A World Without Jobs*

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Martin Ford:
Rise of the Robots: Technology and the Threat of a Jobless Future
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Martin Ford is a futurist writer focusing on the development of information technology (IT), artificial intelligence and robotics as well as their impacts on economy and society. The core theme examined in his books is automation and a potential increase in unemployment. The author's popularity is indicated by the fact that he is a frequent speaker on the above topics at corporate, scientific and governmental events and conferences.

His book "Rise of the Robots: Technology and the Threat of a Jobless Future" states that robotisation differs from the industrial revolutions of previous centuries in that, due to artificial intelligence, today it threatens even the middle class and the service sector. Information technology is not the only factor that shapes the future. It is inextricably linked to a wide range of social and environmental challenges such as the ageing population, climate change and the depletion of natural resources. In his book, Ford wants to clarify whether IT is really leading us to a turning point which will have the impact of significantly decreasing the demand for labour. In his opinion, this process will probably not take place in a consistent or predictable way. The key message of the book is explained in several short stories.

In the Unites States, the symbiotic relationship between increasing productivity and rising wages began to weaken in the 1970s. Income inequalities increased to a very high level and the labour share of the national income gradually decreased. The US economy entered a new era, in which a fundamental shift in the relationship between workers and machines constituted a decisive element. The fundamental question is, of course, how the accelerating technological development will transform existing systems, what changes it will bring, what areas and jobs it will affect and how it will influence existing training structures. In his book Ford underlines that Artificial Intelligence will impact the agricultural and services sector,

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and it may force trained professionals out of the labour market. Furthermore, it will also transform the higher education system.

It is worth stressing the importance of the impacts on the service sector, since in both the United States and the developed economies, the services sector will be hit the hardest: this is the sector in which the vast majority of employees currently work. The expected future trend is already apparent today from the emergence of ATMs and other self-service terminals, but robots from a San Francisco company called Momentum Machines producing 360 hamburgers per hour also prove the expansion of automation. According to general estimates, an average fast-food restaurant spends approximately USD 135,000 a year on the wages of fast-food workers, so recouping the costs of these new robots can be done in the span of just one year.

The agricultural sector has already witnessed the most dramatic changes: plants such as wheat, maize or cotton can be planted, grown and harvested mechanically, and thus human labour in developed countries decreased significantly in this field. Automated technology became necessary for keeping farm animals, too. Highly developed agricultural robots are definitely attractive to countries that have no access to cheap foreign labour.

These developments also impact the jobs of skilled workers who may be forced out of the market, as their work may involve routine, predictable tasks that can be performed by machines or robots. The author believes that this process is accelerating. There are already robots that create media content, news, commentaries and to compose music. Thus, the question arises as to what heights of creativity and productive abilities are actually unique to human beings.

Obviously, all of these labour market developments require the transformation of the higher education system. The so-called MOOC (Massive Open Online Courses) phenomenon already broke into public awareness in 2011, and through the Internet, anyone from the age of 10 can learn the basics of artificial intelligence from the most prominent researchers in the field. It seems that a new era began with these online courses where elite training is available for everybody either free or at low cost. Higher education is one of the key areas in the US which has been immune from the impact of the increasingly rapid developments in digital technology. However, the emergence of MOOCs, automated marking algorithms and adaptive learning systems have opened up promising development potential for the higher education sector, expanding the dimensions of personal development, too.

IT has become a real universal technology which will make itself widely felt. It is expected to have an impact on every existing industry, and therefore demand for labour will decrease with the integration of new technologies into business models.

However, there are economists who reject this concept, basing their argument on the comparative advantage, a classic theory of economics. Throughout history, the principle of comparative advantage has always been a driving force behind specialisation and trade between individuals and nations. However, machines – especially software – can easily be copied. Therefore, in the age of intelligent machines, it would be necessary to reconsider the theory of comparative advantage. If we think exclusively in terms of persons, the cloning of an employee with the ability to perform his duties into a "troop" of workers with the same knowledge and experience would definitely be an interesting solution for large corporations. In an age when intelligence is becoming tangible in the area of information technology, the relationship between people and machines is being completely redefined. These changes will then increase productivity to different extents in the various enterprises and industries, at the expense of the labour force used.

On the whole, the main question of the book is whether accelerating technological development will be able to change the existing system to such an extent that we will have no other option but to fundamentally restructure it. Experts have different opinions: some see an opportunity in the scenario that machines will improve human intelligence and may increase lifespan, while others worry that machines will "take over power".

In Ford's opinion, robots can perform many types of tasks, such as the activities of lawyers as well as financial services. He is sure that there will come a time when robots perform every kind of work, almost without exception. Today, robots are being primarily used in industrial establishments and the mechanical engineering sector, but progress is constant, and thus robots may appear in many other fields, e.g. in taking care of the sick and elderly or in customer services. The author also highlights the fact that the 21st century has practically not created even a single job, but a number of jobs have disappeared. This may lead to a decrease in employment and a dramatic change in the economic situation. In an extreme case, to a world where robots taking over the jobs of people will ultimately manufacture goods for the rich.

In the author's opinion, the biggest problem is that for a long time the growth rate of jobs has not been able to keep pace with the development of technology. According to Ford, countries are not responsive to radical concepts, but if robots create a situation in which human labour is not competitive with them, labour's share in the gross national product will fall to a minimum. Because a robot is nothing else but capital converted into labour force, and if robots replace human labour, the employees' share of the gross national product may approximate zero. If we reach this situation, the question arises: Who will buy the products that robots make?