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THE IMPACT OF ROBOTICS ON THE LABOR MARKET

Introduction. The relevance of the topic is caused by the fact that nowadays there must be a clear understanding of the criteria of the new environment, challenges and problems which are caused by the general trends of innovative development and by robotics in particular. According to the International federation of robotics, production of industrial robots on a global scale is already a global multi-billion market that increases annually by 12%. Robotics of production is caused by economic efficiency and has a direct impact on firms' economics.

Review of recent publications. The issue of essence and value of robotics has been covered in publications of such scientists as T. Harford, A. Muraviov [1] and also in some reports of the international organizations, among which are the International Federation of Robots [2] and the International Labour Organization. However, it should be noted that the issue under consideration calls for a more detailed research into the impact of robotics on the labor market.

Objectives of the paper. The study is aiming at the determining the main trends of the impact of robotics on the labor market.

Results of research. Today a fear that global robotics in all spheres of life will result in mass unemployment has replaced the euphoric opinion, that robots will relieve workers from their routine work and will release time for creativity

According to the International federation of robotics (IFR), automation of production is developing at a frantic pace around the world, the average value of robots in the industry makes 74 robots per 10 000 workers. In Europe, the density of robots in production is the highest and makes 99 units, in America – 84, in Asia – 63 units.

The market of robots is supposed to develop in the EU and to make 3.7 billion dollars by the end of 2018. According to the figures of 2016, provided by the World Robot Statistics, IFR, the number of industrial robots will have increased by approximately 2.6 million units till 2019. It is about 1 million more than in 2015. About 70% of industrial robots are in operation in segments of the metal-working, electrotechnical and automotive industries. Due to the introduction of robotics in 2015, the EU witnessed an increase in electrotechnical industry outputs (by 18 %) metallurgical products (by 16%) and in automobile industry outputs (by 10 %). The market of industrial robots grows annually by 8%.

The EU position in the world robot market represents a market share of 32 %. However, the European Union made a decision to invest 700 million euros in innovations and robotic products by 2020. At the World Economic Forum in Davos it was stated: “Distribution of robots and robotics marked the 4th industrial revolution” [3]. All industrial revolutions were certainly followed by social shocks and therefore it is possible to say that the transition to automation will affect the personnel. It is very difficult now to define whether will be global or local mass replacement.

Moreover, robotics directly influences economy of a firm. Consequently, there are following reasons to attract investments into introduction of robots at an enterprise: increase in volumes of production, improvement of product quality, economy of floor spaces, reductions of staff turnover and increase in technological flexibility [1]. Robotics and technologies change the world for better, but they do not create many work places. On the contrary, due to the current condition of the developed countries’ economies more and more people are losing their jobs.

According to findings by the consulting company PWC, in the next 15 years robotics can increase the number of the unemployed worldwide. The USA will be affected most. Nowadays, there are more than 40% of employees in the USA who are under threat of losing their jobs because of robotics, in Great Britain – 30 %, and in Germany – 35%. Japan’s indicator is the lowest – 21% (fig. 1) [4].

Automation of production will concern machine operators and workers who perform routine work. Considerable changes on the labor market will be felt by workers in the USA and Germany where a third of workers will be forced to look for a new job.

By 2025 in the USA there can be 3.4 million people out of job place. This will increase unemployment rate by the 2%, with salaries in industrial production decreasing by almost 3% [5]. The opposite situation will occur in the countries which lack funds for automation, and a number of workers will not feel any noticeable fluctuations.

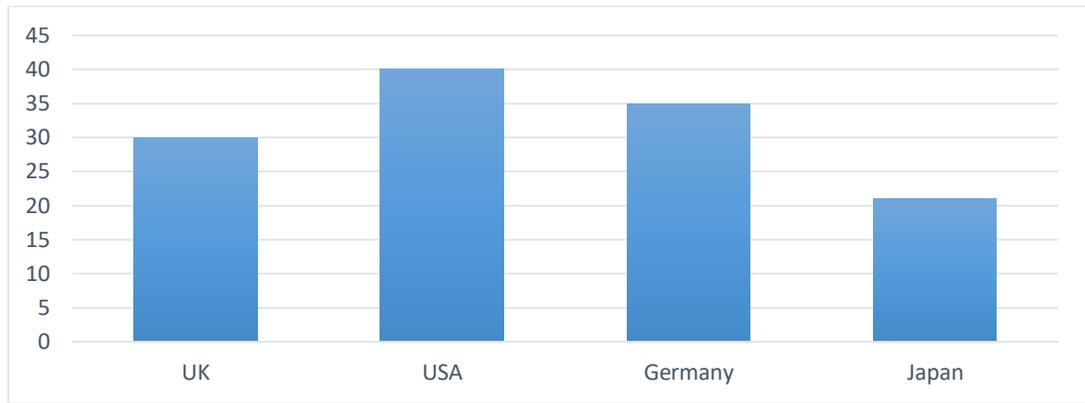


Fig. 1 The proportion of jobs at risk of disappearing due to robotics
Source: created by the author based on [4].

Conclusion. Thus, the development of robotics will promote introduction of robots at the enterprise, which, in turn, will cause partial replacement of personnel with robots. It should be noted that robotics is local by nature: robotics technologies will become strategic tools in the leading branches next decade. Technologies change requirements to employees as well. People need to develop such qualities as flexibility, emotional intelligence and creativity. The companies should put more investments into training and retraining of the workers.

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