Article

The Problem of Employment in the Digital Economy in the Government of the Russian Federation

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Abstract: The purpose of the study was to assess the impact of the transition to a digital economy on the workforce. To achieve this goal, such methods as analysis, synthesis, comparison and modeling were used. Results: digital technologies are confidently entering the daily life of society and begin to displace living people from jobs, respectively, the question of employment of the released labor force is exacerbated, but there is no strategy for the adaptation of the unemployed today. The active and passive measures proposed by scientists and politicians to combat technological unemployment are ineffective and cannot provide for the livelihood of the huge number of released workers, the critical importance of which can lead to economic collapse. It turns out that the question of displacement of living people from jobs by it objects remains open. There is a fundamentally new question about the relationship between the digital and social economy. The calculations showed that the increase in unemployment by 1% leads to a decrease in GDP (Gross domestic product) by 0.54%. The results obtained in the course of the study can be used in further studies of structural (technological) unemployment and labor market problems in the digital economy.

Keywords: digital economy, digitalization, structural unemployment, technological unemployment, employment, labor market, information technology

1. Introduction

The stated direction of the government of the Russian Federation to create the necessary conditions for the transition to a digital economy will undoubtedly increase the country's competitiveness on a global scale, but at the same time, the issue of the impact of the introduction of information technology is acute. Socio-economic processes and phenomena have not yet been fully theoretically studied. Of particular concern is the constant increase in structural unemployment caused by scientific and technological progress and the replacement of efficient human labor with robots, machines, programs and other IT objects. In this regard, we believe that the topic we are working on is relevant and requires deep scientific understanding.

2. Materials and Methods

To achieve this goal, such methods as analysis, synthesis, comparison and modeling were used. If we turn to the scientific literature on structural (technological) unemployment, we will find a number of authors who dealt with this problem, first of all: A.B. Berberov [1], L.M.Gainanova [3], Yu.I. Draizis [4], S.P. Zemtsov [6], R.I. Kapelyushnikov [7] [8], V.K. Karpov [9], D.S. Medovnikov. The listed authors estimated the number of unemployed people who were directly or indirectly formed under the influence of scientific and technological progress and digital technologies. More global consequences for society and the economy are considered in the works of such scientists as E. Brynjolfsson, E. McAfee [2], M. Ford and K. Schwab. Based on research by selected authors, we assess the impact of digitalization on the Russian labor market, consider its characteristics and development trends.

3. Results and Discussion

In solving the problem of structural unemployment caused by the introduction of new technologies in the Russian Federation and throughout the world, it is necessary to study history and show precedents, the most important of which can be called the industrial revolution in England, which led to the industrial revolution came with the liberation of a large number of spinning workers, one can even say that "weaver" ceased to exist as a profession.

Undoubtedly, the expected changes in the economy will have the same consequences. Thus, M. Ford notes that "a decrease in demand for goods and services against the backdrop of mass unemployment, a sharp increase in inequality and, ultimately, a decrease in the purchasing power of consumers, without which further economic growth cannot be ensured" [10]. It is known that in the coming era of large-scale digitalization, people will compete with IT objects (robots, machines, software systems, artificial intelligence (AI), etc.) and will inevitably lose, which will lead to mass unemployment and subsequent social problems - economic consequences difficult to assess.

Let's see in which areas and sectors of Russian society the first signs of "pressure" from information technology appeared.

The digital economy is developing on all "fronts": in agriculture, where working conditions are quite "difficult", the company is already introducing unmanned tractors (for example, a tractor from New Holland) and combines (for example, a grain harvester from Rostselmash), which will increase the production cycle from 8-10 hours to 24 hours, since unmanned agricultural machines will not get tired and will not be limited to working during the day.

All global automakers are actively participating in the race to create unmanned vehicles; a legislative framework for this is being developed; there are even projects to ban human driving in cities by 2025. The domestic auto industry is also trying to solve this problem, and there is already a KAMAZ prototype. The introduction of unmanned vehicles into everyday life will lead to the displacement of up to 100% of workers in the following professions:

- "truck driver";
- driver engaged in the transportation of goods within the city;

- Bus driver;
- taxi driver;
- driver of agricultural machinery;
- heavy truck driver.

As stated in an article on this topic on the Guardian portal: "...a number of analysts estimate that due to the universal transition to the use of driverless truck convoys, the global transport industry will save about $168 billion annually, of which $35 billion will be more economical. Such a positive effect will be associated with a sharp reduction in the number of accidents on the roads and will result from a significant reduction in the number of workers, about 70 billion" [12].

The obvious benefits from the introduction of unmanned vehicles from many IT companies developing hardware and software in this area indicate that freight and passenger transport will be one of the first to feel the pressure of scientific and technological progress, and subsequently drivers will join the market labor.

Unfortunately, the transition to the digital age affects not only blue-collar and intellectual professions, but also possible art (for example, a system created by researchers at Rutgers University in New Jersey and the artificial intelligence laboratory in Los Angeles presented its own artistic style), there are projects on training artificial intelligence to create prose, in particular, the project "Botnik and the World from the Brothers Grimm" based on the works "They created (wrote) a fairy tale called "The Princess and the Fox." Of course, these "works of art" are far from perfect, and at this stage of development, technology cannot compete with the products of human consciousness, but given the rapid development of this area, it can be predicted that it will be successfully implemented in the near future.

Digitalization in the political field is the analysis of political texts and phono semantic assessment programs, as well as the creation of political texts, for example, in the context of the interests of republican or democratic parties, in the context of a positive or negative discussion of keywords [5].

If you look at the military from the point of view of hired workers, they also argue that digitalization, artificiality and robotization will affect them in all areas. Of course, it is difficult to assess at what stage the development of combat robots capable of working together with an operator is, but there are already working samples; as an example, we can name the mobile robotic complex of the Izhevsk Radio Communications.

The same trend has developed in the financial sector, where you can now apply for and pay for insurance on the website of any insurance company. In banking, transactions are increasingly being carried out online, so in Russia, for example, Tinkoff Bank, which has a banking license, can operate freely online, without having back offices and retaining employees with respect. It seems that Sberbank is striving for this, which is actively promoting the Sberbank-Online platform and regularly reducing its staff (it is planned to reduce the staff by 2/3).

Trends in the higher education system show a division of education into offline (for a limited number of consumers) and online (for a wide range of consumers). The transition

to distance (online) forms of learning will lead in the near future to the introduction of audio lectures and electronic tests, which will make the presence of a teacher in classes unnecessary, as a result of which their number will sharply decrease. The expected level of layoffs of workers is up to 90%; for your information, if the number of professors and teachers in the 2017/2018 academic year was 245 thousand, then accordingly about 200 thousand people will have to be retrained.

Among the implemented projects in the field of online education: Russian Internet University with access to higher education INTUIT (http://www.intuit.ru/); The world's first non-profit accredited university is the University of the People (http://www.uopeople.edu/); Educational platform Coursera (https://www.coursera.org/).

Digitalization does not bypass even the public sector; in this regard, it is worth noting the Public Services Portal, which is being actively promoted by the Government of the Russian Federation, which will lead to the implementation of all planned services, while at the same time there will be a significant reduction in the number of civil servants.

You can bring already implemented projects from the everyday life of millions of citizens - subway ticket machines, ordering machines in fast food restaurants (using the example of the Eatsa restaurant), self-service checkouts in grocery hypermarkets (using the example of the Magnit chain of stores).

Amazon International Corporation went even further and opened the world's first store without employees. If we talk about Amazon innovations, they already provide equipment for organizing robotic warehouses.

The above examples clearly show that information technologies are confidently entering the everyday life of society and are beginning to displace living people from their jobs; accordingly, the issue of ensuring employment for the freed-up workforce becomes relevant. Local scientists propose a number of measures to reduce (or eliminate) this problem. Let us consider the feasibility of implementing some of the listed measures in the Russian economy.

1) Reducing the working day (working week). It should also be noted here that a shorter working week inevitably leads to lower wages, since the entrepreneur does not pay the same amount for less work. Accordingly, the proposed approach is unlikely to be implemented without respecting the legally established rights of the employee.

2) Provide dismissed employees with shares, but with fewer rights. There is a danger here of a repetition of privatization in Russia, since all citizens had vouchers, but the low financial literacy of 90% of the population did not allow them to be used correctly, as a result of which the national wealth was distributed among a narrow circle of people.

3) Payment of unemployment benefits to ensure a decent standard of living. To show the utopian nature of such an idea, let's make a "rough" calculation of the amount of necessary benefits, assuming that 50% of the workforce remains unemployed. Thus, at the end of 2017, there were about 76 million able-bodied people in Russia, according to which the number of unemployed is 38 million. Let's say they are set a subsistence minimum of 10,326 (according to the legislation of 2018), according to which

approximately 4.7 must be paid monthly trillion rubles For reference, the planned revenues of the federal budget of the Russian Federation for 2018 amount to 15.2 trillion rubles; it is known that 30 percent of the revenues should be directed to maintaining the "army" of unemployed citizens in the economy. But we all understand that the cost of living does not guarantee a decent quality of life; Accordingly, it is necessary to pay attention to the average per capita income, which at the end of 2017 is 31,477 rubles, in this case we will receive an income of 14.4 trillion rubles [11].

It seems that there is only one way out of this situation - the creation of new jobs. What professions will be in demand in the digital economy? It is impossible to come up with something new in this direction; these are "white" and "blue" collar workers who have only technical knowledge. The first produces highly intelligent products in the field of IT technologies (programs, algorithms, new technologies, etc.), and the second provides services to robots and other IT infrastructures. But this begs the question: How many jobs will these professions create? They seem unable to absorb the 30-40 million liberated workers. So, we have come to the conclusion that the issue of employment in the digital economy remains open.

Developing the topic of new professions necessary for the digital economy, let us turn to the Atlas of New Professions (http://atlas100.ru/), developed by Skolkovo specialists. This analytical review shows that by 2030, intellectual professions such as accountant, statistician (most likely meaning data collector), credit manager, journalist, and bank employee will completely disappear from the market. At the same time, the following professions will disappear: call center operator, courier, security guard, trainer, etc.

Projected new employment areas include medical robot operator, IT geneticist, environmental analyst in construction, 3D printing designer in construction; airship designer, public arts curator, art appraiser, intellectual property appraiser, and more. Giving examples of professions of the future, it should be said that some of them already exist, some will be introduced, and some are utopian in nature, but in general the professions presented cannot solve the problem of technological unemployment, since they are not intended for mass use, including those focused mainly on people with higher technical education.

To illustrate the depth of the problem of job displacement caused by digitalization, let's look at Russia's recent history and look at agriculture. Yes, the causes of rural unemployment are different, but the consequences, in our opinion, are similar. Let's look at this process from the point of view of historical events. In 1990, 9,965,000 people were employed in agriculture, and at the end of 2017 this figure was 5,075,000. We find that over 27 years, the number of employed people decreased by 4.9 million people or 49%. The reason for this is a reduction in production, which is clearly expressed in a reduction in sown areas. Thus, in the base period, the sown area of agricultural crops in all categories of farms amounted to 117.705 thousand, while in the reporting year this figure was 80.048 thousand, that is, we have a reduction of 32%. With a significant reduction in sown areas, the gross grain harvest not only decreased, but also increased by 16 percent.

If we turn to livestock farming, we see the same picture: the number of cattle in all categories of farms (at the end of the year) in 1990 was 57.0 million heads, and in 2017 it was already 18.3 million heads, that is, it decreased by several 38 .7 million heads, but meat production during this period increased by 2%.

The given figures clearly show that the 50% reduction in the number of people employed in agricultural production did not lead to degradation of production, but, on the contrary, to an increase in basic indicators.

What happened to the released people, there are several scenarios of behavior:

Firstly, workers who could afford it (material or professional) moved to the cities.

Secondly, part of the population has replaced formal jobs with surrogate ones, which are usually located in the gray zone of the economy, or the shadow sector, such as individual entrepreneurship, folk crafts, collection of natural biological resources, personal subsidiary plots, gathering, processing of materials and others.

Thirdly, pendulum labor migration has appeared, in which workers go to "work" in a nearby city or region with higher wages.

Fourthly, the category of citizens who were unable to implement the above scenarios and followed the path of degradation and lumpenization.

As can be seen from the above scenarios of behavior of the labor force released from agricultural production, the state did not solve this problem in any way, but shifted it onto the shoulders of the population.

1) With a high probability, events in other types of activities will occur in a similar way, since in 2018 the Russian government does not have a clear strategic plan for adaptation and retraining of workers.

2) In some cases, finding an alternative and a place for recycling is very problematic. As an example, consider the category of truck drivers ("truck drivers"). At the moment, about 1.2 million trucks are registered in the PTALON system; as a result of the introduction of unmanned vehicles, approximately the same number of workers will lose their jobs. Considering the specifics of this type of activity, the issue of employment and retraining of such a large number of citizens remains open.

3) Let us pay attention to another fact - the increase in the number of unemployed leads to an inevitable decrease in demand for purchases, which, in turn, affects the general economic situation in the country.

4. Conclusion

Digitalization, artificiality and robotization are not utopias, but the harsh reality of the near future, and no measures to mitigate the blow to the workforce will allow unemployment in Russia to be predicted to reach 50% at the current level. If we take into account that at the end of 2018, 76 million people were employed in the economy, then another 38 million people will join the ranks of the unemployed; S.P. corresponds to approximately the same indicator. In his study, Zemtsov predicted 42.13 million technologically unemployed. If we take into account that each worker on average has 3 dependents (children and the elderly), then we reach a figure of 108 million people who are potential beggars (recall that the country's population in 2018 was 147 million people). The absence of a clear state program for the adaptation of workers displaced from information technology facilities poses a serious threat to the national security and social stability of the country.

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