



Journal Homepage: - [www.journalijar.com](http://www.journalijar.com)

## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/15212

DOI URL: <http://dx.doi.org/10.21474/IJAR01/15212>



### RESEARCH ARTICLE

#### REGULATION OF THE INTERNATIONAL LABOR DIVISION IN THE DIGITAL AGE

Ishmetova Shakhida

#### Manuscript Info

##### Manuscript History

Received: 15 June 2022

Final Accepted: 17 July 2022

Published: August 2022

##### Key words:-

Digitalization, Robotization, Artificial Intelligence, International Division Of Labor

#### Abstract

The article analyzes the specifics of the international division of labor, taking into account digitalization and the impact of new technologies such as robotics and artificial intelligence on the international division of labor. In conclusion, the author emphasizes that within the framework of the legal regulation of the international division of labor, it becomes important to take into account the impact of artificial intelligence, robotization and technological development in general.

Copy Right, IJAR, 2022., All rights reserved.

#### Introduction:-

Information technologies have led to the transition to an open economy on a global scale and significant institutional changes in both developed and developing countries. Along with industrialization, the processes of de-industrialization and reindustrialization began to develop.<sup>1</sup>

In just a few decades, information and communication technologies (ICT) have penetrated into all spheres of society, and information has become the main production resource at the post-industrial stage of development, similarly to energy and raw materials - at the agricultural and industrial stages, respectively.<sup>2</sup>

One of the most important, dynamic and high-tech sectors of the economy has become the information and communication technology industry. Its intensive development caused structural shifts in the entire world economy. Thus, the electronics industry, which has become the most knowledge-intensive industry and consists of information and communication products by three-fifths, has overtaken the oil, chemical and automotive industries.<sup>3</sup>

Thus, the availability and development of information technology has become a priority for the state, because economic security and development of the country depend on them. At the moment, a very high level of human development and the development of the institutional environment in the United States and Western European countries allow them to maintain a leading position in the export of information services. Countries with developing

<sup>1</sup>Tolstobrova N.A., Osipova M.Yu., Tolstobrov D.A. Establishing the dependence of "supercycles" with the problems of development of the domestic socio-economic model // Bulletin of the Perm University. Ser. "Economy". - 2015. - No. 3 (26). - P. 6-13.

<sup>2</sup>Nagirnaya A.V. Transnationalization and transformation of the international division of labor in the information age // Economic relations. - 2018. - Volume 8. - No. 3. - P. 487-498.

<sup>3</sup>Maksakovskiy V.P. Geographical picture of the world. / Book. 1. - M.: Bustard, 2008. - 495 p.

and transitional economies, due to less access to channels and information networks than developed countries, are forced to import these services, which leads to a negative value of the balance of trade in services for these states<sup>4</sup>.

### **Discussion:-**

Information and communication technologies, having formed a single information space and global networks, have affected all spheres of public life and have become the cause of its transformation. Thus, there are shifts in the structure of the employed – the share of those employed in the service sector is growing. The importance of the qualitative characteristics of labor and high qualifications is growing. Accordingly, the importance of the education system is growing, and the need for education throughout life is being formed. In the structure of productive forces, scientific and technological potential has moved to the forefront, and traditional factors such as the size of the territory and population, geographical location, climate and mineral reserves are receding into the background. The economy becomes innovative, innovations take the form of cascades, and the speed of their dissemination is growing<sup>5</sup>.

The world is being transformed into a single public area for the exchange of information and cooperation, which is expressed in electronization, digitalization and convergence of means of processing and transmitting information, the mass distribution of personal computers and mobile telecommunications devices, as well as the comprehensive penetration of the Internet as a universal information and communication platform.<sup>6</sup>

Global informatization, among other things, affects the territorial division of labor and, in particular, the international division of labor. Natural conditions and a favorable geographical position are increasingly fading into the background, and numerous factors of information technology and humanistic content come to the fore<sup>7</sup>.

The following main areas of fundamental changes occurring in MRI as a result of the development of telecommunications and the spread of information technologies can be distinguished.

1. Informatization leads to the emergence of a new MRI model based on information technology and communications. E-commerce is growing rapidly. The Internet is becoming a significant tool for the development of the latest technologies for doing business and capital accumulation. There is a transformation of the structure and principles of doing business and the entire economy.
2. Virtualization or dematerialization of world economic relations - that is, the replacement of material material products with their images (non-material analogues). This is expressed not only in the growth of the service sector, but also, for example, in the replacement of international exchanges of a material product with information about the technology of their production, in the transformation of the function of money (virtual banks and electronic money contribute to the optimization of economic flows), etc.<sup>8</sup>
3. In the international division of labor, there is an increase in the role of high-tech and knowledge-intensive industries, an increase in the scale of international exchange and cooperation with a focus on highly specialized and small-scale products, and the growth of the role of small and medium-sized businesses<sup>9</sup>.

---

<sup>4</sup>Shakirov R.K., Tolstobrova N.A. Identification of trends in the development of the international division of labor based on the assessment of the participation of G-20 countries in trade in services // *Fundamental Research*. - 2015. - No. 12-5. – S. 1071-1077

<sup>5</sup>Nagirnaya A.V. Transformation of the international division of labor in the context of the development of the global information society // *Problems of the development of sciences about the Earth in the youth sciences: Proceedings of the international scientific conference*. Kiev, 2008.

<sup>6</sup>Gemavat P. *World 3.0. Global integration without barriers*. - M.: "Alpina. Publisher", 2013. - 415 p.; Nagirnaya A.V. Transnationalization and transformation of the international division of labor in the information age // *Economic relations*. - 2018. - Volume 8. - No. 3. - P. 487-498.

<sup>7</sup>Mironenko N.S. Introduction to the geography of the world economy: International division of labor. / *Proc. Handbook for university students*. - M.: Aspect Press, 2006. - 238 p.

<sup>8</sup>Mironenko N.S. Introduction to the geography of the world economy: International division of labor. / *Proc. Handbook for university students*. - M.: Aspect Press, 2006. - 238 p.

<sup>9</sup>Nagirnaya A.V. Transformation of the international division of labor in the context of the development of the global information society // *Problems of the development of sciences about the Earth in the youth sciences: Proceedings of the international scientific conference*. Kiev, 2008.

4. The macro-territorial structure of the international division of labor is being transformed: the advanced countries of the world economy are making a gradual transition from material production to the production of an information product, and material production is concentrated mainly in developing countries.

Robotics and artificial intelligence can also be singled out as a special category, which every year are increasingly influencing the international division of labor.

Robotization, as a trend, in the last 10 years gives rise to new areas of robotic and information technologies. Among them are transhuman technologies, nano-implant technologies, robotic tracking methods, advanced scalar technologies, transformation of human habitat into a cyber environment, machine control over thought, genetic engineering of special neurons, intelligent systems, artificial intelligence, bots as a mass electronic mind, etc. .d. Robotization itself is developing at the intersection of fundamental sciences and knowledge: neuroengineering, machines of consciousness and will, neurotechnologies, etc. It can be assumed that in 15 years the era of hybridization and cyborgization will come<sup>10</sup>.

Businesses are very interested in maximizing profits through cost reduction provided by robots. The new obligations that have arisen due to robotization are shifted to the government. It, of course, is trying through the mechanisms of private public partnership to fulfill these requirements for the population interested in the consumption of transformable services. This conflict of interest creates a new environment. The fifth and sixth technological modes have set new conditions for the economy for markets and goods that can satisfy the transformed human needs. One of the most important criteria for robots (substitutes for human labor) is the ability to be autonomous, self-learning, exist in the format of mega-networks of robots and people.<sup>11</sup>

There are various definitions of the term "robotics". Robotization is the development of production automation based on the use of industrial robots in such production processes, the automation of which by other means is impractical. Robotization is the displacement of a person by mechanisms that function autonomously in production, the replacement of human labor with machine labor on the condition that machine labor will be more profitable and of better quality. Also, robotization is a phenomenon that makes it possible to deal with production defects, which improves the quality and quantity of goods and, in the long term, leads to a decrease in their price. At the same time, the company relieves itself of a constant burden in the form of wages to the employee, and further reduces the staff to the required minimum. This contributes to the fact that the manufactured product becomes more affordable.<sup>12</sup>

Stimulating the growth of public interest in robotics and automation is, on the one hand, a passion for the potential of these technologies to simplify our lives, and on the other hand, fear of the impact of automation, including robotics, on jobs. These fears are linked to broader geopolitical and social shifts driven by issues such as trade policy and immigration, which generally contribute to a sense of insecurity about the employment prospects of current and future generations. Consequently, many experts focus on the potential negative outcomes of automation. However, the real positive contribution of automation and robotics to productivity, competitiveness and job creation should not be underestimated.<sup>13</sup>

Robotization of production directly affects the economy of the company. Based on this, there are the following reasons to attract investments in the introduction of robots in the enterprise: increase in production volumes, improve the quality of products, save production space, reduce staff turnover, increase technological flexibility<sup>14</sup>. Robotics and technology are changing the world for the better, but they don't create jobs in large numbers. On the

---

<sup>10</sup>Kruglov D.V., Vorotynskaya A.M., Pozdeeva E.A. Influence of robotization on the labor market // Izvestia of St. Petersburg State University of Economics. -2017. -№6 (108)

<sup>11</sup>Bondareva N.N. State and prospects for the development of robotics in the world. WORLD (Modernization. Innovations. Development). 2016. V. 7. No. 3. S. 49-57.

<sup>12</sup>Akulov D.G. Influence of robotization on the international division of labor / D.G. Akulov // Bulletin of international scientists. - 2020. - No. 1(11). - S. 173-182.

<sup>13</sup>Krugloe D.V., Vorotynskaya A.M., Pozdeeva E.A. Influence of robotization on the labor market // Izvestia of St. Petersburg State University of Economics. - 2017. - No. 6 (108) [Electronic resource]. URL: <https://cyberleninka.ru/article/n/vliyanie-robotizatsii-na-rynok-truda>

<sup>14</sup>Muravyov A.V. Ten reasons to invest in robotization of production. [Electronic resource]. Access mode: <http://www.deltasvar.ru/biblioteka/novosti/188-10-prichin-investirovat-v-robotizacziyu-proizvodstva>

contrary, the modern economy of developed countries is gradually putting more and more people out of work. Many researchers are wondering how robots and robotics will affect the labor market. There is a point of view that the transition to robotics will lead to an increase in unemployment.

In the international division of labor, both short-term and long-term prospects can be distinguished.

In the short term, with the introduction of robotization, the quality of the goods increases and its price decreases, thus, the country receives the largest sales market and economic growth.

In the long term, robotization will lead to the development in countries of those industries in which they did not specialize, due to the release of resource pressure and the emergence of opportunities for innovation.

The process of robotization itself is inevitable, natural, like any development. The issue of social changes that robotization will entail is not a stopping factor, but a reason not only for training new personnel, but also for retraining existing workers. It is the timely participation of the state, the initiation of training programs and retraining of employees that will guarantee the minimization of the risks of social unrest and other expressions of dissatisfaction with this process.

On a national scale and directly in the international division of labor, robotization will accelerate the pace of development and increase not only production, but also the improvement of all related areas. An exceptionally positive effect will give a qualitative breakthrough in the development of any field precisely in connection with the maximum exclusion of the human factor.

Research shows that robots increase productivity by performing tasks more efficiently and better than humans, which also directly translates into higher annual GDP growth and labor productivity.<sup>15</sup>

Machine learning and the use of robots in business are driving the trend. For example, the Spanish clothing store Zara has more than 5,000 stores in 77 countries that use digital technologies to manage inventory in order to distribute according to customer preferences. As a result, they found an 18% increase in net sales.<sup>16</sup> In America, Domino has launched tracking technology for takeaway delivery, where customers can track their orders. This change increased their bottom line by 11%.<sup>17</sup>

In studies from the Center for Economic Performance at the London School of Economics, Georg Gratz and Guy Michaels describe the negative effects that would occur if machines were to completely replace jobs. This will lead to lower wages for low-skilled workers and higher returns to capital owners. But even these scholars agree that the link between automation and wage inequality is the probability of a downward spiral that is not given.<sup>18</sup>

Meanwhile, there is plenty of evidence that automation does not lead to the replacement of human work, but rather to the redistribution of both jobs and tasks, in which robots supplement human labor by performing routine or dangerous tasks. This, in turn, threatens the highly skilled workforce in sectors where automation has replaced labor, but may also create new low-skilled jobs in other sectors due to side effects. Some economists are confident that computer automation will not lead to a net loss of jobs, but this implies a significant shift of jobs from some occupations to others.<sup>19</sup>

---

<sup>15</sup>Graetz, Georg and Michaels, Guy, Robots at Work. IZA Discussion Paper No. 8938 [Electronic resource]. URL: <https://poseidon01.ssrn.com/delivery.php?ID=334104...101&EXT=pdf>

<sup>16</sup>Nazir, Safder. "Digital Economy: The Impact On National Transformation And Businesses". Huawei, 2021, <https://e.huawei.com/mx/eblog/industries/insights/2021/digital-economy-national-businesses>.

<sup>17</sup>Periyasamy, Revanth. "Digital Transformation Examples To Inspire You Today". Apty, 2022, <https://www.apty.io/blog/digital-transformation-examples>.

<sup>18</sup>Arntz M., Gregory T., Zierahn U. (2016) The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis. OECD Social, Employment and Migration Working Paper No. 189. Paris: OECD [Electronic resource]. URL: <http://dx.doi.org/10.1787/5jlz9h56dvq7-en>

<sup>19</sup>McKinsey Global Institute: A Future That Works: Automation, Employment and Productivity, 2017 [Electronic resource]. URL: <https://www.mckinsey.com/mgi/overview#0>

It should be noted that automation does replace some activities. However, automation also complements the workforce, increasing output, which leads to higher demand for labor and changes in the supply of labor.

Robots and automation will increasingly shape how the labor market develops in the future. In this aspect, it is important to determine the boundaries of the introduction of robotics, develop the legal framework and regulation of the introduction and use of robotics with the regulation of areas, as well as develop and adopt an international convention in the field of regulation of robotics and its role in the international division of labor.

In addition to robotics, advances in artificial intelligence also make it difficult to determine the boundaries or trajectories of the development of automation tasks, although at present the level of predictability in physical or technological tasks is a fundamental component of the ability to automate.

The term "artificial intelligence" is used to refer to a large area of scientific and applied research. This name, which is attached to this area, is more likely to be associated with intelligent robots or thinking computers, the images of which appear in science fiction works.<sup>20</sup>

As a rule, artificial intelligence is understood as human-created and/or technically/mechanically produced, self-learning and/or self-developing technologies based on Big Data analysis.<sup>21</sup>

Continuing the logic of reasoning by N. Bondareva, who is studying the problem of robotization and increasing the influence of artificial intelligence in the economy, A. Zotin argues that "if the economy does not turn off the current path, perhaps we will face super-capitalism with super-inequality. The share of labor income will tend to zero, and the share of income from capital, on the contrary, will approach 100%. Robots will do all the work, and most people will have to sit on benefits."<sup>22</sup>

Artificial intelligence technologies and robotization are seriously changing the economy, while ambiguously affecting both the labor market and the market as a whole. On the one hand, robotization creates the conditions for the formation of so-called supercapitalism, which will not only reduce the number of jobs, but also wash out the middle class in most cases to lower income strata as a result of the release of not only low-skilled, but also such jobs that require fairly high competencies. Deindustrialization of third world countries is possible and, as a result, a huge number of people will lose their jobs in the textile, light, and chemical industries. The mass release of the labor force will require its retraining and employment in the service sector of the population with high incomes, owning capital<sup>23</sup>.

The scientific and technological development that accompanies the spread and increasing introduction of the possibilities of artificial intelligence into practical life requires the improvement of all levels of the education system, the emergence of new branches of knowledge with a more in-depth study of issues related to artificial intelligence, quantum processes, gravitational interaction of objects, spatial temporary paradoxes. Currently, new professions are emerging that replace some of the professions that have become obsolete. To train people for new professions, it is necessary to make changes in the system of vocational and additional education. For the development of areas of study in the field of artificial intelligence and robotics in educational institutions, it is necessary to improve the quality of training,

### **Conclusion:-**

Thus, within the framework of the legal regulation of the international division of labor, it is important to take into account the impact of artificial intelligence. Legislation must take into account the legal personality and boundaries

---

<sup>20</sup>Rustambekov I., Gulyamov S. Artificial intelligence - a modern requirement in the development of society and the state // Pravda vostoka. 2021/3/2. No. 43.

<sup>21</sup>Gulyamov S., Rustambekov I., Narziev O., Khudaibergenov B. Draft concept of the Republic of Uzbekistan in the field of development of artificial intelligence for 2021-2030 // Yurisprudensiya. 2021. №1. pp.106-121.

<sup>22</sup>Zotin A. Robo-ownership system. How we will live under supercapitalism [Electronic resource] // Kommersant. 11/04/2017. Access mode: <https://www.kommersant.ru/doc/3455179>

<sup>23</sup>Akyulov R. I., Skovpen A. A. The role of artificial intelligence in the transformation of the modern labor market // Discussion. 2019. No. 3 (94).

of artificial intelligence. It is also necessary to provide for the obligatory introduction of training in the field of artificial intelligence and robotics in the concept of education and legislation.

An analysis of the changes taking place in the information age in the international division of labor made it possible to identify a complex of transformational processes, the most important of which are the following: dematerialization of the economy and world economic relations, transnationalization, transformation of the macro-territorial structure of the international division of labor, as well as an increase in the scale of international exchange, cooperation and specialization, the growing role of small and medium-sized businesses, etc.

### References:-

1. Arntz M., Gregory T., Zierahn U. (2016) The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis. OECD Social, Employment and Migration Working Paper № 189. Paris: OECD. URL: <http://dx.doi.org/10.1787/5jlz9h56dvq7-en>
2. Акьюлов Р. И., Скопень А. А. Роль искусственного интеллекта трансформации современного рынка труда // Дискуссия. 2019. №3 (94).
3. Акулов Д. Г. Влияние роботизации на международное разделение труда / Д. Г. Акулов // Вестник ученых-международников. – 2020. – № 1(11). – С. 173-182.
4. Бондарева Н.Н. Состояние и перспективы развития роботизации в мире. МИР (Модернизация. Инновации. Развитие). 2016. Т. 7. № 3. С. 49-57.
5. Гулямов С., Рустамбеков И., Нарзиев О., Худайбергенов Б. Проект концепции Республики Узбекистан в области развития искусственного интеллекта на 2021-2030 годы // Yurisprudensiya. 2021. №1. С.106-121.
6. Гемават П. Мир 3.0. Глобальная интеграция без барьеров. - М.: «Альпина. Паблишер», 2013. – 415 с.
7. Graetz, Georgand Michaels, Guy, Robots at Work. IZA Discussion Paper No. 8938. URL: <https://poseidon01.ssrn.com/delivery.php?ID=334104...101&EXT=pdf>
8. Зотин А. Рабовладельческий строй. Как мы будем жить при суперкапитализме // Коммерсантъ. 04.11.2017. Режим доступа: <https://www.kommersant.ru/doc/3455179>
9. Круглов Д.В., Воротынская А.М., Поздеева Е.А. Влияние роботизации на рынок труда// Известия СПбГЭУ. – 2017. – №6 (108)
10. Максаковский В.П. Географическая картина мира. / Кн. 1. - М.: Дрофа, 2008. – 495 с.
11. Мироненко Н.С. Введение в географию мирового хозяйства: Международное разделение труда. / Учеб. Пособие для студентов вузов. - М.: Аспект Пресс, 2006. – 238 с.
12. Муравьев А.В. Десять причин инвестировать в роботизацию производства. [Электронный ресурс]. Режим доступа: <http://www.deltasvar.ru/biblioteka/novosti/188-10-prichin-investirovat-v-robotizacziyu-proizvodstva>
13. McKinsey Global Institute: A Future That Works: Automation, Employment and Productivity, 2017. URL: <https://www.mckinsey.com/mgi/overview#0>
14. Нагирная А.В. Трансформация международного разделения труда в условиях развития глобального информационного общества // Проблемы развития наук про Землю в баченні молодих науковців: Матеріали міжнародної наукової конференції. Київ, 2008.
15. Нагирная А.В. Транснационализация и трансформация международного разделения труда в условиях информационной эпохи // Экономические отношения. – 2018. – Том 8. – № 3. – С. 487-498.
16. Nazir, Safder. "Digital Economy: The Impact On National Transformation And Businesses". Huawei, 2021, <https://e.huawei.com/mx/eblog/industries/insights/2021/digital-economy-national-businesses>.
17. Periyasamy, Revanth. "Digital Transformation Examples To Inspire You Today". Apty, 2022, <https://www.apty.io/blog/digital-transformation-examples>.
18. Рустамбеков И., Гулямов С. Искусственный интеллект – современное требование в развитии общества и государства // Правда востока. 2021/3/2. №43.
19. Толстоброва Н.А., Осипова М.Ю., Толстобров Д.А. Установление зависимости «суперциклов» с проблемами развития отечественной социально-экономической модели // Вестник Пермского университета. Сер. «Экономика». – 2015. – № 3(26). – С. 6–13.
20. Шакиров Р.К., Толстоброва Н.А. Определение тенденций в развитии международного разделения труда на основе оценки участия стран G-20 в торговле услугами // Фундаментальные исследования. – 2015. – № 12-5. – С. 1071-1077.