

Artificial Intelligence: Are We All Going To Be Unemployed?

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Abstract - Against the backdrop of news of achievements in the development of artificial intelligence, there is an increasing feeling that we are on the verge of some great discovery. The development of artificial intelligence will bring people around the world to new opportunities and challenges but it is always necessary to be prudent, because new technologies are always a threat. According to analysis by PricewaterhouseCoopers, new technologies will certainly cut jobs, only this will concern a certain segment of the market, and most importantly new ones will also be created. By 2037, in the UK, robots can drive out people from 20% of jobs but the consequences of the scientific and technological revolution will affect the organization of new ones. The purpose of this literary analysis is to carefully examine the role of Artificial Intelligence (AI) and to find out will AI make people unemployed in the nearest future.

Keywords – Artificial Intelligence, AI, profession

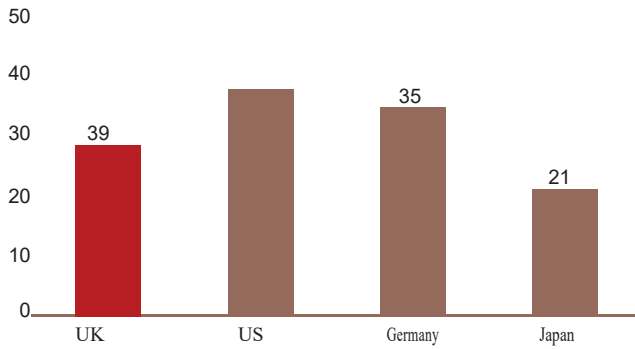
I. INTRODUCTION

Gartner, Inc. is the world's leading research and advisory company predicts that by 2020 the technologies of artificial intelligence will be introduced into most software products [1]. This statement is not made from scratch. The company's experts conducted research and came to a justified conclusion that in 2025 about 30% of investments will be made in AI in the digital sphere. According to skeptical opinions, already in 2025-2030 a lot of people will lose their jobs because of the fast development of artificial intelligence. Experts in the field of development of AI believe that in 2030 the world GDP will increase by about 15% due to the introduction of new technologies [2]. Increasing the efficiency of production processes will give an increase of 50%. The second half of the additional profit comes from the introduction of new technology into modern products. The process of automation and introduction of digital technologies is a natural step forward. Remember when the first sewing machines appeared and many tailors remained unemployed. The same parallel can now be carried out with the integration of artificial intelligence,

which is created and perfected with only one goal - to simplify and facilitate human life.

During the past decade, significant advances have taken place in the field of digital technologies, including artificial intelligence, robotics, cloud technologies, data analysis and mobile communications. In the coming decades, these technologies transform almost every branch of human life - from agriculture and industry to finance and transport and radically change the nature of work.

According to a new study from Redwood Software and Sapio Research [3], IT executives believe that automation will affect 60 percent of IT businesses, endangering jobs. 83% of respondents agree that that robotic automation will be critical and essential element to digital transformation of their companies. The report titled "The Future of Jobs" is based on the results of a survey of 10,000 workers in China, India, Germany, England and the United States, whose goal is "to better understand the future of employment". 37 percent of those who took part believe that AI and robotization jeopardize their jobs; in 2014 this concern was expressed by 33 percent [4]. The report gives an alarming scenario of the future, in which "typical" activities - ensuring a stable advancement up the career ladder - no longer exist which makes it necessary to acquire new knowledge and skills. If the report's conclusions are correct, people are ready for change: 74 percent expressed a desire to "improve or acquire a new profession in order to remain able-bodied in the future". In March 2017, PwC reported that 38 percent of jobs in the US by the early 2030s run the risk of being hit by automation; in Germany it is 35 percent, in England - 39 percent, in Japan - 21 percent. As it is seen from the figure below, the most significant hit is on UK and USA [5].

Figure 1 – Potential jobs at high risk of automation by country

Sources: ONS; PIAAC data; PwC analysis

Robotization is only part of the challenges of the future to which we must prepare today. Obviously, in ten years not only the labor market but also the ways of obtaining education will be different. The technological backwardness will have increasingly disastrous consequences.

II. DEMANDED JOBS AND ALTERNATIVE INCOMES

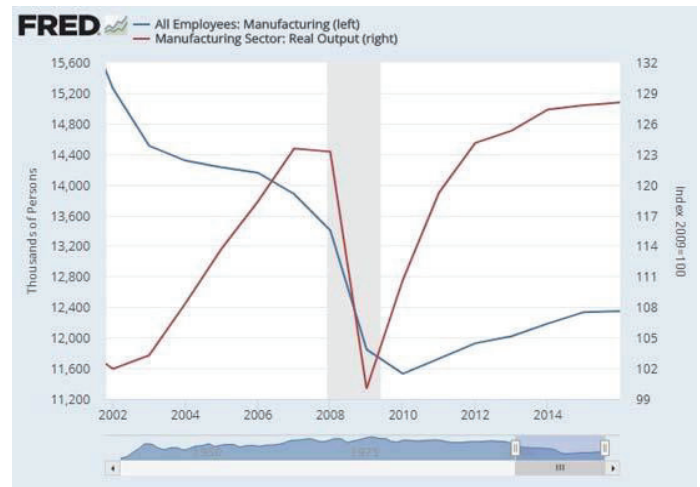
A. Are we all going to be unemployed?

Microsoft's co-founder Bill Gates said that in order to survive on the technological labor market, qualification would be needed in three areas: science, math skills and economics [6]. It is not necessary to be an expert but it is necessary to understand what those working in these areas are doing. In the case of robotics, there will be a great need for those who can manage automation software. Jeff Hess believes that workers should find out what skills will soon be required in their field [7]. The author recommends the scenario that will require workers and organizations to be ready to adapt: make an inventory of dynamic skills, organize inventory, analyze skills and plan for the future. We cannot discuss the development of robotics and automation without touching upon the issue of people who are unable or unwilling to learn new skills. 56% of respondents in the PwC study believe that governments should do everything possible to protect jobs and then people without technical qualifications continue to work and earn income.

Researchers at Oxford University believe that about half of the US jobs, in particular low-paid occupations are at risk [8]. The least risk is to stay "on the street" having those with academic degrees (engineers, physicists, etc.) and doctors of different categories. According to the forecast of the McKinsey Global Institute, soon robots will be able to perfectly perform about a third of the tasks included in 60% of professions [9]. The authors suggest this process in two waves, first when computers replace people and second stage will be characterized by further development of good artificial intelligence. According to PwC analysts, the forecasted future will be based on three waves of automation, the first two of which will make women mostly unemployed and the third will

mostly affect men. The first wave (a wave of algorithms with the simplest basic evictions) has already begun. The second wave, during which the algorithms will learn the routine work, will make artificial intelligence more functional. This phase is undergoing but the peak of its development will be in the 2020s. Finally, the third wave (the wave of autonomy) will lead to the emergence of automated systems that independently solve problems [10].

Since women are more likely than men to occupy lower service and office positions, then from the first two waves of automation the females will suffer most. According to forecasts, about 23% of females will remain unemployed. The third wave, expected in the mid-2030s will leave 34% of men unemployed and 26% of women will be affected accordingly.



The graph above shows the dynamics of production volume (red line) and number of personnel (blue line) which approves the tendency of automatization and robotization within 8-10 years in US. Bloomberg in its study notes that robots are starting to cope with an increasing number of human tasks, so in the age of automation, most people are at risk from their jobs in the service industry [11]. Now technological progress does not create new jobs but reduces their number. In the US in 2016, the service sector had three quarters of cuts in more than 350 sectors of the economy. Before that, the loss of jobs in production was much higher than the decline in employment in all other areas. During the first four months of 2017, 26.8 thousand people worked in the shopping centers of America less than in the same period last year. At the same time, employment in the coal mining industry decreased by only 2.8 thousand people. Among them were employees of shopping centers, consultants of insurance companies, as well as representatives of low-paid occupations, who were most affected by automation. On the one hand, this may mean a reduction in the jobs of some professions, on the other hand, only individual tasks can be automated. Thus, automation goes by leaps and bounds, simplifying the tasks set for the person. At the same time, this means that in a few, perhaps dozens of years, the presence of a human in performing certain actions will not be required.

Figure 2 – Potential jobs at high risk of automation by UK industry sector

B. Will machines replace experienced workers?

From the *Will Robots Take My Job* web page, every Internet user may wonder how high is the probability that the tsunami of computerization in the future will leave him or her without work [12]. For many professions forecasts are disappointing: clerical staff will be replaced by machines with a probability of 81 percent. For a tourist guide, the theoretical risk sooner or later to remain without work reaches 91 percent. But, as example, for a database administrator, the probability is only 3 percent. The basis for these calculations was the US study of 2013, whose authors predict that 47 percent of workers in the United States under the threat of losing work in its current form through the progress of computerization. Particular importance for the labor market can have powerful computers that can "learn." That is, to acquire new skills in the process of obtaining new arrays of information.

The professional term for this is a 'Deep Learning'. The forecast considering the likely progress of cars to the labor market as a whole looks like this: the more routine in your work, the more likely that in the future you will be replaced by a robot or a computer. More individual work has more chances of survival. The American magazine *Wired* predicts that most of the current workers at the plants in the future will be programmers. Of course, not pros from the Silicon Valley, which

account for only eight percent of US programmers, but ordinary "hardcore programmers" - for example, system administrators. The average salary of a programmer in the US is more than 80 thousand dollars a year, which is much higher than the average American. Therefore, you should not be afraid of your workplace for programmers. In particular, in the US experts expect that the number of jobs in this area will grow in the coming years by more than ten percent.

Programmers, for example, are hunted by the company Zalando which is one of the European leaders in the internet trade in footwear and clothing. But in the marketing department will cut more than a hundred jobs because instead of people in this department, more work is done by computer programs with appropriate algorithms. Programmers are needed in order to develop algorithms for analyzing data that are collected automatically. Based on these algorithms, the customer is automatically offered products that may interest.

Similar expectations in the industry. The head of Siemens Joe Kaeser predicts that by 2030 in the German economy will be lost up to half of the created value of products through computerization [13]. According to Kaeser, only one in ten of the middle class wins from computerization. "Nine will be worse, only one will be better." Digitalization will destroy the middle class, Kaeser predicted, speaking in 2016 at a conference on digital technologies DLD.

C. Does the 'gig economy' actually increase the exploitation of workers?

In the modern world, there is a transition to the gig economy (English gig is a multi-valued dialect and slang word, which, among other means "short-term, one-time work"). In the gig economy, workers are employed in small short-term, as a rule several jobs. This can be both an Uber driver's work, as well as performing micro-tasks on crowdscape platforms like Amazon Mechanical Turk which include the translation of several text proposals or the designation of images. Flexibility, diversity and autonomy are the promises of a new gig economy. Workers in the gig economy mainly work through the Internet which does not restrict them to the local labor market. "A person in Moscow no longer depends on local employers but can perform tasks, for example, in the London". However, are workers in the gig economy really getting enough for their work? 68% of respondents reported that this flexible work in the post-industrial economy brings an important part of their household income. Thanks to the Internet and digital platforms many people were able to find employment which it was much harder to do before, in particular people with disabilities or migrants without an official work permit.

In the gig economy there is a clear predominance of supply over demand. This causes many people to reduce the price for their work well beyond what they consider fair. Many of them

are forced to work intensively and with too strict schedules. International Monetary Fund (IMF) assessed the possible consequences of labor automation for the world economy and social equality. The conclusions were disappointing: despite the fact that robotization increases labor productivity and leads to GDP growth, in almost all scenarios it also leads to increased social inequality [14].

According to the IMF report, the replacement of people by robots can lead to a fall in salaries and, accordingly, to an increase in the stratification of society. At the same time, the more robotics will contribute to GDP growth, the less fairly and evenly will distribute income, according to the IMF. There can be such a stratification in two directions, the report states [15]. In the first variant, the difference between capitalists and workers will increase, and in the second, the distance between qualified and unskilled labor will become greater. The wide spread of artificial intelligence will lead to aggravation of the situation of the poor even if the robots replace a person not in all labor spheres. So, for example, if the work of low-skilled employees is replaced this will affect not only this category of workers but also the so-called "blue collars", whose incomes may decrease by approximately 26-56%, follows from the report.

D. Who will suffer?

The growth of uneven distribution of income between the poor and the rich is a global trend. Since automation actively contributes to the enrichment of the owners of these same machines, this will also inevitably lead to even greater inequality. The total gross product of mankind will grow rapidly and the number of people who actually produce it, on the contrary may decrease. The main blow will be on the "intellectual" middle class, that is, people engaged in labor demanding an average qualification - engineers, maintenance personnel, working class. In this case, the need for cooks and hairdressers will never disappear. The social consequences of automation will lead to an unlimited increase in the number of people that society need to feed, but cannot employ them. Psychologically, this will create an extremely uncomfortable habitat for humanity as a whole. However, it will not be possible to avoid this at least in the medium term. The introduction of automated technologies is a dangerous process for various types of operators of machine tools and mechanisms, as well as, for example, accountants as said before. However, as a result, this will not lead to unemployment but will only encourage the redistribution of human potential from areas with a low intellectual component to new ones - "intellectually intensive" areas.

III. UAE STRATEGY FOR ARTIFICIAL INTELLIGENCE

A. The UAE Government seeks to be a major hub for developing AI techniques and legislation. The authorities confirmed the plans to create an innovative ecosystem that will allow to become one of the world leaders in the development of applications and services based on artificial intelligence. The Ministry of Economy published a report on the economic effect of investment in the technology of the fourth generation of the industrial revolution, primarily artificial intelligence. Such technologies are not limited to price, consumption, production and productivity. According to the government, by 2030 the UAE intends to become a global center of artificial intelligence. The report also notes that innovative technologies will decrease the government's annual spending by 50 percent by reducing the number of paper transactions. It also predicts that the strategy of the UAE in the field of artificial intelligence will lead to an annual economic return in many sectors of about 22 billion dirhams. Over the past three years, the amount of state funding for research into artificial intelligence in the UAE has grown by 70%. By establishing relevant sectoral funds and prizes, the government of the Arab Emirates actively encourages research in the field of artificial intelligence and robotics. These efforts are mainly directed to the social sphere (education, health, social work) and the provision of related services. In the future, it is planned to introduce these developments in the fields of logistics, transport, the rocket and space industry and urbanistics. In May 2017, the first robot policeman started working in Dubai - with his help, everyone can inform the police about violations and pay fines. In March 2017 it also became known that technologies based on artificial intelligence will soon be implemented in the work of budget institutions, which will significantly improve the quality and speed of the provision of public services.

The British University in Dubai has announced plans to launch a new faculty - it will prepare bachelors in the field of artificial intelligence. This initiative is within the framework of the development strategy of Dubai until 2031. The University of Science has developed a program in cooperation with the University of Edinburgh.

The introduction of innovative technologies in education implies simplification of the learning process through the use of specialized software and electronic materials (electronic textbooks and teaching materials, online platforms, etc.) by teachers and students, as well as through the development of network infrastructure, telecommunications and Internet services for correct introduction of these technologies. The Arab Emirates has developed a number of initiatives, thanks to which the country can safely be considered a regional leader in the creation of innovative educational platforms, materials, applications and technologies. AI will create more jobs in 2020 than eliminating [16].

IV. CONCLUSION

The robots are already among us and many new ones are being created and rolled into laboratories. Mankind has already passed through various economic revolutions but the introduction of robots is another stage. They threaten not just some specific professions but almost every profession existing nowadays. Many of us will suddenly find ourselves in the place of horses, trying in vain to compete with cars. In addition to unemployment, one of the possible consequences of mass deployment of robots in various professional fields may be a gradual loss of knowledge. By investing in electronic assistants all the accumulated knowledge, making them the perfect substitutes, we ourselves will gradually begin to lose scientific professionals and professional practitioners. In an environment where robots are good for us and the people of the same profession have to be retrained, the continuity of the transfer of knowledge will simply be disrupted. The development of science will be the lot of a handful of people who feel their role. It is not necessary to hope for the emergence of many new professions in which millions of people can go. Now there are hundreds of professions, but the contribution of the new ones to the economy is small. Overwhelming professional spheres have existed for many centuries and almost all of them can be automated. For comparison, during the Great Depression, the unemployment rate in the US reached 25%. Of course, this will not happen overnight, or even for a year or five. But this process will expand and intensify.

The article tried to analyze, what should we do in the future where people will not be required for most of professions we are having now..

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