A fresh look at the future of work in the EU

SUMMARY

Economic and technical changes are redrawing the map of the world of work: new jobs are appearing while others are becoming obsolete, and atypical work patterns are replacing full-time work and open-ended contracts.

In addition, work is increasingly being carried out on online platforms connecting buyers and sellers, or by large project teams across borders and time zones.

Robotics and digitalisation raise new questions, as machines progressively replace the human workforce for routine tasks, and new types of professional and personal skills are required to respond to technological progress.

Active labour-market policies are gradually adapting to the changing reality in the world of work. This concerns social security systems, which increasingly face include new, and constantly changing requirements, as well as ethical and practical problems relating to robotics. The EU focuses on protecting workers’ rights while ensuring innovation, as the examples of the recently adopted Directive on Transparent and Predictable Working Conditions and the establishment of the new European Labour Authority illustrate. The need for the new digital skills that are essential to successfully master the challenges of the new working environment also continues to grow.

This is an update of an earlier Briefing on the Future of work in the EU, from April 2017, PE 599.426.

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Changes in the world of work

The reality of work and working patterns are constantly changing. However, in the last couple of years, economic transformations resulting from the development of digital technologies have accelerated the pace of this change. New jobs are appearing, necessitating new types of skills, while other jobs have become obsolete. Skills, which are the best guarantee of geographic and social mobility, are not static, but need to be updated and fine-tuned during an individual's working career. It is therefore essential that skills are geared to new realities, in order, for instance, to facilitate the transition from work carried out for an employer to freelance work.

Work is increasingly becoming an ‘umbrella concept’ for tasks carried out by workers under very different legal arrangements. Two recent trends involve either jobs being divided into smaller projects, which might be carried out by local workers or be outsourced, or, on the contrary, individual jobs being grouped together, with a view to completing a single project, and being carried out by local or virtual expert project teams, sometimes across borders and time zones.

Trends shaping work contracts

Part-time work

According to Eurostat statistics, the proportion of the EU-28 workforce in the 20 to 64 age group reporting that their main job was part-time increased from 16.5 % in 2005 to 19.0 % by 2015. Over the last three years, a slight decrease can be observed (18.5 % by 2018). The highest proportion of part-time workers in 2015 was found in the Netherlands (46.9 %, 46.8 % by 2018), followed by Austria, Germany, Belgium, the United Kingdom, Sweden, and Denmark, where part-time work was performed on average by more than 20 % of those in employment. In contrast, part-time employment is relatively uncommon in Bulgaria (2.2 % of those in employment, 1.8 % by 2018) as well as in Czechia, Slovakia, Hungary and Croatia (between 5.2 % and 5.9 %, between 4.2 % and 6.2 % by 2018). The frequency of part-time work differs considerably between men and women. Almost one third (31.5 %) of women aged 20 to 64 employed in the EU-28 worked on a part-time basis in 2015 (30.8 % by 2018), a much higher proportion than the share for men (8.2 % in 2015, 8.0 % by 2018). The highest rate (75.3 %) of women employed on a part-time basis was found in the Netherlands (73.8 % by 2018).

Fixed-term contracts

Figures show that in 2015 the proportion of employees aged 20 to 64 in the EU-28 with a contract of limited duration (fixed-term employment) was 11.1 %. This number continues to rise (13.2 % by 2018). In certain Member States, this number is particularly high: more than one in five employees in Poland (21.9 %) and Spain (20.7 %) had a temporary contract in 2015, and these numbers continue to rise (respectively 23.9 % and 26.4 % by 2018). Contracts of limited duration were least common in Lithuania (1.8 % by 2015, 1.4 % by 2018) and in Romania (1.0 % by 2015, 1.1 % by 2018). The differences in the use of limited duration contracts among EU Member States may reflect national practices, the supply and demand of labour, employer assessments regarding potential growth/contraction, and the ease with which employers can hire or fire.

Disappearing jobs

Experts predict that almost 50 % of the jobs that exist today will be redundant by 2025, as artificial intelligence continues to transform businesses. Customer work, process work and vast swathes of middle management are expected to simply ‘disappear’. Workspaces with rows of desks are likely to become completely redundant, not because they are not fit for purpose, but simply because that purpose no longer exists.
Outsourcing

For a long time, companies have been outsourcing non-essential tasks and functions in order to decrease their costs and to make their core competences their added value. This tendency is increasing steadily: trade and marketing companies use external contractors for their round-the-clock call centres and customer support services. Consulting and accounting firms outsource basic research and accounting tasks, while publishing houses outsource typesetting and editing to production teams. More and more frequently, these teams are located on other continents, as time-zone differences allow companies to run their projects faster and at a lower cost. In this kind of dynamic environment, temporary positions are common and organisations contract with independent workers for short-term engagements. Tasks can be broken down and distributed even more widely through mobile applications and online platforms.

Collaborative economy

The number of freelancers is increasing at a pace comparable to that of the growth of the gig economy. Teams are assembled around a given project and often across borders, thanks to digital technologies, with platforms connecting buyers with sellers. Such platforms can also exist in the framework of a collaborative economy (sometimes called the sharing economy), which offers opportunities for people looking for more job flexibility and for those who have fewer chances of finding a permanent job. Tasks are offered, assigned and performed through an online platform, which allows for real-time, interactive and often mutual rating of the performance of service providers and the reliability of users. Tasks offered can include babysitting, finding a shared car or holiday rental, or finding a designer for a brand logo. This form of economy offers ways to discover talent, services and expertise at a global level with unprecedented affordability and transparency, because of the permanent and visible evaluation of services provided and the rewards for the best performers.

On demand work

'On demand' work, which means a 'project-focused' approach to work, is on the rise. What has been referred to as the 'Hollywood model' is a noticeable trend in a number of sectors. Once a specific project, product or assignment is identified, a team of people from different professions with distinct but complementary skills come together and collaborate to complete the project. When the assignment has been fulfilled, the team disassembles and reconfigures with other members on another project (similar to work patterns in the Hollywood film industry, where teams and artists move on to the production of other films). The advantage of this approach is its flexibility, particularly in conditions of economic uncertainty. However, there are real concerns that this way of working may negatively impact protection and safety standards.

Atypical work contracts

In the EU, the majority of workers have permanent contracts. However, recent economic, technical and societal developments are reshaping the ways in which work is performed. Corporate structures are changing as a result of the increasing use of digital technologies and technical innovation, and the volatility of economic recovery. These factors are pushing businesses to offer short-term contracts in case a crisis hits. Atypical work contracts are sometimes chosen on a voluntary basis by the worker (for instance, in order to achieve a better work-life balance). In other cases (for example when the worker's skills are too low or not competitive), workers are obliged to accept disadvantageous working arrangements. A study by the European Trade Union Institute (ETUI) points out that part-time work has also been used as a tool to counter unemployment (in the form of 'job sharing', in which a particular job is performed by two or more workers). Atypical work contracts include part-time work, fixed-term contracts and other, less common, forms of employment.
A Eurofound study identified a series of atypical forms of employment as being of increasing importance, including employee sharing, voucher-based work, portfolio work or crowd employment.

**Influence of robotics and digitalisation on the future of work**

**Impact of automation on jobs**

The increasing use of industrial robots results in job automation in the workplace. As an example, supermarkets have started to employ robots as shop assistants, and a number of companies are introducing entirely cashier-less stores. Data from the International Federation of Robotics show that orders of industrial robots increased fivefold between 2001 and 2017, and that the trend is projected to accelerate. A 2016 Organisation for Economic Co-operation and Development (OECD) comparative analysis on The Risk of Automation for Jobs in OECD Countries examined the risk posed to jobs by automation for 21 OECD countries. It found that the share of jobs at risk of automation averaged 9% across OECD countries. However, according to a 2018 OECD study, this risk has already increased to 14%. The risk of automation is highest in Germany and Austria (12%), while it is lowest in South Korea and Estonia (6%). Observed differences across countries may reflect general variations in workplace organisation, differences in previous investments in automation technologies, as well as variances in the education of workers across countries. Jobs that fall in the high-risk category for automation are those involving mainly routine tasks (e.g. bookkeeping, auditing and accounting). Services, sales and office jobs are especially at risk. The risk of automation is higher for low-skilled workers and for low-wage occupations. A Cedefop study presents detailed tables on risks of automation for different sectors.

The jobs less threatened by automation are those that involve active observation, perception and manipulation, especially when such tasks are performed in unstructured situations. (An OECD paper calls these jobs ‘engineering bottlenecks’). Other tasks that are likely to continue to be carried out by humans are those that require creativity and social intelligence. The OECD paper also points out that the adoption of new technologies goes hand in hand with a new division of labour, one in which workers increasingly perform tasks that complement machines (for instance, tasks involving the monitoring of machines are likely to gain importance). Hence, new technologies are unlikely to fully automate workplaces or occupations on a large scale, but instead will transform workplaces and the tasks involved in certain occupations. Moreover, labour productivity will increase to the extent that new technologies complement workers. This may lead to higher wages, higher employment, or both, which in turn raises the labour share of income. As a consequence, the workers concerned may consume more products and services, thereby further increasing the demand for labour in the economy.

The OECD points out that, even though the significant rise in information and communication technologies (ICT), the use of robots at work, and the increasing deployment of artificial intelligence (AI), are directly responsible for substantial job destruction, by increasing productivity and raising incomes they have generated additional demand for goods and services that has given rise to even more jobs. Recent research indicates that the digital revolution has contributed significantly to job creation: 4 out of 10 jobs created over the past decade were in digitally-intensive industries.

**Digitalisation and digital skills**

Digital technology complements almost all existing job tasks; consequently, digital skills are required for nearly every kind of job. According to the Digital Skills and Jobs Coalition, in the near future, 90% of jobs (especially engineering, medicine, art and architecture) will require some level of digital skills. According to the 2018 Digital Economy and Society Index (DESI), about 43% of Europeans today still do not have a sufficient level of digital skills and 17% have none at all. Proportionally, more men than women have at least basic digital skills (respectively, 60% and 55%).
Major disparities across Member States persist. The share of people with at least basic digital skills ranges from 29% in Bulgaria and Romania to 85% in Luxembourg and 79% in the Netherlands.

An OECD report entitled *Skills for a Digital World*, reports digital skills are wide-ranging:

- **ICT generic skills** (related to the use of digital technologies for professional purposes, such as accessing information online or using software);
- **ICT specialist skills** (skills needed for the production of information technology (IT) products and services (such as programming, developing applications and managing networks);
- **ICT complementary skills** (skills for performing tasks associated with the use of ICT, such as information-processing, self-direction, problem-solving and communication);
- **foundation skills** (digital literacy, and emotional and social skills enabling the use of digital technologies).

Generic (or higher) digital skills are becoming a prerequisite for entry into many jobs and have a wide range of applications, even beyond domains where they are needed for core tasks. Across competence dimensions, the largest skills deficit, both among the active labour force and the population at large, relates to the use of software for content manipulation. There is a lack of digitally skilled people to fill job vacancies, despite high unemployment rates. In 2020, there could be a deficit of more than 500,000 information and communication technologies (ICT) professionals in Europe.

### Social security systems in changing circumstances

Labour laws and related social security systems are generally built around a stable, long-term contract with one employer, however this model no longer applies to the working patterns of the majority of people. Pension schemes and most other social security schemes are financed by contributions that are deducted from salaries or from self-employed income. The sustainability of these schemes relies therefore on a working population generating a steady flow of income to cover the benefits. As already mentioned, the concept of work is undergoing constant change and work can be organised in more flexible and mobile ways. There are other fundamental changes, such as the growth of an informal sector called the sharing economy. Consequently, existing social security schemes need to be rethought; they need to respond to recent changes, but there are obstacles to achieving this goal.

A report shows that non-standard workers have in general good statutory access to social protection schemes, whereas the situation is less clear for the self-employed, whose access to insurance-based schemes varies considerably among countries. In addition, even when non-standard and self-employed workers formally have access to a social protection scheme, they often fail to have effective access, because eligibility criteria are not tailored to their circumstances.

When it comes to health, some specific issues tend to affect workers engaged in non-standard forms of work, and even more so those workers with very atypical contractual arrangements. Firstly, workers on these types of contracts are more exposed to certain risks and work-related accidents on account of the types of jobs they do and the sectors they work in. Secondly, there is a higher risk of mental stress owing to the uncertainty of the situation of workers with very atypical contracts. Finally, although workers on non-standard work contracts are theoretically covered by the same health and safety provisions and complaint procedures as other workers, differences are reported in health and safety outcomes.

### Role of the EU

**Robotics and artificial intelligence**

Robotics and artificial intelligence are high on the EU agenda and an important concern for the European Parliament. In a 2017 resolution, the European Parliament asked the European...
Commission to propose rules on robotics and artificial intelligence, in order to fully exploit their economic potential and to ensure a standard level of safety and security. As regulatory standards for robots are being planned in several countries, the EU should take the lead on setting these standards, so as not to be forced to follow those set by third countries. The growing use of robotics also raises ethical issues. Parliament asked the Commission to consider creating a specific legal status for robots, to establish who is responsible if they cause damage. It also proposed a Charter on Robotics that would establish a code of conduct for robotics engineers, a code for research ethics committees and a set of model licences for designers and users. Parliament also called on the Commission to consider creating a European agency for robotics and artificial intelligence, to supply public authorities with technical, ethical and regulatory expertise. Parliament launched a public consultation on robotics and artificial intelligence on 7 February 2017 to canvass public opinion. While the attitude of the respondents was generally positive, as they considered that robotics would be particularly helpful for hard and dangerous jobs (92%), and that it would ensure efficient methods of transport and delivery (71%), they also expressed some concerns: some feared that robotics would eliminate jobs (34%), or would create inequalities in society (18%).

In April 2018, the Commission presented the European AI strategy, which aimed to increase public and private investments in AI to €20 billion per year over the next decade, prepare for socio-economic changes, and ensure an appropriate ethical and legal framework.

In December 2018, the European Commission presented a coordinated plan on artificial intelligence. This plan proposes actions in four key areas: increasing investment, making more data available, fostering talent and ensuring trust. A High-Level Expert Group on Artificial Intelligence was also created. The group presented the Ethics guidelines for trustworthy AI in April 2019.

In February 2019, the European Parliament adopted a resolution on a comprehensive European industrial policy on artificial intelligence and robotics. It stressed that education curricula must be adapted to automation, including through the establishment of new learning paths and the use of new delivery technologies. The need for digital skills, including coding, should be part of teaching and training from the early school years to life-long learning. Parliament highlighted the fact that malicious or negligent use of AI could threaten digital security, and physical and public safety, and called on the Commission to propose a framework that penalises perception manipulation practices. The resolution also stressed the importance of greater investments in this field, the promotion of public-private partnerships, the re-evaluation of existing legislation to ensure that it is fit for purpose with respect to AI, the creation of an ethical charter of best practice for AI and robotics that companies and experts follow, as well as the creation of a European regulatory agency for AI.

Enhancing digital skills

Reducing the mismatch between the skills available and those demanded for a digital transformation of the economy has been a key EU-level priority over the past decade. The 2010 Digital Agenda recognised the need for indicators to measure the extent of digital competence in the EU. This was implemented through the development of the Digital Competence Framework ('DigComp'), enabling citizens to evaluate their digital skills, and the Digital Economy and Society Index (DESI), summarising relevant indicators on Europe's digital performance and tracking the evolution of EU Member States in the area of digital competitiveness. The Grand Coalition for Digital Jobs, a multi-stakeholder partnership formed in 2013, aims to facilitate collaboration between businesses, education providers, and public and private actors. Since 2016, the New Skills Agenda for Europe seeks to improve the quality of skills training and to make the skills acquired more visible and comparable from one country to another. Data on ICT skills should also be improved in order to better anticipate developments and help people make better career choices. Skills acquired in non-formal ways should also be assessed and validated.

Through its Digital Skills and Jobs Coalition, launched in 2016 and bringing together Member States as well as private and public stakeholders, the Commission seeks to further reduce digital skills gaps
by fostering the sharing, replication and upscaling of best practices in areas such as training and matching for digital jobs, certification and awareness raising.

**Digital Opportunity Traineeships** have been launched to help young people improve their digital skills and consider a career in the digital sector.

### More protection for workers in atypical work contracts

A European Trade Union Institute study points out that European social partners have formulated successive framework agreements to bring the regulation of non-standard forms of work closer to that of standard forms. Fixed-term and part-time work contracts are governed by two European directives: Directive 1997/81/EC (supplemented by Directive 98/23/EC on part-time work and Directive 1999/70/EC on fixed-term work. The latter aims to ensure that workers on fixed-term contracts are not discriminated against compared to workers with open-ended contracts. It also aims to establish a framework that will prevent abuse of successive fixed-term work contracts or relationships with the same employer. The former aims to provide a legal framework to combat discrimination against part-time workers and to improve the quality of work, while at the same time facilitating the development of part-time work on a voluntary basis. The above-mentioned directives have since been transposed into national legislation in all EU Member States, causing many Member States in recent years to change their legislation in relation to part-time and fixed-term workers in order to comply.

Important developments have taken place over the past two years concerning the protection of workers in atypical work contracts.

The **European Pillar of Social Rights**, proclaimed jointly by the European Commission, the European Parliament and the Council at the Gothenburg Social Summit in November 2017, aims to uphold 20 principles and rights, structured around three categories: equal opportunities and access to the labour market; fair working conditions; and social protection and inclusion. One focus of the Pillar is ‘adequate and sustainable social protection, as well as access to high-quality essential services, including childcare, healthcare and long-term care, to ensure dignified living and protection against risks, and to enable individuals to participate fully in employment and more generally in society’. Also important from the point of view of flexicurity is the need for secure professional transitions, including the preservation and portability of social and training entitlements and access to individualised job-search assistance.

As envisaged in the 2018 Commission work programme, a **social fairness package** was presented in March 2018, containing a proposal for a recommendation on social protection for workers and the self-employed. The proposal aims to support Member States in the area of access to social protection. The main elements of the recommendation were to close formal coverage gaps so that workers and the self-employed could adhere to corresponding social security systems; to facilitate transfer of social security entitlements from one job to the next; and to provide transparent information for workers and the self-employed regarding their social security entitlements and obligations. On the latter element, a Directive on transparent and predictable working conditions was adopted in June 2019, setting obligations for employers vis-à-vis their staff. In December 2018, a political agreement was reached in the Council, with Member States committing to develop their national plans within two years of publication of the Council recommendation. The Council had earlier adopted conclusions on the future of work, calling for social protection for all workers regardless of the form of employment. The conclusions stressed that changes needed to be made in accordance with national competences, taking national circumstances into account, with respect for social partners, and that it was necessary to find adequate financing and e-solutions.

The increased number of cross-border workers and those with atypical work forms, as well as greater labour mobility across the EU, required strengthened cross-border cooperation. Parliament has repeatedly asked for stricter labour inspection at EU level in order to avoid social dumping. The
Commission subsequently launched a proposal in March 2018 to create a European Labour Authority (ELA), with a view to strengthening cooperation between labour market authorities at all levels and managing cross-border situations more effectively. In its report, the European Parliament outlined the need for a labour authority with an operational mandate, a clear focus on enforcement and sufficient competences and power to achieve its goals. The Parliament also aimed at striking the right balance between the competences of the Member States and the desire for an agency at EU level with genuine capacity to improve enforcement of rules throughout the EU. After trilogue agreement and the signature of the regulation on 20 June 2019, the European Labour Authority started work in Bratislava on 16 October 2019, and will reach full operational capacity by 2024.

MAIN REFERENCES

New forms of employment, Eurofound, 2015.
The future of work: Skills and resilience for a world of change, EPSC Strategic Notes, 2016.

ENDNOTES

1 In a ‘gig economy’, temporary, flexible jobs are common and companies tend to hire independent contractors and freelancers instead of full-time employees.
2 Flexicurity is an integrated strategy for enhancing, at the same time, flexibility and security in the labour market. It attempts to reconcile employers’ need for a flexible workforce with workers’ need for security.

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