's national defense industry. As part of this policy, China seeks access to the latest developments in American technology and intellectual property.

In terms of supporting the competitiveness of American ICT companies and corporations by the government, the US Administration proceeds from the advisability of using predominantly sanctions policy. So, in January 2018, new tariff barriers were announced for the import of large household washing machines and solar batteries. And it is characteristic that the US actively uses the WTO mechanism. In November 2017, the United States won the WTO dispute over the regime of illegal licensing of Indonesia, which restricts exports of US agricultural products. In October 2017, the WTO Compliance Group found that the US tuna labeling rules, designed to inform consumers about safe fishing practices, are in line with WTO standards. In September 2017, the WTO rejected the European Union's claims that Boeing receives prohibited subsidies.

President Trump proposed to introduce 25% additional import tariffs for products whose competitiveness is supported by China's unfair industrial policy. In particular, these tariffs should apply to products of aerospace, information and communication technologies and apparatus.

Thus, US policy in the form of sanctions against China is a forced measure, according to the White House, aimed at increasing the national competitiveness of the United States, including in international ICT markets. For the Trump Administration, the question is to help domestic companies to prevent increased competition from China within the framework of the "global economic battle for technological supremacy" (Jing & Dai, 2018). The development of AI or technology that performs tasks specific to the human intellect (understanding the language and recognizing objects and sounds) is one of the priorities of China's national strategy since July 2017, but the US Administration considers that these are the areas of US national interest and security.

The Commission of the White House on AI, whose task is to stimulate the practical application of technology for cars without a driver and in smartphones when recognizing the voice of people (Order a meeting, visiting salons, etc.), emphasizes that China in the field of AI and a number of other technological areas is the most real competitor of US companies.

The Ministry of Science and Technology of China financed eight research projects related to AI in the last six months to the amount of 2.73 billion Yuan (430 million US dollars) from the central state budget. In addition to AI, these projects cover topics from large data and high-performance computing to more leading areas, such as human organs on chips.

The Chinese Academy of Sciences (CAS) (consisting of more than 300 laboratories and four national research centers) received more than 2.7 billion Yuan in 2017 for 11 fundamental scientific projects, although not publicly announced which of them are directly related to AI.

The Chinese government has set an ambitious goal to overtake the United States' world leadership in the field of AI by 2030. According to the detailed "roadmap" issued in July 2017, the government indicated that by 2020 the scope of AI will reach 1 trillion Yuan, and by 2025 – 5 trillion Yuan, respectively, with the widespread introduction of AI into intellectual production, into smart healthcare, into smart cities, into smart agriculture and national defense infrastructure (Jing, 2018b). In other words, according to the road map, by 2030, China will lead innovation in the world and build a smart economy and a "smart society". The amount of funds, determined as the basis for the dominance of AI, is estimated at 1 trillion Yuan, and when used by related industries at more than 10 trillion Yuan. At the same time, China focuses on the development of AI in the private sector (Jing, 2018a).

In November 2017, the Ministry of Science and Technology of China ranked four of its largest technology companies – Baidu, Alibaba Group, Tencent Holdings and iFlyTek – as the so-called national leaders who should lead the development of innovations in the field of AI for cars, smart cities, optical computers for medical diagnosis and voice recognition of tasks. It is expected that the influence of the government on large companies of the country will contribute to the initiative of smaller players in the field of AI. The Chinese government has stepped up financing of AI projects not only through the "state budget", but also the budgets and the fund of local authorities and state companies. According to the report of Oxford University published in March 2018, the Chinese government invested more than 1 billion dollars into domestic "start-ups", and a significant part of investments is directed to healthcare and AI as priority areas of ICT (Jing & Dai, 2018).

As the technological revolution progresses and its consequences are felt by all segments of the population (but to varying degrees), the management of transitional processes and digital opportunities in the US national economy requires coordinated efforts and taking into account the diversity of social challenges that undermine the national stability of development and social sustainability. At the same time, a special role is played by the interconnection of all types of resources in the implementation of public-private partnership programs in the field of ICT. In the

coming years, computing devices will become more complex, which will have a huge impact on society, business and government. And this transition should be accompanied by adequate state regulation and management, so that the transition period would not become a crisis, with deep social instability, but, according to American researchers, a time of peace, prosperity and pleasant leisure for US citizens.

4. Conclusions

The United States is a country that has a sufficiently high competitiveness in the field of ICT and conducts nationally oriented economic and technical policies to ensure the existing information and technology potential of the US economy.

Developments in the field of ICT, and in particular of AI, on the one hand, contribute to the replacement of human labor by artificial intelligence, reducing real workplaces. On the other hand, they form the potential for the emergence of new jobs, fundamentally different from the existing jobs. In turn, this requires the US government (including state policy) to be more attentive to the process of retraining the emancipated workforce, to stimulate employment of all segments of the population, living in the US and losing their traditional jobs.

The current US policy of protectionism is aimed at maintaining the national and international competitiveness of the United States, to prevent new, more competitive players from entering the world ICT market, not at the level of individual companies or firms, but at the state level. In other words, the US government de facto understands that the transition to multipolarity is inevitable, and in these conditions, it is necessary to activate the role of the state as an institution for the effective regulation of economic policy and international cooperation.

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