What if artificial intelligence made work obsolete?

The world of work is regularly disrupted by technology development. From mass production to word processing, innovations have regularly transformed our working lives and, with them, the broader economic system. Artificial intelligence (AI) is the latest in a long line of such technologies. What would happen if AI worked just as well as (or perhaps better than) humans, without taking holidays, getting sick, joining unions or drawing salaries?

AI is defined as systems that 'display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals'. In the context of employment, AI could support workers in some tasks, and replace them in others, while offering productivity gains and, potentially, creating new jobs. A fair distribution of costs and benefits depends upon careful management of the rise of AI in the workplace.

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Potential impacts and developments

If automation is often directed at 'dull, dirty and dangerous' tasks, AI may be stretching the definition of what counts as dull. As they become more capable, AI applications start to perform tasks that may be repetitive and labour intensive, but still require advanced skills and training. For example, AI can now be used to review legal texts. Since human lawyers are still needed to oversee and make use of this work, the result is task displacement and a reduction in the labour needed to do the same amount of work. This could translate into job losses, which might be compensated by lower costs leading to more demand for work, as well as new jobs in the creation and management of automated systems. Estimates vary wildly about how jobs will be created, transformed and lost. Some say 14 % of jobs could be automated, others say 47 %. Digitalisation has created 2 million jobs in the EU over the last 10 years and might continue to create new ones, but this is not automatic. Given the scale and uncertainty of the risks and opportunities, discussions quickly turn to the distribution of costs and benefits.

Several scenarios have emerged. For the pessimists, AI will lead to more unequal societies, as those who can perform valuable tasks or have a stake in the means of production grow wealthy, while the rest face unemployment and poverty. Unlike previous waves of automation, workers lose their role in the production system and, with it, their negotiating position, leading to the emergence of an irrelevant underclass. For the optimists, however, job obsolescence is not a problem if the very concept of employment is also made obsolete. It has been suggested that AI could take over almost all jobs, allowing us to build a 'Digital Athens', in which robots take the unenviable role of slaves, liberating people to occupy themselves exclusively with interpersonal, creative, leisure and sporting activities. Some might choose to work, for satisfaction or additional payment, in technology development or roles where human contact is central, such as providing social care. These two visions appear to be in opposition, but have also been combined into a single vision in which a few countries profit from AI development and provide for their citizens, while others fall behind, leading to pockets of extreme wealth and extreme poverty in different parts of the world.

These scenarios are deliberately provocative, compelling us to reflect upon how AI development and its impacts should be managed. There are many social and technical differences between historic waves of technology development, and it would be reckless to rely upon a few trite observations to simply assume that AI will create as many jobs as it displaces, or that the affected workers will find their way and ultimately be grateful for the transitions that upend their lives. For this reason, it is important to reflect upon the impacts of AI on employment and prepare appropriate responses.

Author: Philip Boucher, Scientific Foresight Unit (STOA)

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Anticipatory policy-making

The resolution on civil law rules on robotics, adopted by the European Parliament (EP) in 2017, highlighted potential skills shortages, gender inequality issues and the need to ensure the long-term sufficiency of social security systems. A 2018 EP resolution on digitalisation for development highlighted that digital strategies should be aligned with initiatives on education, equality and empowerment. A 2019 resolution on industrial policy in the context of AI highlighted the need for new programmes for education for all ages, as well as training and reskilling initiatives that engage the private sector and the existing workforce.

Along these lines, a range of measures could be taken to ensure that the workers of today and tomorrow have the skills they need to navigate their professional lives, and that society has the skills and capabilities needed to exploit the opportunities for beneficial development of AI. To ensure that the disruption is mobilised to reverse rather than exacerbate social inequalities, such programmes should include initiatives to reduce digital divides, embrace diversity and ensure an equitable distribution of costs and benefits.

Curriculums for the digital age. Even without specific reference to AI development, it is clear that students will benefit from learning computer science and programming. While this will be important for many students' future careers, it will be valuable for everyone's ability to navigate and understand their increasingly digital lives. These disciplines could be introduced at an earlier age and for a greater portion of time than today, and could also be combined with other disciplines, for example by applying programming skills to assignments in the sciences and humanities. As job markets are expected to change more rapidly in the future, the next generation of employees may benefit from learning more transferable skills and from 'learning to learn'. This could be achieved through a greater focus on skill acquisition and problem solving in school curricula. AI training could also be included in the university curriculum for future lawyers, doctors and other professionals who may need to work closely with the technology as their careers advance.

Continued learning for employees. Substantial retraining for mid-career workers would help employers and employees alike to manage transitions in the nature of work and the skills required to flourish. However, once people start their careers, further education is usually limited to either very short courses offered by employers or longer programmes targeting unemployed people. The concept and delivery of continued learning could be renewed to support more proactive retraining that anticipates changing needs during employment. This could include creating new ways of delivering, certifying and financing mid-career retraining that is delivered 'on-the-job' with support from universities and professional institutes.

New career roles. It is easier to see how AI can displace current jobs than it is to imagine those it may create. When opportunities for new roles emerge, support could be offered to help employers develop them into established career paths. For example, digital advisors could help users manage their privacy settings, hold service providers to account when rules and agreements are breached, and advise either of them on new risks and liabilities. This and many other career paths require a particular blend of skills (legal, technical and communication), as well as broad recognition and trust. To support the flourishing of such roles, the vocational and professional training sector could be engaged to develop bespoke certification and skill development programmes. Authorities could also stimulate demand by offering new services to citizens, creating roles within the public sector and through public procurement.

Protect platform workers. AI is closely linked to many sectors of the 'platform economy', which has blurred the lines between employees and independent workers. These workers depend upon platforms, but have limited access to their algorithms or the vast amounts of data that is collected from across the networks. Furthermore, they often lack the safety nets provided by traditional employers such as regular hours, pension schemes, sick pay and family leave. Measures could be taken to ensure coverage of social protection and collective representation for these and other workers that are vulnerable to unfair distribution of the costs and benefits of AI development.

Further resolutions on fair working conditions, rights and social protection for platform workers and AI in education are in preparation.