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Artificial Intelligence and the Future of Labour Law

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Abstract. The notion of work goes through major changes caused by the development of technology, and it is assumed that the development of sophisticated robotization and artificial intelligence will undermine the existence of work. Artificial and robotic intelligence will create more jobs, not mass unemployment, as long as innovation is guided responsibly. Cobots, or collaborative robots, are typically intended for physical interaction with people in a common workplace. There is no doubt that the world of collaborative robots is on the rise, so labour law will have to distinguish between non-human workers (dwarfs, industrial robots, etc.) and human workers. Regulations in the field will evolve, meaning that provisions will be needed which will determine, at a minimum, what the relationship between the two categories of workers will be according to the specificity of the activity as well as other aspects. Romania still has a low density of 15 robots per 10,000 employees, with a national interest in the topic, which is a result of the adoption in 2015 of the National Strategy on the Digital Agenda Romania 2020. Replacing human labour with robots is no longer just a discussion, it is a reality; it is not just a sci-fi issue, it is something society should contemplate and anticipate by updating legislation and social protection.

Keywords: artificial intelligence, collaborative robots, digital inclusion, electronic person

Given that employers' needs are becoming more and more sophisticated, considering the new realities they face, the future of labour law can be more or less predictable. That is why we propose to look at one of the possibilities, not far from employers' predictable intentions, to resort more and more to the use of industrial robots. *Cobots*, or collaborative robots, are typically intended for physical interaction with people in a common workspace.[1] More and more

1 Colgate–Peshkin–Wannasuphoprasit 1996. 433–439.

industries seek[2] to replace employees with robots, which can work continuously and whose work is not taxed by the state.

The automotive and metalworking industries are the largest markets for robots, followed by electronics, plastic, food and pharmaceutical processing. These robots work alongside labourers and are flexible, easy to program, secure, and inexpensive. Romania had in 2016, according to the International Federation of Robotics,[3] 11 industrial robots per 10,000 industrial workers. A study by the World Economic Forum, with the title *The Future of Jobs*,[4] estimated that by 2020 more than 5 million jobs would disappear, affecting all industrial branches and all geographical regions. Although such dire predictions apparently failed to materialize, we are only at the beginning of robotization. Of course, any loss of jobs is predicted to be partially offset by the creation of new jobs in highly qualified fields.

The notion of work is undergoing major changes due to the development of technology, and it is assumed that the development of sophisticated robotization and artificial intelligence will undermine the existence of work. Artificial intelligence (AI)[5] and its impact on jobs have been important topics at the World Summit in Dubai in 2017. In a survey conducted by a US company, it is stated that about 65% of the children who are today in their first years of school will have jobs that have not yet been invented.[6]

However, fear of job loss due to industrial robots is unjustified as only fewer than 10% of jobs can be fully automated[7] with the remainder still being occupied by human workers. Optimistically, artificial and robotic intelligence is thought to create more jobs, not mass unemployment, as long as innovation is guided responsibly.[8] A study by the European Centre for Economic Research (ZEW)[9] argues that the two aspects, the drop in unemployment and the increase in robots, are closely linked and that robots are creating new jobs and not leaving masses of unemployed workers behind, as many people would predict. The study confirms developments in Eastern Europe and Romania, where robotization has allowed unemployment to diminish and wage increases to take place. In this context, the number of robots installed per 10,000 employees in Slovakia and Slovenia is higher than the global average of 74 robots per 10,000 employees, with more than 130 units. The Czech Republic has a density of 100 robots per 10,000 workers, while Hungary has 60, and Poland 30 units per 10,000 workers. Romania still has

2 http://www.epochtimes-romania.com.
3 World Robotics Report 2016, www.ttonline.ro.
4 http://reports.weforum.org/future-of-jobs-2016.
5 Georgescu 2018. 3–18.
6 Georgescu 2018. 2–15.
7 http://www.hotnews.ro.
8 https://www.wall-street.ro.
9 https://www.zew.de/en.

a low density of 15 robots per 10,000 employees and needs over 10,000 robots in the coming years to remain competitive in the region.[10]

At the World Economic Forum (Davos) meeting in January of 2018, the adaptability of companies to the new and revolutionary challenge of artificial intelligence was discussed. What has been made very clear is that the Fourth Industrial Revolution will eliminate millions of jobs.[11] There is no doubt that the world of collaborative robots is on the rise, so labour law will have to distinguish between non-human workers (industrial robots) and human workers. Regulations in the field will evolve, meaning that provisions will be needed which will determine, at a minimum, what the relationship between the two categories of workers will be according to the specificity of the activity as well as other aspects.

Social security, if jobs are reduced due to re-technologization and introduction of AI implementations, could be offset by state-owned companies or by introducing indemnities, permanent social benefits to maintain a decent living standard for humanity. Thus, man should no longer be concerned about subsistence needs – shelter, hygiene, food, etc. – but should be able to develop his creative part, educate and teach new generations in this regard, thus finding time for new inventions, for new solutions, new experiments and discoveries.[12]

It remains to be seen how collective bargaining will affect the future of industrial robots: can unions or employees' representatives force the employer to use only a limited number of industrial robots? Will employers be able to replace the work of human workers with industrial robots in case of strikes or the absence – for other objective reasons – of workers? These questions, as well as many others, are awaiting a firm response from the legislator, the only one able to ensure a reasonable balance.

The Fourth Industrial Revolution, or Industry 4.0, which 'blurs the boundaries between physical, digital and biological spheres',[13] starts with the already existing digital revolution, which will advance the economy in new, surprising directions based on robotics, artificial intelligence, nanotechnologies, biotechnology, the Internet of Things, 3D printing, or autonomous vehicles, and so industrial relations will change as robotization progresses.[14]

In this context, the European Parliament Resolution of 16 February 2017 containing recommendations to the Commission on civil law on robotics (2015/2103 (INL))[15] should be noted. According to this document, the implications are direct:

10 https://www.universal-robots.com/ro/.
11 Georgescu 2018. 3–16.
12 Georgescu 2018. 29.
13 Schwab 2016.
14 http://adevarul.ro/tech/stiinta/o-dezbatere-necesara-privind-viitorul…/index.htm.
15 http://www.europal.europa.eu.

— on jobs for, as the document notes: 'the widespread use of robotics may not automatically lead to the replacement of jobs, but less skilled jobs in intensive occupational sectors could be more vulnerable to the expansion of automation' and

— on the structure of society by excessive polarization and increasing the gap between the rich and the poor, as stated in the following way: 'in the face of growing divisions of society with a declining middle class, it is important to bear in mind that the development of robotics can lead to an acute concentration of wealth and influence in the hands of a minority'.

As far as Romania is concerned, we note a national interest in these topics, which is materialized by the adoption in 2015 of the National Strategy on the Digital Agenda 'Romania 2020',[16] which, although does not address the issue of robotics directly according to the European Parliament, has an important economic component through Action 3 – eCommerce, Research, Development, and Innovation in ICT. It is estimated that 'the implementation of measures under Action 3 will generate by 2020 an estimated impact on the Romanian economy of around 3% to GDP and 2% to jobs.'[17]

The importance of this Strategy is once again reinforced by the Governance Program 2017–2020, which has a distinct component called Communications Policies and Digital Convergence. 'Fast and unlimited access to information and facilities of the information, communication and computing tools for the better use of human energies, the modelling of a fair and creative society that contributes to the economic development and the increase of Romania's competitiveness'.[18]

Digitalization is also one of the pivotal concerns of the European Union. The Digital Single Market, an integral part of the 2020 Strategy, is built around new principles and ideas, such as 'digital inclusion'[19] (correlated with social inclusion), ideas designed to allow all categories of people to take part in the technological changes that digitalization brings with it.[20]

Europe is considering granting rights and responsibilities to robots with artificial intelligence. The European Parliament adopted a resolution[21] in 2017 providing for a special legal status of 'electronic people', that is to say, for autonomous robots. 'We are in the age of human intelligence along with the artificial one', argues the report. Such a new category of legal subjects that might have rights and obligations would be added to traditional ones, legal entities, and individuals who might be present at a certain moment in the labour market.

16 Government Decision No 245 of 7 April 2015, published in the Official Gazette of Romania No 340 of 19 May 2015.

17 https://www.antena.ro/…/a-patra-revolutie-industriala-este-posibila-o-robo-apocalipsa.

18 http://www.cdep.ro/pdfs/guv201706/Program_de_Guvernare.pdf.

19 https://ec.europa.eu/digital-single-market/en/digital-inclusion-better-eu-society.

20 Dimitriu 2016. 446.

21 http://www.europarl.europa.eu/news.

It was said[22] that 'the humanoid robot Sophia, the first robot who acquired citizenship (Saudi Arabia decided [in this way] in October 2017), is considered a thing, and not a person, and must be dismantled and brought into luggage to travel by aeroplane, for example, and granting human rights to humanoid robots, even if they are much reduced at an early stage, would be a major error in the thinking of any legislator. It will be just a step towards eliminating people…' This robot was recognized as benefitting of personhood by a fiction of the law.[23] If we take as a basis the idea that a humanoid robot is a man-made thing, however, it should in no case be regarded as a legal entity, not even based on a legal fiction, as was the case in the nineteenth century with legal entities, entities made up of human individuals.

Even if it can be argued that humanoid robots cannot function without the software of the physical (natural) person that creates them, there is still the fear that they will be able to 'update' to the point that they will no longer need software and thus recur to the elimination or dominance of human intelligence. Creating a register for intelligent autonomous robots, as proposed by the European Commission, would only solve the non-contractual liability issue in the case of damage caused by the intelligent robot, which would have to be corrected at the cost of the owner. It cannot be considered a document for the recognition of an 'electronic person' as a distinct subject of law.

However, the stronger presence of intelligent robots, like in the case of Germany, cannot be ignored. For example, that country boasted the largest number of robots per 10,000 workers in Europe, namely 309.[24] Employers would be tempted to use more and more of these non-human workers because they can work without being limited to a work schedule, are unable to make use of union claims, and need not benefit from health and safety measures at work.

If an artificial intelligence application achieves consciousness, 'we can say that it can do legal deeds and acts, manifesting its external consent in one way or another, by written or by mutual consent, depending on the nature of the legal deed or the act. Therefore, it may even conclude contracts, thus replacing even the manager of a company.'[25]

There were between 1.5 and 1.75 million industrial robots worldwide in 2017, according to the International Federation of Robotics.[26] The car industry employs about 39% of them, followed by the electronics industry (19%), the metal products sector (9%), and the plastics and chemicals industry (9%). Romania might well be the first country to have an artificial intelligence as ambassador, designed to

22 Dobozi–Colțan.2018.
23 Georgescu 2018. 3–18.
24 http://www.hotnews.ro.
25 Georgescu 2018. 3–20.
26 World Robotics 2017 – Service Robots; https://ifr.org/.

answer questions about Romania to foreigners and to make recommendations for visiting certain tourist areas in the country, talking about people's habits and their way of life.[27]

In areas exposed to industrial robots between 1990 and 2007, both employment rates and wages decreased significantly compared to other areas,[28] suggesting two solutions: 1. vocational reorientation programs for those whose jobs are taken over by robots and 2. reforming the education system. In a very short time, jobs may suffer. Though there will be no question of a redress of this situation in the future, a short-term (possibly drastic) reduction of jobs, due to the implementation of artificial intelligence in social life, is imminent, depending only on its ability to learn and adapt.[29]

The optimistic view that 'robots will have a complementary role and will not replace humans'[30] was in the past criticized by personalities such as Stephen Hawking and Elon Musk, who warned that artificial intelligence is a fundamental risk to the existence of human civilization.[31] Companies will, however, prefer artificial intelligence because there are much lower costs, and efficiency increases considerably due to its use. AI does not get tired, does not need a meal break, does not need rest, and does not have to work 8 hours a day; moreover, it does not need salary[32] burdened by taxes and social security costs.

Industrial Revolution 4.0 is a natural step in the evolution of humanity, a new challenge for human civilization, which should not restrain itself from using robots in economic activity. They will never be able to fully replace human intelligence; artificial intelligence, even if superior to the human intellect, will always be dependent on the latter, which will have the lead role. Replacing human labour with robots is no longer just a discussion, it is a reality, it is not just a science fiction issue. It is something society should think about and anticipate by updating legislation and social protection in some way or another in the interest of the people.

Some examples of the replacement of human workforce at an international level are already relevant: e.g. a New York Hotel, Yotel, which is fully automated and assisted by AI.[33] It has an automatic check-in and check-out, adjustable and comfortable, motorized bedding that folds to provide the client with extra room space, a robot permanently prepared to help customers with luggage, etc. China

27 Georgescu 2018. 3–20.
28 Acemoglu–Restrepo 2018.
29 Georgescu 2018. 3–20.
30 http://www.zf.ro/…/era-coboților.
31 Sisea 2017.
32 Georgescu 2018. 2–17.
33 https://www.youtube.com/watch?v=U81M7SjZjWY; https://www.tripadvisor.com/LocationPhotoDirectLink-g60763-d2079052-i75110632-YOTEL_New_York-New_York_City_New_York.html.

announced in November 2017 the planning of the opening of police stations without human staff, fully automated and assisted by AI.[34]

Another example of the AI that took the place of people is Amelia, who works at a UK local council. Amelia is scheduled for customer service and administration; she can analyse natural language, understand the context, apply logic, learn, solve problems, and even feel emotions.[35]

These applications, and others already in the research pipeline, are providing us with a preview of things to come. If labour law is unable to keep pace with technology or fails to consider the needs of human workers in the coming age, dystopian conditions may arise. A well-built legislative framework for robot–human interaction in the workplace may, on the other hand, herald a bright future.

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