Eurofound

Industrial relations

Social partners going digital: Using digital tools and adapting social dialogue processes

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The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency established in 1975. Its role is to provide knowledge in the area of social, employment and work-related policies according to Regulation (EU) 2019/127.

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Introduction

Background and objectives

Technological developments brought about by the digital revolution have had a significant impact on work and employment. The origins of the revolution go back a few decades: the invention of the microprocessor in the early 1970s was a major catalyst for the development of new digital technologies, which affect production systems, organisational structures, forms of work organisation, cultural attitudes and employment relationships. However, the pace of the digital transformation has recently accelerated to a significant degree. As with every wave of technological innovation, the application of new digital technologies brings both opportunities and challenges. Supporting wider adoption of digital tools is important for accelerating innovation and improving companies' competitiveness, and it is a goal of some key European Union policy initiatives, such as the 2030 Digital Compass and the European Commission policy priority 'A Europe fit for the digital age' (see the section 'Policy context'). At the same time, addressing the potential negative or unintended effects of digitalisation would facilitate the adoption and implementation of digital technologies to the benefit of all.

In the world of work, automation, digitisation of processes and human–machine interactions have implications for the tasks performed by workers, skills requirements and working conditions, as well as for the structure of employment. Social partners traditionally involved in the regulation of employment relationships, in accordance with their national industrial relations systems, find themselves in a situation in which new forms of work and conditions of employment need to be defined and regulated.

Social partners themselves are affected by technological changes that open up many possibilities for improving consultation, engaging with their members through digitised processes, improving the services that they offer their members, networking and so on.

Social dialogue can be affected as well. In terms of content, collective agreements can regulate the impacts of digitalisation on work and employment. In terms of process, digital technologies provide opportunities for online preparatory negotiation rounds, participation of an increased number of delegates and so on.

As the topic of digitalisation is high on the policy agenda and on social partners' agendas at both EU and national levels, this Eurofound report (in the series of 'topical updates') investigates the use of digital tools by the social partners themselves in response to the challenges of the digital age. In addition, it explores digital forms of consultation and collective bargaining and the integration of provisions on aspects relating to digitalisation into collective agreements.

Information and data are drawn from national reports produced by the Network of Eurofound Correspondents at the beginning of 2021, based on a standardised questionnaire (see Annex 2) and desk research, covering the EU27 plus Norway and the United Kingdom (UK).[1] Information was gleaned mainly from peak-level national social partners, position papers, web material and interviews.

The research involved collecting information regarding:

- the use of digital tools by social partners to recruit and inform their members, conduct campaigns, collect votes, conduct remote meetings, deliver training courses and consult with members, and the challenges they face regarding the use of digital tools (Chapter 1)
- digital forms of consultation and collective bargaining and the integration of aspects relating to digitalisation into collective agreements (Chapter 2)
- national debates on digitalisation and the future of social dialogue in the digital age (Chapter 3)

For the purposes of this report, the investigation of digital tools used by the social partners aimed to cover digital platforms, mobile applications, e-learning platforms, online surveys and so forth. Regarding consultation and collective agreements, the Network of Eurofound Correspondents was asked to include in its investigation regulation of the use of robots, artificial intelligence (AI), 3D printing and other digital technologies and their impacts on employment relationships.

Digital technologies and digitalisation are frequently mentioned in the report. A glossary of terms used may be found in Annex 1.

Policy context

Widespread adoption of digital technologies was supported under the framework of the Europe 2020 strategy towards a 'digital society', which committed to innovation, dissemination of knowledge, and online distribution of goods and services. In its communication of 19 February 2020, *Shaping Europe's digital future*, the European Commission describes three streams of action, one of which is to develop a 'fair and competitive digital economy', with the ultimate goal of making the EU a 'global role model', with €7.6 billion allocated to ensuring the widespread use of digital technologies across the economy and society. Following the agreement reached by the European Parliament and the Council, the programme Connecting Europe Facility 2021–2027 will support investments in transport, energy, and digital infrastructure networks (European Commission, 2021a). It will support the twin green and digital transition by contributing to the European Green Deal and the Digital Decade (European Commission, 2021b, undated). As part of the EU's digital strategy, 'A Europe fit for the digital age', the Commission has put forward several actions, for instance the European data strategy, the Digital Services Act, the Digital Markets Act, and measures pertaining to artificial intelligence and digital skills, to strengthen its digital sovereignty and set its own standards.[2]

The Commission's ambitions for 2030 are described in its Digital Compass and European Pillar of Social Rights Action Plan, with digital skills targets including that at least 80% of those aged 16–74 should 'have basic digital skills, a precondition for inclusion and participation in the labour market and society in a digitally transformed Europe', and that there should be '20 million employed ICT specialists in the EU by 2030, with convergence between women and men'. To this end, the Commission will facilitate the launch of multi-country projects, building on the Recovery and Resilience Facility and other EU funding. Member States are required by the Recovery and Resilience Plan to dedicate at least 20% of funding received under it to the digital priority. The Digital Compass proposed by the Commission lays out the ambitions for 2030. One of them addresses the digital transformation of businesses, as a result of which, by 2030,

> three out of four companies should use cloud computing services, big data and Artificial Intelligence; more than 90% [of] SMEs [small and medium-sized enterprises] should reach at least [a] basic level of digital intensity; and the number of EU unicorns [start-ups with a value of more than USD 1 billion, or €858.9 million[3]] should double.
>
> (European Commission, 2021b)

European-level policy

> has been increasingly focused on new technologies and digitalisation, as with the establishment of the digital single market, which aims to provide fast internet connections, boost e-commerce, establish data protection rules and foster supercomputing ecosystems. Furthermore, digitalisation objectives are increasingly combined with other strategic goals.
>
> (Eurofound, 2020a)

These other strategic goals include the green transformation (in line with the 2030 Agenda for Sustainable Development) and fostering digital skills (the Upskilling Pathways initiative and the Digital Skills and Jobs Coalition).

The EU-level cross-sector social partners, recognising the multifaceted aspects of digitalisation and its effects in the world of work and society, joined forces to better understand opportunities and challenges, assist workers and companies to reap these benefits and support a human-oriented approach to the integration of digital technology. Their efforts culminated in the conclusion of an autonomous framework agreement on digitalisation in June 2020 (ETUC, BusinessEurope, CEEP and SMEunited, 2020), signed by the four European interprofessional social partner organisations: the European Trade Union Confederation (ETUC), the Confederation of European Business (BusinessEurope), the European Centre of Employers and Enterprises Providing Public Services and Services of General Interest (CEEP, now SGI Europe), and the Association of Crafts and SMEs in Europe (SMEunited). The agreement emphasises the importance of workers acquiring digital skills, of securing employment and of establishing a framework on the use of digital tools (in particular with regard to connecting and disconnecting). It states that, for the EU-level social partners, it is essential that the 'human in control' principle guides the introduction of AI into the world of work and that there is respect for human dignity, including in relation to monitoring and surveillance of workers.

The European social partners stress the need to reach joint positions through social dialogue and to assess the impacts of digitalisation on sectors' transformation. Work in this area concluded in November 2020 in a joint position on the impact of digitalisation on the world of work in the metal, engineering and technology-based industries between European Tech and Industry Employers (Ceemet) and the IndustriAll Europe trade union covering issues of work organisation, skills, health and safety at work, and data protection. The joint statement reaffirms the key role played by collective

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2   For further information, see https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age_en

3   All currency conversions are correct as of 30 September 2021.

bargaining systems and the need for social partners to provide tailored solutions to meet the challenges that companies and employees face.

An important aspect linked to digitalisation is the need to regulate the employment and working conditions of online platform workers. Building on an announcement by the President of the European Commission of her intention to improve the working conditions of platform workers, the Commission is collecting evidence with a view to suggesting a legislative initiative as part of the European Pillar of Social Rights Action Plan. The envisaged initiative should be launched by the end of 2021. A document issued in February 2021 described the first phase of consultation of social partners under Article 154 of the Treaty on the Functioning of the European Union on possible action to address the challenges related to working conditions in platform work (European Commission, 2021c). The documents on the second stage of consultation include the findings of the first stage, provide an analysis of the main challenges to be addressed, discuss the need for and added value provided by EU action, and set out options that could be considered for an initiative at EU level (European Commission, 2020a, 2021d). In addition, the European Parliament, in its resolution adopted on 16 September 2021, *Fair working conditions, rights and social protection for platform workers – New forms of employment linked to digital development*, welcomes the Commission's intention to present a proposal for a legislative initiative to improve the working conditions of platform workers and calls on the Commission for actions to improve their working conditions. Additionally, it stresses issues related to health and safety, training, social protection, collective representation and data transparency of platform workers.

Earlier, in December 2020, the European Commission proposed a set of rules covering all digital services, including social media, online marketplaces and other online platforms. These rules are set out in the Digital Services Act and the Digital Markets Act; they aim to protect consumers and their rights and to 'create a level playing field that will allow innovative digital businesses to grow within the single market and compete globally'.

Focusing on the remuneration of platform workers, in October 2020 ETUC adopted a resolution on the protection of the rights of non-standard workers and workers in platform companies (including the self-employed). Its focus is digital labour platforms and companies offering work remunerated at a rate below the applicable minimum wage.

Furthermore, European social partners have been exploring the various possibilities offered by digitalisation to address the issue of membership decline. One such initiative came from the European Public Service Union (EPSU), which organised on 12 September 2020 a series of workshops with 27 trade union leaders and officers from 10 unions in Moldova and Romania. At the workshops, strategy for recruiting members was debated, among other topics. It was agreed that 'a digital database is an essential tool in effective targeted communications and monitoring of an organising and recruitment strategy'. In December 2020, EPSU organised a conference gathering over 50 European and national trade unionists and experts from 21 countries, to conclude its two-year project on collective bargaining and digitalisation, funded by the European Commission. Researchers and trainers involved in this project developed a toolkit on collective bargaining and digitalisation.

1 | Use of digital tools to organise membership and services

This chapter investigates the use of digital tools by trade unions and employer organisations in the EU, Norway and the UK for activities such as communicating with members (and the wider public), consulting with members on negotiation topics, collecting views and mobilising members to take action such as lobbying and demonstrations. The use of technological solutions to offer services such as e-training, advice, guidance and counselling is also explored. Finally, the chapter examines the challenges that social partners face in employing these technological tools and the measures that they have taken to address those challenges.

Types of digital tools and their application by social partner organisations

Overall, trade unions and employer organisations in the EU, Norway and the UK use similar types of digital tools in their internal workings, for example websites, email, mobile phone applications, videoblogs and social media platforms (such as YouTube, Facebook, Instagram, Twitter and LinkedIn), which are all well-established technologies and applications. Since the start of the COVID-19 pandemic, the use of online meeting platforms on desktop computers, laptops and mobile phones has been widespread, as has the use of online platforms to participate in conferences, webinars and training courses. In addition, some trade unions have been using machine-enabled communication (for example, chatbots in Denmark and Norway) to facilitate communication with their members and external audiences. Chatbots offer quick answers to questions through simulated human-like conversations with multiple users. Other trade unions, for instance the Romanian IT Union (SITT), use digital tools to automate tasks, or electronic voting tools such as EasyVote. Online survey tools such as SurveyMonkey are used to collect the views of member organisations on negotiation topics and on consultation processes with government.

Figure 1 illustrates the main ways social partners are using the various digital tools at their disposal.

Figure 1: The use of digital technologies by social partners

Source: *authors' own*
Image: © liuzishan/Adobe Stock
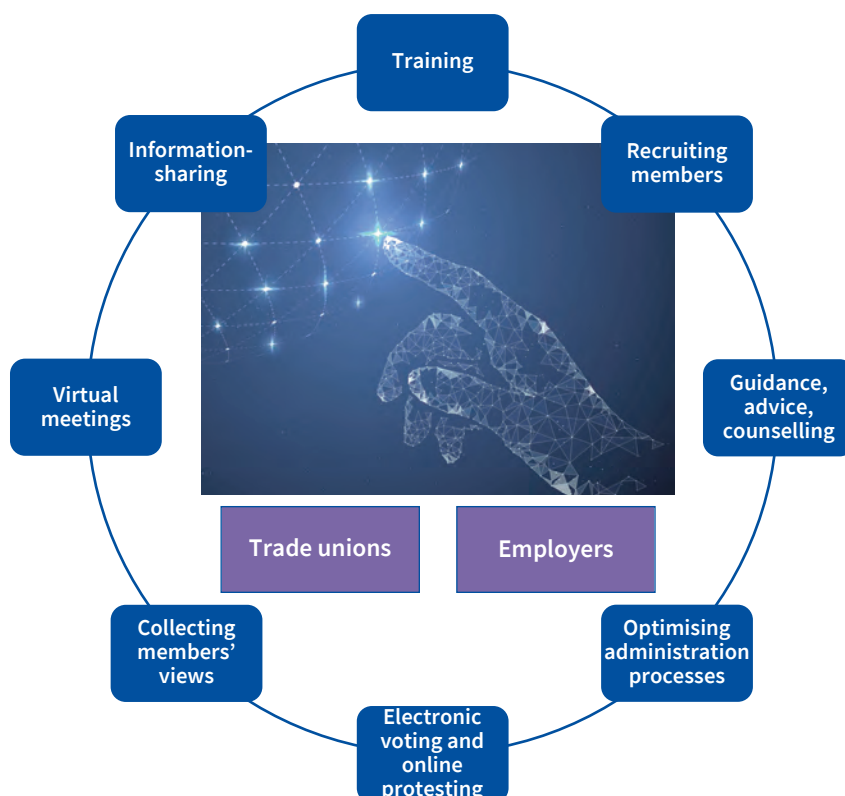
Most trade unions and employer organisations use their websites and other electronic platforms to provide **training** to their members. The Austrian Chamber of Agriculture (LKO) offers online demos for farmers via its website, as well as practical resources such as a weather warning plan service. The Danish Union of Commercial and Clerical Employees (HK) (representing retail workers and clerical staff) has organised a programme of courses on machine learning and chatbots for its members. This was facilitated by HK's branch for employees of the municipalities. The training aimed to help members make better use of technology and digital solutions.

Among other examples, the Hungarian Forum for the Cooperation of Trade Unions (SZEF) promotes e-learning platforms such as Moodle, online courses and a podcast series on issues and challenges in the workplace, using virtual learning environment tools. During the COVID-19 crisis, the Union of Autonomous Trade Unions of Croatia (UATUC) offered webinars to its members and to trade union representatives in companies. Some of its members participated in online training programmes provided by European Works Councils. Meanwhile, the Danish employer organisation representing mechanical and electrical contractors, TEKNIQ Arbejdsgiverne, has implemented a strategy to become the most digitalised employer organisation in Denmark, increasing its digital presence and expanding its offer of digital courses, education programmes and e-learning.

For **virtual meetings**, social partners at all levels have been using a variety of commercial applications (such as Microsoft Teams, Skype and Zoom). Videoconferencing, web events (such as webinars) and the use of mobile applications for online events have proliferated during the lockdowns, and many of these solutions are likely to continue to be used in the future. Various forums and initiatives have been developed to increase the sense of togetherness and solidarity among members in times of isolation. Such initiatives include online cafés (the Confederation of Hungarian Employers and Industrialists (MGYOSZ)) and weekly online magazines (UHM Voice of the Workers, Malta).

The **recruitment of new members** by social partner organisations is commonly done through their websites (via online applications), especially in the case of trade unions, which are more likely to use digital tools than employer organisations. Employer organisations rely mostly on lobbying operations to attract members from key industrial and service sectors, or organise campaigns and annual forums to give experts and policymakers a voice (as in the case of the Federation of Belgian Enterprises (FEB/VBO)). In Germany, employer organisations promote their positions and activities on social media platforms, with the aim of reaching target groups and new members.

Employer organisations provide their members with **advice, guidance and legal counselling** on their websites or through chat functions. This is exemplified by LKO, which offers members advisory services on legal, economic, technical and socio-political matters through its website. The Danish Transport and Logistics Association (DTL) provides similar services using digital tools such as chat functions.

The Danish Association of Lawyers and Economists (Djøf) (representing members in the social sciences and law), as part of its vision for 2025, 'your digital Djøf', is aiming to integrate digital solutions into its career development and networking activities and put them at the core of its daily operations. Similarly, another Danish trade union, the Danish Society of Engineers (IDA), aims to expand its activities on coaching and networking among members by digitalising the guidance and counselling parts of its operations. In Spain, the trade union confederation the General Union of Workers (UGT) provides support to platform workers via its website and on social media, using the hashtag #TuRespuestaSindicalYa (#YourUnionResponseNow). It aims to encourage workers to become members by offering information and guidance.

Sharing information with members is usually done via social media channels or using cloud storage services, as in the case of the General Labour Federation of Belgium (ABVV/FGTB), which provides information and campaign material that can be used for social elections. Other tools used for communication with members include newsletters sent using marketing automation platforms such as Mailchimp (as used by the employer confederation Concordia in Romania) and, for urgent messages, commonly used mobile apps (for instance, WhatsApp). Trade unions also facilitate networking opportunities for their members. Smartphone applications have been used by UATUC in the context of its initiative 'Together we are stronger' to assist its member organisations and worker representatives in their union activities. Part of the application, for unregistered users, is also open to the general public and offers basic information on workers' rights. During the pandemic, trade unions and employer organisations used digital tools to relay information on health regulations and safety measures to members and the general public and on support measures and legal requirements (for example, short-time remote work schemes, credit and tax rules, and government support) to companies. The General Confederation of Greek Workers (GSEE) launched an electronic information and support network for workers with a view to providing guidance on employment rights and collecting complaints from workers during the pandemic. Subsequently, feedback was forwarded to the competent public authorities. By exploiting the possibilities of technology under the circumstances, the network gave workers a voice while protecting their anonymity.

Employer organisations use different tactics to share information with members and reach out to a wider audience. The Luxembourg Confederation of Commerce (CLC) describes its website, which provides information in French and German, as the heart of its external communications. The Malta Employers' Association (MEA) uses various platforms, including its own website and a YouTube channel, to provide resources that communicate its message; these resources also serve as educational material for its members (the business community) and the wider public. Moreover, it uses these platforms to share with members its human resources (HR) handbook and disseminate its position papers and survey reports. The General Employers' Association of the Netherlands (AWVN) uses blogs and videoblogs to share information relevant to employers on working conditions, as well as information on its services for members. The Swedish employer organisation Almega (supporting companies in the services sector) uses its website as a platform for gathering information for its members, and as a hub: its social media posts link back to the website, where the organisation's members, members of the public and decision-makers are directed to information organised by theme. The Spanish federation representing entrepreneurs and Catalan industry, Foment del Treball Nacional, provides information to its members on how to use digital tools to accelerate their digital transition, while the Spanish Confederation of Business Organisations (CEOE) provides its members with information using various multimedia resources. Finally, two bankers' associations, Finance Finland and the Luxembourg Bankers' Association (ABBL), use online meeting platforms (for example, Microsoft Teams and, in the former, Yammer as an internal platform) and use an extranet and newsletters to reach a wider audience.

Both trade unions and employer organisations use online surveys for **collecting members' views and consulting on collective bargaining topics** prior to consultation and negotiation rounds. Some trade unions have been working on developing different forms of digital tools for such exercises; for example, the Danish Association of Social Workers (Socialrådgiverforening) has developed an online game as an interactive way to collect opinions, intended to encourage participation. The game is a tool for prioritising needs and demands in preparation of negotiations on collective agreements at both local and national levels. Prior to the pandemic, it was played in in-person meetings, but the organisers have adapted it and moved it to a digital environment. In Finland, the Union of Foremen in Commerce (KEY) is using its website to organise monthly surveys and polls.

Digital tools are also used as a means of **improving the well-being of members of social partner organisations**, as in France in the case of the interactive survey 'Let's talk about work', initiated by the French Democratic Confederation of Labour (CFDT) to find out about work-related difficulties and employees' expectations. The Irish employer organisation Ibec regularly runs HR surveys of its network of organisations. At sectoral level, the Association of Hotels, Restaurants and Similar Services of Portugal (AHRESP) has conducted regular online surveys since April 2020 to assess the impacts of the pandemic on business and gather the opinions of employers. Findings from these surveys have been disseminated publicly and have contributed to debate on policy measures to mitigate the effects of the pandemic.

Electronic voting and online protests were some of the social partner activities using digital technologies that were reported during the pandemic. For example, electronic voting was used by the trade unions in the private health and social care sector in Austria, and for the first time by the General Workers' Union in Malta and the Confederation of New Trade Unions of Slovenia Independence (KNSS Independence). During the COVID-19 crisis, UATUC organised an online protest in the context of International Labour Day 2020. Social media (as well as web-based communication tools) has been used to mobilise members for industrial action, as in France in the case of the Paris Autonomous Deliverers' Collective (CLAP). It used social media groups to organise online petitions, protests and demonstrations.

According to some trade unions and employer organisations, **digitising administrative processes** has improved services and back-office activities. The Danish trade union Djøf has digitised a large part of its previously manual paperwork, optimising its administrative services, which allows it to prioritise activities that add more value for its members, such as guidance and counselling. Electronic signature is another example of a digital tool widely used by organisations to speed up administrative processes.

Main barriers faced by organisations in using digital technologies and solutions adopted

National social partner organisations reported having encountered barriers to the use of new technologies. The three barriers most often reported were, first, the lack of digital skills within the organisation; second, difficulties linked to the digital infrastructure and technology in place in the organisation, and more broadly in the city or region; and third, issues linked to data protection, including the implementation of the General Data Protection Regulation (GDPR).

Table 1: Challenges in the use of digital tools reported by social partner organisations, EU27, Norway and UK

Challenges	Trade unions	Employer organisations
Lack of digital skills	Austria, Belgium, Bulgaria, Cyprus, Estonia, Finland, France, Greece, Hungary, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK	Austria, Belgium, Bulgaria, Cyprus, Estonia, France, Greece, Hungary, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden, UK
Difficulties linked to digital infrastructure and technology	Austria, Hungary, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, UK	Austria, Bulgaria, Estonia, France, Greece, Hungary, Luxembourg, Romania, Slovakia, Slovenia, Sweden
Issues linked to data protection	Bulgaria, Finland, Hungary, Ireland, Malta, Poland, Romania, Slovenia, Sweden	Bulgaria, Finland, France, Greece, Hungary, Ireland, Luxembourg, Romania, Slovakia, Slovenia

Source: *Network of Eurofound Correspondents, 2020*

As shown in Table 1, a shortage of digital skills represents the main challenge experienced by trade unions and, to a lesser extent, by employer organisations. A similar pattern is observed in relation to difficulties due to the infrastructure and technology available in organisations. Issues in relation to data protection are less common, reported in just nine of the EU countries by trade unions and in 10 by employer organisations.

To address the problems that they face, trade unions and employer organisations have adopted a range of solutions (Table 2).

To address the lack of digital skills, most trade unions provide their members with training and retraining (often online) and 'how-to' documents. Other options are identified through surveys. Some organisations provide specific training in digitisation and automation of work, training at national (federation) and regional levels or tailored courses on digital skills and new technologies for those who are less confident in using them, aiming to develop competencies in the field. Others use simple software and applications that are easy for members who have a lower level of digital skills to use. Similarly, employer organisations emphasise training, including advanced training on software and hardware optimisation. Employer organisations also aim to develop and enhance technical knowledge and digital skills among their members.

Difficulties linked to digital infrastructure and technology include poor technical equipment, lack of broadband coverage and low-quality internet connections, all of which can hinder members in accessing information on various digital platforms or participating in online meetings or other web events. Some regional organisations experience greater challenges than others in accessing digital solutions and suffer from slower or less reliable broadband connections. Organisations respond to these challenges by recruiting qualified IT staff and by seeking funding to upgrade equipment (for example, to offer videoconferencing or access to online streaming) and purchase better technological solutions for remote working.

When it comes to data protection, issues related to the implementation of the GDPR are usually dealt with by the appointment of a DPO to ensure compliance, identify risks of information leaks arising from organisations' websites and ensure an adequate level of data protection. Where measures are already in place, it is sometimes necessary to update security protocols when digital technology is extended to new uses, for example when electronic voting is introduced. Other ways of protecting personal data include requiring consent to process data when collecting contact details and the provision of training on data protection and GDPR issues, especially for staff working

Table 2: Solutions adopted by social partners to address challenges in the use of digital tools

Challenges	Solutions
Lack of digital skills	Training; online courses; seeking funding to purchase technological solutions
Difficulties linked to digital infrastructure and technology	Recruiting qualified IT staff; seeking funding to upgrade technical equipment
Issues linked to data protection	Recruiting data protection officers (DPOs) to deal with GDPR issues; creating data protection and cybersecurity guides to raise awareness of the risks of information leaks and good practices to protect data; requesting advance notice of participation in remote meetings; gaining consent to process data; updating security protocols; providing training in GDPR rules

Source: *Network of Eurofound Correspondents, 2020*

remotely. In Ireland, remote onboarding of employees requires engaging with them over email to obtain consent to process their data. One Polish trade union pointed out a problem that could arise in the future: if it decided to conduct a remote strike referendum, the employer could refuse to provide the trade union with employees' contact details under the GDPR. In Sweden, unions can send newsletters to their members only if they have consented to the use their contact information. Other actions aimed at addressing data protection issues include raising awareness of cybersecurity issues, especially in relation to the use of social media, and using secure applications when conducting virtual meetings.

Finally, trade unions and employer organisations raised other issues related to specificities or the size of

organisations. For example, it was reported that in Portugal some organisations encounter difficulties in reaching out to smaller employers with a lower level of digital maturity. Similar problems are reported by small sectoral organisations such as the Polish Craft Association (ZRP), which is an umbrella organisation for chambers of crafts, whose members are small craft enterprises. This was echoed by other social partner organisations, such as the Hellenic Federation of Enterprises (SEV), the Greek Confederation of Professionals, Craftsmen and Merchants (GSEVEE) and the French Confederation of SMEs (CPME). This last organisation said that three out of four SMEs have not yet made the digital transition and called for the creation of a 'digital transition regime', requiring companies to report their digital transition expenses on their balance sheets.

In brief

There are variations in the use of digital technologies across the EU Member States, Norway and the UK, and across organisations, with some being more digitally ready than others, exploiting technological solutions for a range of services. Such solutions are extensively used for sharing information, training activities and meetings, and they are gradually being introduced for other services that have traditionally been conducted face to face or by non-digital means. Social partner organisations that have digitised back-office activities, such as enquiries and administration, are able to concentrate their efforts on activities offering more value to their members. These include providing advice, guidance and counselling to workers and companies, and regularly collecting members' views on issues that are subject to negotiation or on emerging topics. Trade unions tend to use digital tools more intensively than employer organisations to reach out to potential new members. Some of the most pressing challenges in the use of these tools are the lack of digital skills, problems with digital infrastructure and data protection issues. It should be noted that the main challenges faced by trade unions and employer organisations in adopting and using digital technologies are interconnected; for instance, lack of technical infrastructure may result in the lack of the technical skills needed to use digital solutions. Therefore, the social partners need to find comprehensive solutions, in cooperation with public authorities at various levels (national, regional and so on), to ensure that the required digital infrastructure is in place and accessible to all.

2 | Digitalisation in social dialogue processes

Digital forms of consultation and collective bargaining

Before the COVID-19 pandemic, consultation of social partners (and other organisations) took place overwhelmingly through face-to-face meetings. Some governmental bodies had already set up digital platforms to hear the opinions and positions of social partners, but physical meetings were the primary form of gauging their views, particularly when sensitive issues were under discussion. Prior to the pandemic, social partners in many countries were usually invited to contribute to consultation rounds regarding digitalisation, the future of work and Industry 4.0, or the fourth industrial revolution, by participating in meetings and submitting position papers.

Evidence obtained from the Network of Eurofound Correspondents shows that meetings of working groups or task forces involving government officials, social partners, and economic and social councils or social dialogue councils took place digitally during the pandemic in about half of the countries participating in the research (the EU Member States, Norway and the UK). Consultation mostly dealt with the impacts of the crisis on the labour market, the economy and society. Moreover, social partners reported experiences of digital forms of collective bargaining (fully digital or hybrid forms) during lockdowns. Remote negotiations on the conclusion of collective agreements were reported in nearly half of the countries and in various sectors.[4]

The scope of the research was rather narrow, but it did seek to gather information on the views of national-level social partners on digital forms of consultation and collective bargaining. Some employer organisations argue that concluding agreements remotely (through online meetings) is easier, takes less time and allows broader participation; however, they have also experienced certain challenges, such as difficulty in mobilising individual employers, lack of personal contact and the intensity of the process. Trade unions largely agree with employer organisations, but clearly there have been different experiences in different countries. In some cases, collective bargaining

through online meetings may not have been as effective as face-to-face discussions, because more rounds than might otherwise have been expected were required in order to reach agreement (this was reported by, for instance, the Association of Autonomous Trade Unions of the Czech Republic (ASO ČR)). Other trade unions found it difficult to mobilise employee representatives for collective negotiation rounds or to gain support for and acceptance of outcomes of negotiations during lockdowns. Overall, social partners prefer to hold collective negotiations face to face, as it is easier to interpret body language and engage in meetings on the side to discuss sticking points and test potential compromises. The success of negotiations relies on trust between the two sides, and many respondents argued that trust is more easily built in a face-to-face situation. Some social partner organisations maintained that digital negotiations could be successful only where there was a previous good relationship and an understanding between the parties.

Social partners recognise that efficiency can be achieved through online meetings, as they can be organised at short notice, are flexible and do not entail travel time and expenses. Some employer organisations mentioned that this flexibility allows chief executive officers or global HR directors to participate in meetings that they would not normally attend due to lack of time to travel to them. Similarly, regional-level trade unions are more likely to participate in online negotiations and preparatory meetings. Another benefit of digital forms of communication that many organisations greatly appreciate is that they open up possibilities for wider member participation in European Works Councils and other EU-level social partner meetings. On the other hand, not all members of organisations are digitally savvy, and this may pose some difficulties in the participation process. Lack of technical infrastructure and inadequate technical equipment (as mentioned in the previous chapter) and the sharing of sensitive information can also be challenges.

Social partners and governments are currently assessing how these digital forms of consultation and collective bargaining have worked, and it is likely that hybrid forms, combining digital and physical forms of consultation and negotiation, will prevail in the future.

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4   See Eurofound's COVID-19 EU PolicyWatch database for collective agreements addressing the impacts of the crisis:
      https://static.eurofound.europa.eu/covid19db/index.html

Integration of aspects related to digitalisation into collective agreements

While it was not the intention of this research to comprehensively map collective agreements across Member States, it explored some indicative collective agreements as examples of the joint efforts of social partners to regulate aspects of digitalisation. Relevant collective agreements were sought at cross-sectoral, sectoral and company levels. However, a thorough analysis of collective agreement texts is beyond the scope of this report.

The topic of digitalisation has been of interest to the social partners for many years, and some of them have included it in their collective bargaining rounds. It should be noted that the term 'digitalisation' has often been applied broadly in national negotiations, encompassing key digital technologies (for instance, those used in self-driving cars, 3D printing and the internet of things (IoT)), as well as digitisation, automation practices, new technologies, remote working, telework and so forth. Company-level or works agreements tend to refer more explicitly to the technologies introduced, as they have often been designed for the particular needs of the company in question.

Finally, it should be noted that aspects of employment relations related to digitalisation are not regulated only through social dialogue. The role of legislation is important as well, particularly in countries where social dialogue is less advanced. Furthermore, social partners can play a significant role in shaping national legislation. Notwithstanding the importance of the legislation, this falls outside the scope of this report.

Collective bargaining levels

Regarding the various collective bargaining levels, social partners in Austria, Belgium, Estonia, Finland, France, Italy, Luxembourg, Norway and Spain have concluded cross-sectoral agreements covering aspects related to digitalisation. These types of agreements usually commit the parties to engage in social dialogue, set out joint principles and include provisions applicable at cross-industry level. Most collective agreements referring to digitalisation have been concluded at sectoral and company levels. Examples of such sectoral- and company-level agreements are given in Tables 3 and 4, respectively, while an analysis of the topics that they deal with is presented in the following subsection ('Topics regulated by collective agreements').

Overall, collective agreements dealing with aspects related to digitalisation have been identified in about half of the Member States, according to reports from the Network of Eurofound Correspondents (and with the caveat that no complete mapping has been conducted). However, it is notable that only a small number of central and eastern European countries are among them.

In Norway, such agreements have been concluded at all levels, but in the UK the predominant level is company or establishment level, reflecting the decentralised structure of collective bargaining. These examples show that, while social dialogue has been used to deal with this topic, in all countries there are still further opportunities to conclude collective agreements to regulate digital ways of working.

With regard to sectoral-level collective bargaining, social partners are keen to set up structures that monitor job reclassifications and transformations in occupations and work tasks, with a view to addressing them in future collective agreements. Monitoring mechanisms can study certain phenomena (for instance, teleworking) and their implementation by social partner organisations' members so that they can regulate them more tightly in future. In addition, some sectoral social partners indicated the need to share good practices on digitalisation, to avoid malpractice and promote good examples (for more details, see the subsection following, 'Topics regulated by collective agreements'). Experience from social partners in other countries would be valuable in this regard.

Table 3: Examples of sectoral-level collective agreements regulating aspects related to digitalisation

Country	Sectoral-level collective agreement
Denmark	Municipal: Under an agreement signed by Local Government Denmark (KL) (representing employees of the municipalities) in 2021, DKK 700,000 (€94,129) was allocated to assessing whether previous initiatives on digitalisation have been successfully implemented for all workers (leaving no one behind).
	Medical: The 2018 collective agreement between medical staff and doctors and a governmental employer organisation (signed by the Danish Medical Association (PLO) and Danske Regioner[5]) included clauses referring to better integration of new IT solutions to manage increasing workloads.
	Transport: In the agreement covering 2020–2023 concluded by the transport department of the United Federation of Danish Workers (3F Transport) and the Confederation of Danish Industry (DI), the parties acknowledged that the transport and logistics sector was on the brink of experiencing significant changes in the foreseeable future, with regard to increasing automation and most importantly self-driving vehicles, and that supplementary training and competency building would be vital for both businesses and employees. Online tools for assessing competencies are available to the parties to the agreement.
Finland	Technology: A collective agreement covering white-collar employees in the technology sector includes a paragraph stating that 'the social partners must start a sector-specific dialogue regarding the impact of technological development and digitalisation on the development of the work of white-collar workers, the need for further training, changes in the working environment and ways of working, and other changes to working life' (Technology Industries of Finland and Trade Union Pro, 2020).
Germany	Public: A collective agreement on digitalisation and impacts on federal-level public-sector employees is subject to ongoing negotiations (not yet concluded at the time of writing) between the United Services Trade Union (ver.di) and the federal government. ver.di calls for the introduction of a legal entitlement guaranteeing employees the right to participate in training and qualification measures when their tasks are changed by digitalisation processes (ver.di, 2020).
Italy	Electricity: The 2019 industry-wide agreement for the electricity sector envisages the establishment of a joint national sectoral observatory covering the main transformations affecting the sector, such as energy transition, climate change and decarbonisation, and the impact of new technologies and digitalisation on work organisation and on new innovative services (Article 6). The agreement also stresses the potential of new technologies to promote the health and safety of workers by helping to identify and assess risks and increase protection levels, and the importance of sharing good practices in this field (Article 11).
	Gas and water: The gas and water industry-wide agreement (2019) contains similar provisions to the agreement for the electricity sector (see above).
	Banking: The banking sector agreement (concluded in 2015 and renewed in 2019) acknowledged the impact of digitalisation on the sector in recent years and agreed on the establishment of a joint national sectoral observatory on the impact of digitalisation on trade union representation and work organisation and a national joint committee on the impact of new technologies (Article 29). The main objective of this committee is to monitor and analyse changes due to new technologies and digitalisation, with a view to designing shared solutions to be adopted in an agreement. The agreement also calls for the identification of new tasks and occupations and a review of job classification, stating that this has become imperative because of the impact of digitalisation.
Netherlands	Insurance: The 2019–2021 insurance sector agreement – concluded by CNV Professionals, part of the Christian National Trade Union Federation (CNV), and the National Employee Insurance Agency (UWV) – includes provisions on training, mobility and a safety net for employees to address the effects of digitalisation. It also contains provisions related to job satisfaction, workload, personal development and work–life balance.
Romania	Banking: In the banking sector, the Employers' Federation in the Financial Services Sector (FinBan) and the Romanian Council of Banking Employers (CPBR) have concluded an agreement with the Federation of Insurance and Banking Unions (FSAB) on the implementation of an employee training project, the first agreement signed between social partners in Romania to respond to the challenges of digitalisation. Training courses relating to digital technologies are available to all employees of banks that are members of CPBR (25,000 employees).
Spain	Medical transport: A collective agreement on medical transport was signed by the National Federation of Ambulance Employers (ANEA) and the Federation of Public Service Employees of the UGT (FeSP-UGT) in 2020. The social partners agreed to set up a national observatory, which, among other responsibilities, will monitor the implementation of teleworking processes in the sector.
	Property: In 2020, a collective agreement for property, mercantile and movable property registrars and their auxiliary personnel was signed by the employer organisation the Professional Association of Registrars (APR) and the Independent Trade Union Confederation of Public Servants (CSIF). The agreement provides for the creation of a commission to study and implement telework at sectoral level.

Source: *Network of Eurofound Correspondents, 2020*

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[5] PLO is the trade union for general practitioners in Denmark, and Danske Regioner is the union for the five Danish regions and functions as an employer organisation for hospitals and healthcare, among other sectors.

Company-level agreements have been concluded by companies and the relevant recognised worker representatives in line with the various countries' industrial relations traditions. These agreements aim to accelerate the adoption of digital technologies (often referring more specifically than sectoral-level agreements to the type of technology to be introduced) and regulate employment and working conditions.

Company-level agreements reported for the purposes of this research have been concluded in particular by companies operating in banking, postal services and telecommunications, but also by companies in the energy, ports, automotive manufacturing, media and food delivery sectors, and their respective trade unions or works councils.

Table 4: Examples of company-level agreements regulating aspects related to digitalisation

Country	Company-level collective agreement
France	Orange (telecommunications), 2016: the social partners agreed to avoid 'overuse' of digital tools, foster digital skills, develop new collaborative ways of working and protect workers' personal data.
Germany	Eurogate (ports), 2019: the agreement on automation was signed by ver.di and Eurogate. The agreement deals with the possible impact of automation and digitisation processes in the company and employment protection (see Box 2 for details).
	Gasag (energy), 2018: a works agreement on setting up an internal crowdsourcing platform to allocate certain work tasks regulates work organisation, working conditions, employees' data protection rights and employee surveillance issues.
Greece	Piraeus Bank (financial services), 2020: a two-year company-level agreement between Piraeus Bank and the Piraeus Bank Employees' Association (SETP) agreed, with regard to the issue of digitalisation and new technologies, that the bank's management will discuss with SETP, in a timely manner and on a regular and systematic basis, the digital transformation plans of the bank, to ensure that SETP is informed about measures for the education, training, utilisation and development of staff. Jobs resulting from the introduction of digitalisation and new technologies (for example, in e-branches) will be covered as a priority by the existing staff of Piraeus Bank, under the terms and conditions set out in the relevant sectoral-level collective labour agreement (with regard to opening hours, number of branches and so on).
Italy	Poste Italiane S.p.A. (postal and financial services), 2019: digitalisation was a key aspect of the agreement reached on reorganisation. The agreement envisages an investment of €150 million in physical and technological infrastructure, further automation of processes and the redesign of company structures, with the introduction of a leaner organisational structure. The agreement includes a number of measures to cushion the effects of reorganisation on employment (incentives for reassignment, internal redeployment, opportunities to shift to part-time work) and envisages significant employment creation through conversion of fixed-term contracts into indefinite contracts, employees moving from part-time to full-time work, and recruitment (of almost 3,000 full-time equivalent employees).
Luxembourg	La Poste Luxembourg (postal services), 2020: the agreement, known as Convention collective 3.0, introduced the right to disconnect.
Netherlands	ABN AMRO (banking), 2020–2022: the parties to the agreement (the bank, trade unions and employee representatives) recognised the need for the bank to change due to new technologies adopted and made provisions for employee development actions. To gain a better understanding of their competencies, ambitions and labour market position, employees can have a career assessment ('scan') carried out at the bank or a trade union, particularly during times of technological change. In addition, the bank's network of coaches, as well as that of the trade unions, is at the disposal of the bank's employees.
Norway	Foodora (food delivery), 2019 and 2020: the company and the United Federation of Trade Unions (Fellesforbundet) have regulated issues relating to pay and working conditions, and negotiation, information and consultation rights for food couriers through a company-level agreement (see Box 4 for details).
Slovakia	Volkswagen (automotive manufacturing): the agreement with the Modern Trade Unions Volkswagen (MOV) covers, among other issues, the use of digital technologies (the design of new production engineering and a new production line in the plant, which is linked in the agreement to dual education – which combines apprenticeships in a company and vocational education at school – and conditions for home working).
Spain	Nokia Transformation Engineering and Consulting Services Spain (IT services), 2020: the agreement was signed by the management of the company and the company works council at national level. It regulates the right of employees to telework one day per week, where this does not result in additional costs for the company.
	Corporación de Radio Televisión Española (broadcasting), 2020: the agreement was signed by the management of the corporation, UGT and the Independent Broadcasting and Communications Union (SI). Annex 5 regulates the conditions for teleworking, including working time, training, data protection, schedules, equipment, health and safety, and trade union rights.

Source: *Network of Eurofound Correspondents, 2020*

Topics regulated by collective agreements

Cross-sectoral agreements have focused mostly on telework and the conditions for its implementation (Belgium, France, Luxembourg and Spain) or on the implementation at national level of the EU-level social partners' agreement on teleworking (Estonia). Social partners in Finland, Italy and Norway have taken a broader approach, agreeing on joint principles on the application of digitalisation. The Factory Pact, signed by the General Confederation of Italian Industry (Confindustria), the Italian General Confederation of Labour (CGIL), the Italian Confederation of Workers' Trade Unions (CISL) and the Italian Labour Union (UIL) in March 2018, focuses on digitalisation and its impact on work and industrial relations. In July 2018, the same parties signed a specific agreement called 'Training 4.0', with a view to promoting competitiveness and productivity.

Sectoral- and company-level agreements have covered a wider range of issues, from different perspectives. Sectoral-level agreements set standards that regulate digitalisation and its impacts on the employment relationship, establish measures to monitor developments affecting the sector and set up mechanisms to assess the practices of companies within the sector. In addition, they establish a framework for action to promote certain priorities within the sector, such as involving training providers and research organisations, and encouraging companies to invest in innovation and technology. Topics that usually feature in all kinds of sectoral-level agreements – for example, training, health and safety, workload and work–life balance – are also typically covered by social partners when dealing with digitalisation issues.

On the other hand, company-level agreements, understandably, tend to regulate issues related to digitalisation in the context of company-specific challenges and priorities relating to the use of digital tools in some or all of the company's processes. For instance, a new application of technology in the company, such as an internal online crowdsourcing platform, may have a significant impact on work organisation, affecting aspects of working life. In addition, company investments in technology such as automation may lead to reorganisation, with effects on employment and types of contracts, as well as work organisation, work intensity, employee monitoring, health and safety, career prospects and development, and so on.

More specifically, the digitalisation-related issues regulated through collective agreements at all levels include the following:

- training and development
- work organisation models and humane work design
- working conditions, employment and industrial relations
- alleviating the risk of job losses
- telework
- platform work

Most of the relevant collective agreements identified include **training and development** provisions. Social partners are keen to assess the skills base of their organisations. For instance, the Austrian electricity supply sectoral-level agreement concluded in 2021 provides for an assessment to take place once a year within companies regarding the training and development needs of employees. As the sector is expected to undergo a transformation in the years to come due to the twin challenge of climate change and digitalisation (with the introduction of smart metering, intelligent networks, decentralised generation and so on), the social partners aim to future-proof the sector. To assist in this, external education and training providers will be invited to participate in related activities. Similarly, the Danish transport and logistics sectoral-level agreement acknowledges the imminent changes in the sector as a result of automation and the introduction of self-driving vehicles, and provides for 'smart' assessment of employees' competencies linked with the identification of training needs. The Finnish social partners that signed the collective agreement for white-collar employees in the technology sector in anticipation of the impacts of digitalisation call for sector-specific dialogue on the training needs of employees. The financial sector social partners in Romania agreed that 25,000 employees would be trained (starting from March 2020) with a view to addressing the challenges posed by digitalisation.

Company-level agreements such as those at the French telecommunications company Orange, the shipping company Eurogate (Germany), the Greek bank Piraeus Bank, the Dutch bank ABN AMRO and the car manufacturer Volkswagen (Slovakia) address training (among other issues). The Orange agreement provides for individual coaching to help employees use new digital tools. In anticipation of the digitalisation of operations, employees at Eurogate have a right to take part in an assessment of their occupational skills and participate in training and qualification measures according to their needs. Employees who are not needed in their current occupation will be moved to another job within the company. The Piraeus Bank company-level agreement includes clauses on timely

information and discussion with SETP regarding the company's plans for digital transformation and related education, training and development measures. Jobs created through the implementation of digitalisation and new technologies (for example, in e-branches) will be covered as a priority by the existing staff of Piraeus Bank. The 2020–2022 agreement covering ABN-AMRO includes plans to provide career advice and upskill employees so that they can work better in a digital work environment. Career advice for employees affected by changes due to digitalisation is also provided for in the new (2021–2022) Dutch retail sectoral-level agreement. Finally, following the design of new production engineering and a new production line in the Volkswagen plant in Bratislava, a company-level collective agreement provides for dual education.

Investment in digital skills is rightly emphasised in collective agreements and specific measures put forward, as workers are faced with certain difficulties in improving their skills. According to the 2019 Eurobarometer survey conducted by the European Commission, lack of time is the main barrier to improving digital skills (reported by 27% of respondents), followed by not knowing what specific digital skills they need to improve (24%) and, perhaps more alarmingly, lack of appropriate training opportunities (22%). The report shows that there are wide country variations in these responses (European Commission, 2020b).

Digitalisation is shifting **work organisation models** and the way employees work with each other and new digital technologies. References to work organisation are made in both sectoral- and (more commonly) company-level agreements. An example of a

cross-sectoral agreement addressing this aspect of digitalisation is the national-level framework agreement (2018–2021) on technological development and computer-based systems in Norway, which suggests collaborative schemes for the implementation of new technologies.

Important consequences of digitalisation in this regard are reflected in the provisions of sectoral-level agreements. Investments in digital infrastructure are accompanied by new work organisation schemes that require new forms of collaborative working, different organisational structures, new tasks and often new job classifications. These topics are regulated in the banking sectoral-level agreement and in the company-level Poste Italiane S.p.A. agreement, both concluded in Italy in 2019. Common solutions are sought through the banking agreement, under which a committee is to be established to provide recommendations to the parties.

The development of new collaborative ways of working is put forward as a solution to challenges posed by digitalisation in the provisions of the company-level agreement covering the French telecommunications company Orange. Establishing an employee-friendly internal online crowdsourcing model, in order to improve knowledge transfer for digital transformation within the German energy provider Gasag, was the intention behind the agreement reached by the company's works council and management. Provisions on forward-looking and humane work design, as well as employee data protection rights and employee surveillance issues, were agreed on by the parties (see Box 1).

Box 1: Example of a company-level agreement on work organisation, employee data protection rights and employee surveillance issues

Gasag, energy provider, Germany – works agreement on setting up an internal online crowdsourcing platform (2018)

The agreement, concluded by the Gasag group's management and the group's works council, is applicable to the entire Gasag group and provides for the establishment of an employee-friendly internal online crowdsourcing model, in order to improve knowledge transfer within the company. According to the agreed-upon definition of 'internal crowdsourcing', every employee in the company is welcome to develop ideas and solutions that can lead to innovative, market-ready products and services. Through the internal crowdsourcing platform, the company's management and works council seek to create new, innovative products and services but also to safeguard jobs and forge a path towards good digital work.

The agreement was intended as a transparent way to design an innovative online platform-based work environment (Schröter, 2018). Forward-looking and humane work design, humane work organisation and innovation management were emphasised, and digital transformation of the work environment facilitated. The parties also agreed that 'gamification' – applying typical elements of game playing, such as point scoring, to the internal crowdsourcing platform – could be a useful means of motivating employees to use it. The agreement also sets out standards on fair working conditions, occupational health and safety, and learning opportunities in the new work environment.

In addition to setting up the internal platform, the works agreement stipulates data protection rights for employees that go beyond the Federal Data Protection Act. The agreement does not permit any kind of online surveillance of employees and includes provisions aimed at strengthening employees' rights to control 'their personal data as well as [increasing] their trust in the company and its mindful corporate culture' (Otte et al, 2020, p. 161). Furthermore, the two sides agreed that performance monitoring of employees working on tasks linked to the platform would not be permitted.

During the testing phase of the new platform, a risk assessment will be carried out to evaluate the need for occupational health and safety measures in tackling risks such as psychological stress and increased work intensity, and issues relating to independent planning and collaborative efforts. After full implementation of the platform, risk assessments will be conducted as required.

Working conditions and industrial relations are another area on which social partners have focused with regard to digitalisation of production and service provision. Sectoral- and company-level agreements emphasise the need to assess the impact of digital technologies and their potential to improve employees' health – both physical and mental – and safety. For example, new technological developments can enable robots to undertake high-risk tasks, or machines and humans to work side by side to maximise capacity. At the same time, however, there are risks associated with work intensification and increased stress related to the introduction of such technologies. The Italian electricity and gas and water collective agreements (both concluded in 2019) provided for the establishment of joint national sectoral observatories to monitor the impacts of technology and promote the sharing of good practices among companies in the relevant sectors. Better integration of technology to manage workloads and measures to ensure job satisfaction and a good work–life balance are included in the sectoral-level agreements covering Danish medical staff (PLO and Danske Regioner) and the Dutch insurance sector (CNV Professionals and UWV). In the field of health and safety, of particular interest is the commitment to 'smart safety' included in the Protocol on Health and Safety and Environment of 9 October 2017 adopted by Eni S.p.A., a large energy company in Italy. The protocol aims to increase safety and reduce

accidents through the use of new technologies to monitor dangerous situations, manage emergencies and improve the performance of personal protection devices. For this purpose, Eni S.p.A. is developing IoT technology to be used, in line with privacy regulations, in an experimental phase.

Co-determination rights – whereby employees are represented on the supervisory board and/or board of directors of their company – are protected by the signatories (the Norwegian Confederation of Trade Unions (LO) and the Confederation of Norwegian Enterprise (NHO)) to the national-level framework agreement on technological development and computer-based systems (2018–2021).

Finally, the **risk of job losses** is a common concern among trade unions, which have been negotiating with employers on the various options available to workers who may lose their jobs to digitalisation. For instance, company-level agreements at Eurogate (Germany) and Poste Italiane S.p.A. (Italy) are concerned with ensuring that jobs are safe (see Box 2).

The insurance sector agreement signed by the social partner organisations CNV Professionals and UWV in the Netherlands responds directly to the challenges that digitalisation poses in relation to employment by agreeing on the creation of a safety net for employees affected by job loss (as well as training and professional development measures).

Box 2: Examples of company-level agreements on employment guarantees

Eurogate, port operator, Germany – company-level collective agreement on automation and an employment guarantee

The agreement was concluded in 2019 by Eurogate and the trade union ver.di. It deals with the possible impact of further automation and digitisation processes in the company and provides for an employment guarantee. Dismissals for operational reasons will be avoided until 2025. The parties agreed to upgrade employees' skills and qualifications, which will be assessed with a view to assisting in the provision of relevant training. Employees who hold posts no longer needed due to increased automation or digitisation of processes will receive an offer of another job in the company. If the new post is lower paid than the current one, Eurogate will uphold the current pay level for five years. Then the pay level will be gradually decreased for another five years until it reaches that of the new job.

In addition to these measures, the company-level agreement also foresees the introduction of a committee on automation. The committee will be made up of four employee and four employer representatives. In close cooperation with the management and works council, it will evaluate the scope and impact of automation and digitisation processes in the company and the HR strategy within the firm. Finally, new working time models were agreed.

Poste Italiane S.p.A., postal services provider, Italy – agreement on reorganisation and automation of processes

The agreement, signed on 8 March 2019 by the key Italian mail and financial services operator, includes plans to invest €150 million in physical and technological infrastructure, further automation of processes, and reorganisation, with the introduction of a leaner organisational structure. The agreement includes a number of measures to cushion the effects of reorganisation on employment (incentives for reassignment, internal redeployment, opportunities to shift to part-time work) and envisages significant employment creation through conversion of fixed-term contracts to indefinite contracts, employees moving from part-time to full-time work, and recruitment (of almost 3,000 full-time equivalent employees). The implementation of the agreement was accompanied in 2019 by further negotiations, and the reorganisation of postal services remained at the top of the agenda. Recently, in February 2021, a new round of bargaining began to address the increase in parcel deliveries, including as a result of the impact of the pandemic, and the decrease in traditional delivery services.

With the pandemic acting as a major stimulus, several collective agreements on **telework** have been concluded or renewed or have had new clauses added to them. Eurofound's COVID-19 EU PolicyWatch database includes such agreements concluded at sectoral and company levels, and forthcoming Eurofound work will provide more insights into the subject. Furthermore, the European Agency for Safety and Health at Work (EU-OSHA) has also investigated health and safety aspects of telework regulated through collective bargaining (EU-OSHA, 2021). The report argues that digitalisation will bring new and emerging OSH challenges but also opportunities to tackle risks, and that how these challenges and opportunities are balanced will depend on how the technology is implemented, managed and regulated.

In Austria, following the outbreak of the pandemic, the government asked the social partners to draw up detailed provisions of an agreement on 'home office work' to be implemented nationally through legislation (see Box 3). Even before this, teleworking clauses had been present in many Austrian collective agreements for years, with more detailed issues being delegated to works agreements. In Spain, CEOE, UGT, the Trade Union Confederation of Workers' Commissions (CCOO) and the Ministry of Labour agreed on Royal Decree-Law 28/2020 on remote work (September 2020), obliging companies to implement protocols to recognise and regulate the right to disconnect for teleworkers, while reinforcing collective bargaining as the mechanism for developing these protocols. Belgian social partners regulated the topic of 'compulsory or recommended work from home' through a national collective agreement. The agreement was signed in 2021 (Collective Agreement 149) and is due to expire by the end of the year. Agreements covering the medical transport and public administration sectors in Spain in 2020 established an observatory and a commission to study the implementation of telework. Several clauses in agreements on telework and the right to disconnect have also been reported in other countries (for example, Bulgaria and Romania).

Box 3: Example of a collective agreement on telework

Austrian social partners' agreement on telework preceding legislation (2021)

The agreement was concluded by the peak-level social partners: the Austrian Trade Union Federation (ÖGB), the Austrian Federal Chamber of Labour (BAK), the Austrian Federal Economic Chamber (WKO), LKO and the Federation of Austrian Industries (IV).

Home office work is to be agreed upon between the employer and the employee (in writing). There is no unilateral obligation or right to work from home; home office work is voluntary, and both sides have the right to withdraw from a home office agreement. An agreement can also be terminated with one month's notice if an important reason to do so arises (for example, a change in family situation or living situation). Works agreements on home office work can be concluded (in companies with a works council), but this is not obligatory.

Workplace: According to the legislation, home office work occurs when people work in their home (including a secondary residence or the apartment of a close relative or partner). Thus, mobile work in public places (such as co-working spaces, cafés and parks) does not fall under the home office regulations.

Equipment and office supplies: The employer is obliged to provide the necessary digital work equipment, but employees in the home office can agree with their employer that they will use their own work equipment (for example, their own laptop or cell phone and their own internet connection). If they do so, they are entitled to reimbursement of their expenses, for example in the form of a flat rate (to be determined either on a case-by-case basis or in a works agreement).

Tax regulations/flat-rate payments: Flat-rate payments by the employer are tax-free up to €300 per year (up to €3 per home office day, up to 100 home office days per year). If the lump sum is not exhausted by the employee, they can claim the difference up to the maximum of €300 as income-related expenses. In addition, the employee can tax-deduct the cost of the purchase of ergonomic office furniture up to an amount of €300 per year (this provision has effect retrospectively for 2020).

Damage to work equipment: The provisions of the Employee Liability Act apply also to the home office (including damage done by household members or pets).

Health and safety/ergonomics: The employer is obliged to ensure that the home office is ergonomically designed and that questions relating to the protection of the employee's health and safety are answered and resolved. The social partners are working with the Labour Inspectorate to develop information materials.

Working time/working hours: All provisions of the Working Hours Act and the Rest Period Act and the applicable provisions of the Employee Protection Act also apply in the home office. That means that – unless otherwise agreed – the same working hours apply at home as would in the office. Provisions on agreed overtime also apply.

Accident insurance protection: Employees are insured in the home office in the event of accidents. Accident insurance cover in the home office (which was originally limited until the end of March 2021) has been made permanent. This also applies to accidents that happen on the way from the home office to the workplace or to a doctor's appointment, or when taking children to kindergarten or school from the home office, or when returning to the home office from any of these locations.

Cross-sectoral agreements regulating telework have been concluded in France and Luxembourg. The French cross-sectoral agreement on telework, which was signed in November 2020, regulates the costs of telework in crisis situations and provides for the right to disconnect. The interprofessional agreement regulating telework in Luxembourg was signed on 20 October 2020, replacing the 2006 agreement, and introduced a number of amendments, for example to the definition of the workplace for telework. The agreement no longer refers to the home of the worker as the workplace and now defines telework as work taking place outside the employer's premises. Another amendment allows the possibility of occasional telework, which is now defined as telework that it is performed to deal with unforeseen events or that represents less than 10% on average of the employee's annual working time.

In Slovenia, the Strategic Council for Collective Bargaining of the Chamber of Commerce and Industry of Slovenia (GZS) adopted 'common starting points' for the regulation of home working in collective agreements.[6] With regard to home working, employers should ensure safe and healthy working conditions and regulate the protection of employee privacy and the protection of business secrets.

Discussions are still in progress in some other countries (Cyprus and Norway). In Cyprus, discussions on telework regulation started more than a decade ago; however, despite renewed discussions during the pandemic, at the time of writing (March 2021), structural social dialogue was yet to be initiated. Both trade unions and employer organisations in Cyprus have some concerns regarding teleworking. For the Cyprus Worker's Confederation (SEK), the main concerns include equal rights for teleworkers and non-teleworkers, regulation through collective agreements, the consent of teleworkers, working conditions, health and safety, and work organisation. Cypriot employers are in favour of reopening dialogue on the regulation of telework, but the Cyprus Chamber of Commerce and Industry (KEBE) voices concerns regarding productivity monitoring, support for workers and smooth operation of businesses.

At company level, some examples of telework agreements have been reported. A 2020 collective agreement at Nokia Transformation Engineering and Consulting Services Spain, signed by the management of the company and the company's works council at national level, regulates the right of employees to telework one day per week where this does not result in

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6   The Slovenian Employment Relationships Act stipulates that telework, which is performed by an employee using 'information technology', is also considered 'work at home'. No definition is provided for 'information technology'. The law stipulates that a worker is entitled to compensation for the use of their assets (for example, a personal computer or a printer) while working from home. The amount of compensation is to be determined in the employment contract.

> ## Box 4: Example of a company-level agreement on platform work
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> *Foodora, food delivery platform, Norway – company-level agreement covering food couriers (2019 and 2020)*
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> The company-level agreement between Foodora and Fellesforbundet, concluded in 2019, regulated pay and working conditions for food couriers working for Foodora. The collective agreement includes minimum wage rates, reimbursement for equipment, extra pay in winter and a collectively agreed early retirement pension. The agreement also gives the food couriers the right to negotiate, and information and consultation rights. In 2020, the agreement was renegotiated. In the new agreement, the couriers obtained an improved seniority rate and a minimum wage guarantee.

additional costs for the company. The collective agreement covering the Spanish broadcasting company Corporación de Radio Televisión Española, signed by the management of the corporation, UGT and SI in December 2020, regulates the conditions for teleworking, including working time, data protection, technical equipment, training, health and safety, and trade union rights. Two other agreements have regulated telework and the right to disconnect at company level, one involving La Poste Luxembourg (Convention collective 3.0), which was signed in December 2020, and another concluded by Allied Irish Banks (AIB) and the Financial Services Union (FSU) in 2020 (RTÉ, 2020).

Platform work has been an issue heavily debated by social partners, with trade unions and employer organisations frequently having opposing views. Owing to the characteristics of this form of work (which include the fragmentation of work into individual tasks and the geographical dispersion of the workforce) and the unclear employment status of platform workers, it is difficult to identify the relevant representation structures (Eurofound, 2018a, forthcoming). As a result, it is hard to find any collective agreements. In April 2018 in Denmark, a collective agreement was signed for the first time between a trade union (3F) and a platform operator (Hilfr). Following that, a company-level agreement was signed in Norway by the food delivery company Foodora and Fellesforbundet; the agreement regulates pay, working conditions, and information and consultation rights for food couriers (see Box 4).

Forward-looking and anticipatory collective bargaining

While traditionally collective agreements tend to emphasise pay and working time, there are a few practices adopted by social partners at various levels that demonstrate anticipatory and forward-looking approaches to the regulation of social aspects of digitalisation. A full mapping of collective agreements across Europe might reveal more such practices; however, the examples identified in this research could help social partners to explore further opportunities. For instance, some agreements aim to introduce activities to anticipate the effects of digitalisation. Recent developments in banks include using wearables to enable customers to make contactless payments, blockchain to make transactions transparent, and AI for data analysis and security. The Italian banking sector has recently seen accelerated service digitalisation, redefinition of operating models and leveraging of the power of data. The 2019 sectoral-level agreement aims to anticipate and respond to the required changes to banking jobs, tasks and occupations as a result of digitalisation (see Box 5).

Moreover, social partners have in some cases agreed to set up monitoring mechanisms to analyse developments in their sectors regarding digital technologies, their adoption, and the impacts on organisations, occupations, skills and so on. They have also made efforts to promote new collaborative ways of working, to take advantage of the benefits provided by digital technologies. Furthermore, they have adopted joint principles (for instance, in Finland; see Box 5) and 'common starting points' for the regulation of home working in collective agreements (as in the case of the Strategic Council for Collective Bargaining of the GZS in Slovenia). The Danish Sectoral Working Environment Committee (a collective forum funded by the social partners in the industrial sector) has provided guidelines for businesses regarding the use of digital technologies to improve the work environment and achieve benefits. It showcases interesting examples of various businesses whose digitalisation practices have been beneficial to both the business and its workers and have reduced accidents at work.

Other social partners have taken broader approaches. For example, in 2021, KL, the association and interest organisation of 98 Danish municipalities, created a new network dedicated to robotic process automation. The objective of this network is to set up a forum where ideas and knowledge about automation of manual processes can be discussed and related actions promoted.

Box 5: Examples of forward-looking and anticipatory practices in collective bargaining

Agreement on joint principles on digitalisation, Finland

In 2019, the peak-level social partners agreed on joint principles on digitalisation and AI. The partners recommended that Finnish actors ensure that:

- skills are developed for the digitalisation and AI era
- workplaces receive adequate support when introducing new technologies and new procedures
- coherent and fair rules are in place (for example, on data use and security)
- cooperation of public and private actors is promoted for a well-functioning country (for instance, in the form of joint, open projects and synergistic national policies on innovation, education, research and data)

Banking sector agreement, Italy

Recognising the fast pace of digitalisation in the sector, the 2015 agreement had already set up a joint national sectoral observatory to monitor the impact of digitalisation on trade union representation and work organisation. With the renewal of the agreement in 2019, it was provided that a national joint committee be established, the objective of which would be to analyse changes due to new technologies and digitalisation with a view to developing shared solutions (Article 29). Following on from these analyses, the parties to the agreement are to identify new tasks, work organisation schemes, occupations and job classifications needed for the sector to operate smoothly.

Finally, it should be noted that, while social partners have been working jointly on concluding collective agreements, they have also undertaken joint projects and research on topics related to digitalisation and its impacts on work organisation and employment, preparing for future changes in the structure and content of social dialogue. In addition, trade unions and employer organisations have conducted their own research on the topic (see Chapter 3 for more details).

In brief

Digital forms of consultation launched by governments and involving social partners were already well established in some of the countries covered by the research, but the COVID-19 pandemic has been a turning point, insofar as the opportunities presented by (and certain limitations of) this form of consultation were put to the test. Collective bargaining rounds that have traditionally taken place in the form of face-to-face meetings were conducted (where possible) online. Social partners appreciated the possibilities offered by digital technologies for engaging in consultation with public authorities and organising their collective bargaining processes, while recognising limitations and the need for further action (for example, upgrading the digital skills of their members). Organisations consulted with members at regular intervals or on an ad hoc basis using digital tools to determine priorities for the collective bargaining agenda and respond appropriately to policy debates. Digitally supported meetings enabling wider member participation – for example, collective bargaining preparatory meetings – are likely to continue and expand in the post-pandemic era. Collective bargaining negotiations, being fundamentally a social process, will continue to rely on trust, human interaction and non-verbal communication (such as body language), which calls for physical meetings. Future options for hybrid forms of both consultation and collective bargaining are already being considered by the social partners.

Acknowledging the immense role of digitalisation in increasing productivity and its impact on work and employment, social partners have signed agreements to accelerate the adoption of digital technologies, with a human-centred approach being essential to such initiatives. A number of collective agreements have been identified across Europe (in half of the Member States) and in Norway and the UK. Fewer instances of such agreements have been reported in central and eastern European countries. Examples of sectoral- and company-level agreements suggest that there is still a lot of potential for the social partners to regulate this important topic, in all Member States. The reported collective agreements have given priority to digitalisation-related aspects such as training employees and upgrading their digital skills, changing work organisation to include new work tasks and new forms of work (for instance, remote working), preparing for new jobs and occupations, regulating data protection and prohibiting intrusive employee monitoring, anticipating health and safety risks associated with digital technologies, and addressing job loss.

3 | National debates on the future of social dialogue in the digital age

Social partners have studied and debated the effects of digitalisation on economic sectors and society to prepare their organisations and members for future developments and to monitor the need to regulate the topic. This chapter examines discussions on digitalisation and the future of collective bargaining as reflected in national debates, research papers produced by social partners, and their published deliberations.

Digitalisation and its impact on social dialogue

While many social partners have conducted studies about the future of work in the digital age, only a few have published documents about the future of collective bargaining and social partnership in the context of digital transformation. Studies and research conducted by trade unions and employer organisations and the deliberations of their working groups suggest that digitalisation may affect social partners themselves, social partnership and collective bargaining in certain ways. Actions to be adopted in this regard will be identified through the democratic processes followed by the social partners.

Transformation in sectors and their coverage by collective agreements

In terms of social dialogue, a Finnish study has found that the sectoral coverage of collective agreements is an important factor insofar as an increasing number of workers in sectors likely to grow as a result of digitalisation may be employed in companies not covered by a collective agreement (Tekijälehti, 2018). In France, the transformation of sectors, occupations and digital skills is at the heart of discussions. Concerns include anticipating changes in occupations and preventing skills mismatches. According to a paper produced by the Spanish trade union CCOO (2019), strengthening the role of labour relations and collective bargaining in economic sectors and companies engaged in digital transition should be a priority. Meanwhile, studies carried out by the collaborative platform IdeaDiffusa, created by the Italian trade unions CGIL,

CISL and UIL, have found changes in the content of work due to emerging technologies.[7] Among responses to the findings of such studies, trade unions have developed handbooks on bargaining on digitalisation and a set of proposals for training trade unionists on digitalisation. The UK trade union Unite has developed templates for agreements covering aspects of new technologies, some of which pertain to the introduction of digital technologies into the workplace and aim to assist trade union officers and workplace representatives in their negotiations with employers. Several sectors are expected to be affected by digitalisation of production and processes; however, SMEs and microenterprises are likely to face particular challenges because of their varying degrees of digital maturity (often lower then average), as reported by all Greek employer organisations (SEV, 2020; GSEVEE, 2021; ESEE, 2021). This highlights the urgency of social dialogue responses, as suggested by the Greek employer organisations. At a recent conference, *Developing sectoral collective bargaining* (December 2020), both trade unions and employer organisations in Latvia emphasised the importance of the role of sectoral collective bargaining and their future partnership in the context of digitalisation, changes in the labour market and the emergence of new forms of employment. Therefore, the two peak-level organisations, the Employers' Confederation of Latvia (LDDK) and the Free Trade Union Confederation of Latvia (LBAS), agreed to work together to find solutions at sectoral and company levels.

Shift in collective bargaining to company or establishment level

Digitalisation may be a factor contributing to a shift in negotiations from sectoral to company or establishment level. The Finnish employer organisations, and in particular Technology Industries of Finland, are willing to move from sectoral-level to local-level negotiations (Technology Industries of Finland, 2020). One of the key arguments in favour of this shift is the impact of digitalisation on productivity and thus the need to have more flexible arrangements (for instance, in terms of wages) than the current

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sector-based system allows for. It is argued that companies operate in different contexts and need to have flexibility in regulating the employment relationship (Mäenpää, 2017). Similarly, the Italian organisation Assolombarda (the member of Confindustria representing the Brianza, Lodi, Milan, Monza and Pavia regions), in its publication on the future of manufacturing, argues that digital transformation requires decentralised bargaining and participatory practices. It maintains that collective negotiations at a lower level would be more suitable given the changes in the workplace associated with digitalisation in manufacturing (Assolombarda, 2020). On the other hand, trade unions consider that decentralisation may cause inequalities in protection and rights for workers within a given sector. A key question in this debate is the extent to which social partners can sustain an organised approach to decentralisation, rather than a disorganised one (Crouch, 1993). In organised decentralisation, the various levels of collective bargaining are well articulated and coordinated, while in disorganised decentralisation the links between levels are weak and outcomes are often unclear, resulting in uncertainty.

Need for more innovation in future collective agreements

Social partners are concerned about the future of collective bargaining in the digital age. The Confederation of German Employers' Associations (BDA) highlights the positive impact that digitalisation could have on all companies and invites other employer organisations and trade unions to conclude innovative collective bargaining agreements and include topics such as continuous training and flexible working time schemes (BDA, 2020a).

The German trade union ver.di has taken part in several research projects related to digitalisation, including in connection with the current and future collective bargaining agenda (ver.di, 2020, undated). The trade union has investigated several topics linked to the future workplace, such as agile work, cloud and crowd work, and co-determination rights. In the context of its research on agile work, ver.di indicates that it expects to see new forms of work organisation. The trade union has been deliberating with its members on whether and how these issues will be subject to collective bargaining in the future. Expanding the collective bargaining agenda to cover issues not currently included, such as platform and self-employed workers, is advocated by the Czech-Moravian Confederation of Trade Unions (ČMKOS) in one of its reports on the fourth industrial revolution (Šulc et al, 2019).

In terms of their role in the context of Industry 4.0, the Greek peak-level social partners have undertaken joint activities with the aim of creating a multifunctional and complementary mechanism to identify national labour market needs. This work will strengthen the institutional role of social partners in the context of a renewed social dialogue. The Spanish social partners (CCOO and CEOE) agree on the need to strengthen the role of social dialogue at all levels, and CEOE has suggested setting up a committee with the participation of social partners, government and professional associations in the technology field to discuss future challenges (CEOE, 2018; CCOO, 2019).

Exploring new avenues for concluding collective agreements in the future, such as applying them to all workers regardless of whether their employers are members of an employer organisation, is among the possibilities linked to digitalisation that the Finnish trade unions have suggested. Digitalisation of the economy means that new sectors emerge and jobs in many traditional sectors decrease due to increased automation. As a result, a growing part of the workforce will be employed by enterprises not covered by a generally binding collective agreement or will be working in sectors where no collective agreements are applied (Tekijälehti, 2018).

New forms of employment bring new actors and services

Occupational changes and new forms of employment (for instance, platform work) arising from digitalisation (sometimes in combination with other labour market trends) result in the emergence of new actors (trade unions and industry or employer organisations) to represent new categories of workers and companies.

The question of new forms of employment is raised frequently within the French General Confederation of Small and Medium-sized Enterprises (CGPME), representing SMEs and small companies in particular. The self-employed in France are no longer concentrated in traditional sectors, such as crafts, medicine and the law, which are strongly regulated by professional organisations. Instead, the 'new' self-employed are more likely to be active in jobs related to communication, design and corporate consulting, making use of digital technologies. As a result, new organisations dedicated to non-standard forms of employment are emerging: in 2019, two associations dealing specifically with the legal status of 'microentrepreneurs' were created, while freelance unions have emerged to organise the self-employed. For instance, in 2016 CFDT created UNION, a platform to offer services and give a voice to self-employed workers and workers with multiple jobs. There is also the association Indépendants.co, which aims to represent self-employed workers and make their voices heard. Finally, another organisation, the Association of Independent Platforms (API), represents platforms.

Future developments in these organisations may eventually affect more established social partner organisations. The emergence of new actors representing new categories of occupations and companies raises the issue of their representativeness and will eventually give rise to the question of whether they should be included in negotiations.

In some countries and industries, trade unions have been working on creating unionised groups among platform workers (for example, in the transport sector in France and the metal sector in Germany). In Germany, an association representing platform employers, the Crowdsourcing Association, was set up as early as 2011. The association facilitates business exchange and knowledge transfer among its members. A code of conduct for platform companies created by the German platform Testbirds in 2015 is also supported by the association. In 2017, the latter, with the metalworkers' trade union IG Metall, also set up an arbitration board for dispute resolution.

Trade unions agree that digitalisation is likely to lead to the transformation or emergence of new organisations. The Slovakian trade union MOV, studying the risks and potential benefits of digital technologies, has noted that, as workers obtain new (digital) skills and qualifications, the membership of trade unions will change or new, more flexible trade unions will emerge. Finally, GSEE is of the view that digitalisation will make some professions obsolete and change the content of many more but that it will also create new occupations and jobs, fuelling growth in production and employment. GSEE expects that, in preparation for these changes, trade unions in the digital technology sectors will emerge (INE-GSEE, 2020).

The changes described above are also associated with changes in the types of services offered by the incumbent organisations. The French trade union confederation CFDT, with the aim of addressing the challenges that freelancers and platform workers face, has been providing services and support to self-employed workers to help them deal with contractors and protect themselves (for example, in relation to legal issues and occupational health and safety). Similarly, the Central Organisation of Finnish Trade Unions (SAK) argues that platform work and the erosion of the traditional employer–employee relationship will require Finnish trade unions to be more agile and offer services that better accommodate the needs of workers (not only those in permanent full-time jobs) (SAK, 2017), while the Spanish trade union CCOO has already developed web-based services targeting platform workers (to attract and support new members).

Limited debate on the future of collective bargaining in the context of digitalisation

There are various reasons for the lack of debate noted in some countries with regard to the future of social partnership in the context of digitalisation of the economy. In some countries, the social partnership is strong enough that digitalisation is not expected to threaten it (for instance, in Austria and Cyprus). In others, the situation is the opposite: because the social partnership is not well developed, such discussions usually do not take place (for example, in Hungary and Lithuania). In some countries, the topic has been of little concern to the social partners because the application of technological solutions, in general, is considered part of the discretionary power of the employer, and therefore it is left to companies, rather than the social partners, to manage the issues (this is the case in Czechia, Hungary, Slovakia and Spain). Furthermore, a study analysing social dialogue in the context of digitalisation in Spain found that the lack of engagement of social partners on this topic may be the result of a combination of reasons, including low innovation rates, low awareness, and the concentration of social dialogue on certain key issues such as wages and working time (Rocha and De la Fuente, 2018). It should be acknowledged that not all aspects of digitalisation and its impacts on work are well understood by all social partners, which may explain the lack of initiatives. The point was clearly made by experts from the Latvian social partners LDDK and LBAS in a debate on the future of sectoral social dialogue at their joint conference *Developing sectoral collective bargaining*, held on 9 December 2020; they argued that case studies collecting experiences related to the acquisition of digital skills, work organisation and other relevant issues would help to illuminate these various aspects of digitalisation. The Latvian social partners recognised that the European social partners' autonomous framework agreement on digitalisation plays a significant role in clarifying relevant issues. The Hungarian trade unions (specifically the National Federation of Workers' Councils (MOSZ)) advocate clearly communicating the benefits of and the risks posed by digital technologies and exchanging experiences and practices with other social partners. Other social partners have also conducted studies on the topic (for example, KOZ SR, 2020).

Topics of interest

Concerns about the future of work have given rise to debates and deliberations by social partners on Industry 4.0, digitalisation, new business models, new forms of work and so forth. The future of work will undoubtedly be shaped by digital technologies, which are a central theme of these debates.

Trade unions and employer organisations have conducted studies both jointly and separately to investigate the future of work in the digital age; the Network of Eurofound Correspondents covered these studies in their reports for this topical update. These studies have investigated opportunities and potential challenges to be considered to achieve a seamless transition to a digitalised business and work environment. While each social partner organisation has set its own priorities, there are some topics that social partners agree are particularly important, albeit with differing actions or emphases suggested. Across the Member States, the topics heavily debated and studied in relation to digitalisation and the future of work include the following:

- digital skills, education and training
- AI and robots
- new forms of work and platform work
- telework and remote work
- work organisation and new organisational models
- stress at work
- data protection issues and cybersecurity
- unemployment and employability issues

It is notable that all the topics have to some extent already been raised in collective agreements (see Chapter 2); however, debates and research conducted by the social partners suggest that they expect more intense negotiation and consultation on these topics in the future as digital methods of production and service provision expand. The effects of the COVID-19 pandemic should not be disregarded, as they have changed the priority given to certain topics. For instance, telework is a topic that most social partners across Europe plan to address in the short or medium term, including those that had not prioritised it prior to the 2020 crisis. In addition, other developments have taken place because of the pandemic: for example, governments have introduced or expanded digital strategies, and private companies and other organisations have been experimenting with digital solutions in production and service provision.

It is hardly a surprise that the topic of digital skills and training is a priority, as it has long been debated at both national and EU levels by social partners. Similarly, challenges and opportunities emerging from new forms of work, including platform work, are also prioritised, but trade unions and employer organisations have different concerns. For example, in some countries, employer organisations are less keen on further regulating platform work, while trade unions want to see it better regulated. Social partners anticipate new work organisation models and agile work emerging as a result of digitalised forms of production. Therefore, social dialogue should pay attention to different types of work organisation, prepare companies and workers for the coming changes, and support them in managing them. New digitalised forms of production bring with them new health and safety concerns. Furthermore, digital tools for monitoring workers and collecting data need to be regulated through either social dialogue or legislation.

While both sides agree on the importance of these topics, trade unions and employer organisations have each identified specific issues to be addressed and opportunities to be seized. These are presented in the following subsections.

Digital skills, education and training

As mentioned earlier, both sides agree on the importance of training to ensure that the workforce has the skills required for digital transition. Trade unions have raised the issue in studies and position papers and at conferences, and digital skills are a key concern for employers as well.

Some employer organisations emphasise the need for a higher-level approach to training and skills acquisition on topics related to digitalisation, going beyond the company level. The German employer organisation BDA maintains that there is a need for efforts in this regard across all educational institutions: kindergartens, primary and secondary schools, tertiary education institutions, and vocational and further education providers. It also argues that the federal skills strategy needs to be renewed with a view to achieving a successful digital transition. Finally, the employer organisation suggests that innovative collective agreements should be concluded to support further training initiatives (BDA, 2020a).

Similarly, the Confederation of Netherlands Industry and Employers (VNO-NCW) has stated that school curricula should include technological subjects. In the same vein, the Greek employer organisation SEV argues in favour of the development of a national skills plan for the digital economy, with programmes developed across educational institutions. To ensure better connections between the labour market and universities, SEV supports the development of apprenticeship programmes, as well as the funding of 15% of PhDs in Industry 4.0 topics by employers.

The Confederation of British Industry (CBI) has remarked that, with demand outstripping supply, businesses cannot address the lack of digital skills on their own, and that the government must set an ambitious goal in this respect. A CBI study conducted in 2019 identified core actions that need to be taken in the future to strengthen the digital skills ecosystem (CBI, 2019). Developing a long-term digital vision is at the heart of these actions, as are collaboration between education providers and businesses, and the use of apprenticeships to create more digital roles. At company level, the CBI study suggests, digital skills should become a priority across organisations, hidden skills among the extant workforce should be exploited, and retraining at work should be offered. Organisations could also develop digital skills in collaboration with their supply chains or local SMEs.

Also focusing on company level, the Italian Confindustria Digitale organisation highlights the role of training for middle managers in supporting workers to adopt new technologies. The point made is that, if companies need to develop 'smart workers' and a digital footprint, then they need to start with middle managers. They are the ones who need to support employees to become 'smart workers'. In addition, training in digital skills should be provided across organisations.

The emergence of AI in the business world means reskilling of the workforce, which is one of the key concerns of the Irish employer organisation Ibec. Social partners in Luxembourg point out that certain categories of workers – such as craft workers, often less exposed to digital technologies – may need to update their skills, and in the case of entrepreneurs their companies, to prepare for digital transition. Czech employers argue that since automation and robotics entail entirely new requirements with regard to the education and qualifications of employees, training needs to be prioritised. The research project Competence 4.0, commissioned by the Confederation of Industry of the Czech Republic (SP ČR) with other organisations, aims to create a tool for mapping the competencies required in the future and to provide support for cooperation between companies and educational establishments, with an emphasis on the implementation of selected elements of dual education. In the Netherlands, various public actors, educational and research institutions, the business community and citizens have come together to create the Netherlands AI Coalition (NL AIC) (trade unions are not involved). The objective of the coalition is to put the country in a leading position regarding the development and application of AI knowledge.

The potential benefits of AI in terms of increasing productivity and creating jobs are recognised by the Social and Economic Council of Flanders (SERV), a bipartite advisory body consisting of representative

trade unions and employer associations (SERV, 2019, 2020). However, SERV points out that certain conditions need to be met for these benefits to be realised by companies, including a certain degree of digital maturity; a strategic plan; investments in infrastructure, expertise and trained personnel; and a change in culture.

Artificial intelligence and robots

The area of AI and robotisation is multidimensional and touches on many of the other topics mentioned in this section. It is related to new forms of work, new forms of work organisation, reskilling, job loss resulting from technology, and stress at work, among other issues.

In looking at future challenges in studies and debates on digitalisation, social partners make frequent references to AI and robots as key enabling technologies. Several studies analysing future sectoral developments examine sector-specific technologies (for example, blockchain in the commerce sector, IoT in manufacturing); however, AI and robotic technologies are also mentioned quite often in a more general context in social partners' debates and studies. While the impact of automation on functions such as the manufacturing of goods and the provision of services (for instance, in the retail sector) is well recognised, far less attention has been paid to the rapid development of AI to carry out management functions. Aspects of the employment relationship (for example, decisions on recruitment, line management, monitoring and training) are increasingly being managed by AI instead of people. A (non-representative) survey conducted for the UK Trades Union Congress (TUC) found that many workers do not know what these AI-powered management tools are, how they operate or what their impact is (TUC, 2020).

Concerns about the risk of unemployment due to robotisation are common among trade unions (for example, in Croatia, Finland, Hungary, the Netherlands and Slovakia). Unemployment resulting from the challenge of robotisation of work (and demography) could be reduced by introducing a tax on robotised work, some trade unions argue (for instance, the Dutch Trade Union Federation (FNV) and MOV in Slovakia). Following widespread robotisation in the Croatian commerce sector, such as robot-operated warehousing activities, one study recommends strengthening the social partnership to address the negative impacts of automation on work, including on health and safety (Knežević and Butković, 2020). Given the rapid spread of these technologies, more information on their potential uses, human–machine interaction and impacts on work is clearly needed, as the Hungarian trade union MOSZ has emphasised, advocating for effective communication strategies.

Social partners have participated in working groups to shape the AI agenda. In Germany, digital summits have been organised by the federal government since 2006, with social partners represented on the working group on AI. The aims of the group include exploring possible social partner solutions when implementing AI systems at establishment level; discussing data protection rights, certification and regulation of AI systems; and exploring international perspectives. The AI working group is chaired by the Federal Ministry for Labour and Social Affairs and vice-chaired by the IG Metall trade union, with the participation of several trade unions and employer organisations as well as researchers and representatives of business.

Employer organisations have also been debating the impact of AI on business and work. Some have suggested a national strategy on AI and open data (for example, NL AIC and SEV).

New forms of work and platform work

The future of work in the context of digital production and processes may involve challenges relating to new forms of work and platform work, as trade unions emphasise. More specifically, the French trade unions see a need to further regulate freelancers in the services sector (some action in this regard has already been undertaken by CFDT). They also observe that those new forms of work involving remote work of various kinds may reduce opportunities for workers to work together in the same physical place, which brings some disadvantages (for example, it may make it more difficult for workers to organise). Social protection for self-employed workers, bogus self-employment, zero-hour contracts, banded hours, precarious work and on-demand work more generally will continue to be on the agenda of trade unions (for instance, in Bulgaria, Germany, Ireland and Romania). The impacts of these new forms of employment on the welfare model will also need to be further examined. A great number of trade unions (such as the German Trade Union Confederation (DGB)) believe that there will be a continued need to address issues related to the regulation of platform work in the future, including with regard to the terms and conditions of platform workers, the co-determination rights of crowd workers and social protection (DGB, 2019). In the Nordic countries, one study suggests, while platform work may lead to disruptive institutional change, the dynamism of the Nordic labour markets could result in the pragmatic incorporation of this type of work into the social dialogue institutions (Dølvik and Steen, 2018).

Some employer organisations favour regulation of some new forms of employment through legislation, while others are keen to see the issues tackled bilaterally (for example, BDA in Germany (BDA, 2020b, 2020c) and Lithuanian and Romanian employer organisations). Other suggestions for future action include streamlining the rules and adopting a European, global or international perspective with regard to platforms, as advocated by VNO-NCW (MKB-Nederland and VNO-NCW, 2019). The organisation draws attention to economic opportunities as well as social issues. CPME, the French organisation representing SMEs, has a strong presence in the services sector and raises the issue of new forms of employment and in particular freelancers, self-employed workers, gig and crowd workers, and posted workers. Some form of regulation is among the solutions debated by its members, particularly with regard to flexible working hours and nomadic work. Similarly, the Italian organisation Assolombarda, in a white paper on the future of work, argues that new technologies will significantly transform work and occupations, and that new regulation will be needed to govern platform work and flexible employment contracts (Assolombarda and Adapt, 2018).

Telework and remote work

The physical space where work is carried out is an important aspect of the employment relationship for trade unions, as workers interact and organise themselves when they are together at work. Trade unions (in Hungary, Malta and Poland, for example) argue that a reduction in the presence of workers in a collective workplace as a result of digitalisation could promote an individualistic culture, giving rise to individual negotiations and creating a barrier to collective action and collective bargaining. Trade unions in several countries (Belgium, Cyprus, Czechia, Germany, Greece, Latvia, Lithuania, Portugal and Slovenia) are keen to establish a regulatory framework on telework and remote work. The framework could set out rules on how telework and mobile work are to be implemented, establishing legal rights, laying down provisions on pay and working time, regulating issues around the health and safety of employees, and setting out requirements regarding the home workplace and conditions for performing telework. Furthermore, with regard to remote work, trade unions in Portugal and Romania are particularly concerned about ensuring a good work–life balance, enhancing digital skills, addressing work intensity and stress, ensuring that employee monitoring is fair and protecting employees' privacy rights. It has also been pointed out that, with work becoming more delocalised (through telework and remote work) and task specifications and standards becoming fragmented, there is a risk of workers misunderstanding their job requirements and expectations (role ambiguity). This may become a psychosocial risk – i.e. a health and safety risk – that needs to be addressed (Christensen et al, 2020).

Employer organisations, on the other hand (for example, in Cyprus, Germany, Poland and Romania), are keen to see issues relating to telework and remote work settled at company level or regulated through collective agreements. The Belgian employer organisation FEB/VBO considers that a decent framework for obligatory telework can produce win–win results, increasing productivity and employee well-being. Employer organisations in Ireland and Latvia have raised the importance of data security and GDPR issues in remote working situations. Employer organisations and trade unions recognise the importance of personal interactions within teams and in physical spaces, which are important for developing a company culture and team cooperation.

Work organisation and new organisational models

Social partners on both sides agree that digitalisation of production and services will affect work processes and that new forms of work organisation will emerge as a result. Job content and job descriptions will change to facilitate more agile work, and trade unions recognise that workers need to be supported during this transformation, as concluded by ver.di in its diGap research project.[8] The trade union found that hierarchical structures with command-and-control mechanisms requiring approval of actions at successive managerial levels are not suitable for agile work. Preparing managerial staff to deal with different work organisation models will be a prerequisite for a smooth transition. Planning agile projects needs to involve the whole project team, so that everyone has a good overview of production times and workload. Changes in job content and tasks should be managed to ensure that they do not have a negative effect on' workers' autonomy (according to the CGIL in Italy), job quality (as the National Confederation of Free Trade Unions in Romania – Brotherhood (CNSLR Frăția) points out), and job enrichment and flexibility of work (says the Slovakian Metal Trade Union Association (OZ KOVO)). At the same time, robotisation can reduce physical demands on workers in some sectors, which will also present opportunities for reskilling (according to MOV in Slovakia).

A government-appointed committee debating and researching the future of work in Norway, with the participation of social partners, points out that digitalisation-induced changes to work organisation will also affect forms of employment (Regjeringen.no, 2021).

While not a core work organisation issue, working time is strongly related to it. On this topic, the trade unions (for instance, in Austria, Ireland and Luxembourg) stress the need to adapt or reduce working hours, whereas employers are more likely to emphasise increased working time flexibility.

Employers stress the importance of leadership in building mutual trust, commitment and responsibility, and the capacity to work to objectives; they also emphasise the need for leaders to bring about cultural change and support workers' well-being (Confindustria Digitale, 2020). They recognise how important the human factor is in the digitalisation process and anticipate participatory practices forming part of the new work organisation models. By involving employees in digital processes, they hope to ensure productive human–machine interaction, tapping into opportunities for mutual learning. This will entail investments in human capital and efforts by middle managers, who will be required to support workers (according to Assolombarda and Confindustria Digitale in Italy, the Danish ICT and Electronics Federation (DI Digital), SEV in Greece and the abovementioned Norwegian committee on the future of work).

Stress at work

The topic of stress was mentioned mostly by trade unions, who are concerned about stress arising from the introduction of new technologies without proper training or from the fast pace of technological change ('technostress'). Trade unions (in Croatia, Denmark, Estonia, Hungary, Norway and Slovakia) also mentioned other psychosocial risks and mental health issues, and more generally health and safety concerns related to technologies introduced into the workplace. Digitalisation may increase work intensity and/or disrupt work–life balance and as a result cause stress. Furthermore, trade unions warn that it may reduce access to job enrichment experiences for employees. A study financed by the Nordic Council of Ministers investigated the future of Nordic working life (Alsos and Dølvik, 2021). Regarding digitalisation, the authors argue that new technologies offer workers more autonomy and flexibility but at the same time increase job demands, giving rise to technostress. However, this is not inevitable; it can be prevented if action is taken to address the issue. Italian employer organisations, recognising the potential risks to health, suggest that clear communication lines and encouraging mutual support and teamwork can help to mitigate those risks.

Data protection issues and cybersecurity

Both trade unions and employer organisations are concerned about data protection. Trade unions (in Austria, Czechia, Italy, Poland and Slovakia) flag the issues of technologies used for employee monitoring and control (for instance, cameras and wearables) and unjustified collection of personal data. Digitally enabled employee monitoring may become more commonplace, and its implications for job quality, work organisation and trust between employees and management need more attention in policy debate (Eurofound, 2020b). Employer organisations (for example, in Sweden and Greece) are worried about cybersecurity and in particular the need to protect sensitive information and counteract data intrusion. Recognising the importance of data protection issues, two Dutch employer organisations, in a report on employee data privacy, argued that the General Data Protection Regulation (UAVG) Implementation Act provides a good legal framework enabling the use of health data for social security, health and safety policy, and labour market policy (MKB-Nederland and VNO-NCW, 2018).

Unemployment and employability issues

Trade unions in several countries (for example, Bulgaria, Hungary, Luxembourg, Malta, Romania and Slovakia) see this as a clear challenge. It is important, they say, that workers with limited digital competencies are trained adequately. In addition, those likely to lose their jobs should be offered alternative job opportunities. The issue is closely linked with that of low pay; the position of lower-paid workers may worsen unless training and other career development measures are adopted.

Other challenges

Digitalisation should lift all boats, leaving no one behind, contributing to achieving inclusive and sustainable labour markets and avoiding job polarisation, trade unions say (for example, in Austria, Portugal, Romania and Spain). They also underline the risks of inequality (in income and wages) and marginalisation of certain groups of workers. Some are in favour of employee financial participation in the profits of digital companies. Lack of digital infrastructure was mentioned by a small number of trade unions, but this appears to be a major challenge for employers (for example, in Czechia, Greece, Hungary, Italy, the Netherlands and the UK). Employer organisations across countries made the point that, without high-quality digital connectivity and other investments in digital infrastructure, the digital revolution will be substantially delayed, to the detriment of all companies (particularly SMEs), and as a result national economies could be at risk of lagging behind internationally.

In brief

National debates on the future of social dialogue in the digital age reflect the topics currently under discussion, but they tend to take a broader and more holistic approach, reviewing changes in the economy, sectors, occupations, trades and so on. Some social partners reflect on the future of social dialogue and social partnership, but this is not a topic widely debated. National debates draw attention to transformation of sectors and occupations, which may affect the predominant level of collective bargaining and coverage by collective agreements. There are opportunities to instigate more innovation in collective agreements, covering a wider spectrum of topics, as social partners suggest. Both sides remark that digitalisation should bring mutual gains for both businesses and workers. From national debates and studies, it becomes clear that digital skills are seen as a lever for business growth and inclusion. Companies need to take a proactive approach in training their workforces, and workers need to upgrade their skills. Bringing the entire workforce up to speed with digital skills will require coordinated efforts on the part of social partners, governments, and training and education providers. Introducing digital technologies may entail a different type of work organisation, redefinition of jobs, changes in workers' autonomy, reassessment of the level of managerial control, allocation of tasks to be carried out by machines and measures to ensure respect for human integrity. New health and safety risks, data protection concerns and digital means of monitoring work and employees are issues that will be more intensely debated in the future by the social partners. Opportunities brought about by remote forms of working, as well as challenges linked to new forms of work and job loss resulting from digitalisation, are likely to remain on the agenda of the social partners. While all this debate and research by the social partners looks promising, it is presently unclear how these deliberations will translate into strategies and organisational action.

4 | Concluding remarks

This report has examined the use of digital tools by social partner organisations and digitalisation in social dialogue across Member States, Norway and the UK. It has explored digital forms of consultation and collective bargaining and identified examples of collective agreements regulating aspects of digitalisation. While social partners clearly recognise that digitalisation presents opportunities, they are also aware of the challenges associated with digital transition within their own organisations and in the labour market. The main conclusions of the analysis are presented below.

Main conclusions

1. Use of digital technologies

Well established technologies (web tools, email communication, social media tools and so on) are used widely by social partner organisations, particularly since the beginning of the COVID-19 pandemic. Digital technologies are used to deliver training for organisations' own staff and members (for instance, webinars and e-courses) and to communicate (for instance, web-based mobile applications and social media). Social media platforms offer opportunities to reach out to members and potential members who use these platforms themselves. In addition, some trade unions and employer organisations regularly organise online surveys to collect views, take the pulse of their members on issues of concern, and gain input into the collective bargaining agenda and consultation rounds organised by government bodies. The practices of digital voting and remote industrial action mobilisation are gradually evolving, albeit with some difficulty due to issues, for example, related to data protection and data security. Some social partners use technological tools to improve administrative processes and communication (for instance, chatbots) and to offer value-added services such as guidance to members. It should be emphasised that not all practices mentioned here are equally advanced in all organisations across Europe. Therefore, it would be enormously beneficial for both trade unions and employer organisations across Europe to have an exchange on good practices. Sharing information on what works and what could be improved would be particularly useful now, following organisations' experiences of lockdowns and remote ways of working during the COVID-19 crisis.

2. Main challenges faced

The challenges faced by social partner organisations in expanding digital technologies within their own organisations are mainly related to skills, technology and network infrastructure (lack of technological tools, poor broadband connections, low digital penetration, poor network infrastructure at regional or national level, and so on), and to a lesser extent to data protection and GDPR issues. To address these challenges, both sides of industry provide training to equip staff and members with digital skills; they have also been updating technology, seeking funds for such activities, and creating and assigning resources to DPOs. Some of these issues can be addressed by the organisations themselves, but regional and national technological infrastructure is outside of their control. Lack of such infrastructure may have inhibited communication and other activities in some countries during the pandemic. Therefore, actions by Member States to improve technological infrastructure are essential to support the digitalisation of organisations and businesses. Furthermore, the establishment of a dynamic system of digital communication and cooperation between a trade union confederation or a business association and its members (at sectoral and regional levels), as well as expansion of training measures, could accelerate the adoption of suitable digital tools.

3. Digital forms of consultation, negotiation and collective bargaining

Some countries have experience with digital forms of consultation organised by government departments, and social partners have submitted their positions on several policy issues to these consultations. In responding to digital consultations, the views of organisations' members have been collected both remotely and face to face. On the other hand, digital forms of negotiation and collective bargaining were tested during the pandemic with mixed reactions from social partners. The two sides of industry agree that senior officers in their organisations and global business HR managers are more likely to attend meetings and negotiations that take place online (because no travel time is needed), and they appreciate the possibilities for sharing documents in new platforms and achieving efficiencies thanks to reduced national and international travel time. However, virtual engagements do not have the same capacity for building relationships and trust as face-to-face meetings, particularly in the case of collective negotiations. In addition, technical obstacles and poor digital infrastructure may prevent equal access to information and meetings for all

members. Assessing the pros and cons of their recent experiences, social partners are currently reconsidering practices in terms of organising consultation and negotiation processes.

4. Collective agreements

Examples of collective agreements at sectoral and company levels regulating various aspects related to digitalisation have been identified in about half of the Member States and in Norway. There are fewer reports of collective agreements on digitalisation in central and eastern European countries and in the UK, according to the Network of Eurofound Correspondents. Through collective agreements, social partners have prioritised upskilling and training of the workforce, work organisation, working conditions, telework, new forms of work and alleviating the risk of job loss. Both sides agree that acquiring digital skills should be prioritised by businesses and by workers and their representatives, with a view to building talent, improving skills matching, developing capabilities and increasing competitiveness. Training is a joint responsibility of companies and workers. Participatory practices in new work organisation models and human-centred approaches are advocated by social partners in some of their collective agreements.

5. Forging a common approach

Trade unions highlight opportunities emerging from the introduction of digital technologies, such as repetitive manual work being undertaken by machines and opportunities for skills upgrading and career progression. At the same time, they warn about potential risks such as job loss, increased work intensity, technology-related stress, employee surveillance and so forth, which they wish to see jointly regulated in collective agreements. Employer organisations see many opportunities offered by such technologies, and they advocate for digitalisation of processes, investment in physical infrastructure, reorganisation, skills and competency assessment, and so on. As digital transition transforms jobs and business models, social partners will need to shape them in a coordinated and inclusive way. While fully respecting their national industrial relations traditions, social partners can assess their opportunities for finding common ground on managing the impacts of digitalisation on workers and businesses. Such a major challenge surely calls for common approaches and collectively agreed solutions.

6. Shaping the future of work

In future, social dialogue will be increasingly concerned with digitalisation and its impacts on work and employment. This is indicated by national debates and the rich research work produced by the social partners on the role of digital technologies in shaping the future of work. One aspect that they have considered is the future of social partnership – that is, how trade unions and employer organisations will be affected themselves (for instance, there may be new organisations, or new sections of existing ones, representing digital freelancers or microentrepreneurs) and how collective bargaining will be affected as a result. As current debates and research suggest, the future social dialogue agenda is very likely to include topics pertaining to digital qualifications and to upskilling workers and preparing them for tasks that involve human–machine interaction. Collaboration involving supply chains, training providers, apprenticeship schemes and research institutes can contribute to strengthening the digital skills ecosystem. AI, robots, wearables, blockchain and so on are topics much discussed by many social partners. Since these are intrinsically linked with work organisation, working conditions, skills and qualifications, wages and productivity – and also securing jobs – joint solutions will be needed. With further digitalisation of the economy, many aspects of digitalisation currently emerging in collective agreements are very likely to be on future collective bargaining agendas; many may gain new urgency and be prioritised. The internal discussions and deliberations of each social partner organisation will determine its negotiation priorities and strategies, and the extent to which the findings of social partners' studies are translated into action in line with their democratic processes.

7. Further research needed

Future research should further analyse the use and effects of digital forms of collective bargaining and consultation processes. More light should be shed on trade unions' and employer organisations' experiences of what works well for both sides in the use of AI, machine learning and other digital technologies at workplace level. Future research should analyse regulation through collective agreements and legislation to assess impacts and experiences across countries. Identifying innovative aspects of the collective bargaining agenda on digitalisation across Europe (enriching the scope of collective agreements beyond wages and working time) could support social partners in their preparations for national rounds of negotiations.

The way forward

Speeding up the adoption of new digital technologies in social partner organisations

This study provides some evidence that the pandemic has accelerated the pace of adoption of digital tools by employers and trade unions to reach out to their members and offer various types of services. This is a unique opportunity for these organisations to fully embrace digital tools in their operations. Evidence from some countries suggests that regional organisations may need to be supported, in that technological infrastructure may not be at an optimal level to enable organisations to reap the benefits of technology. Some interesting examples of innovation include trade unions that have digitised some of their back-office operations so that they can concentrate on offering services such as providing personal guidance and counselling to their members, producing videoblogs and making online resources available to platform workers. Similarly, some employer organisations have taken action to expand digital services and offer legal advice services through web or mobile apps, online training courses and so forth. As organisations across Europe are at different levels of digital maturity, sharing examples of good practices could encourage further adoption of digital technologies. Adopting digitally enabled tools to facilitate and strengthen communication (for instance, chatbots and social media), services (for example, e-learning tools) and the collection of views (online surveys and interactive tools) can benefit both the organisations themselves (i.e. their own staff) and their members, whose professional and digital skills and negotiations skills may be further improved as a result.

These digital tools offer employer organisations and trade unions opportunities to address information gaps and appeal to a wider membership (for instance, trade unions could use them to attract young workers, workers in digital occupations, platform workers and so on; employer organisations could use them to introduce personalised services for their members, segment their member base to convey relevant and targeted information, promote digitalisation strategies and so on). Furthermore, exploiting digital technologies to facilitate collective bargaining processes – for example, through hybrid meetings and wider member participation (remote meetings may encourage attendance by regional organisations, chief executive officers, global HR managers and so on) – can extend the reach of social partners' actions. As social partner organisations in various countries are concerned about the variation in levels of digital maturity among their members (and in different geographical areas), they could play a stronger role in awareness-raising campaigns to encourage digitalisation uptake nationally.

Finally, overcoming hurdles related to national or regional digital infrastructure will also require investments by governmental bodies to make digital transformation a priority.

Supporting capacity-building activities on digitalisation

Some social partners in various Member States indicated that exchange of good practices – through workshops, webinars, online resources and so on – would greatly assist in providing clarity on the various dimensions of digitalisation and what works.

As digital technologies expand across the economy, sectors and occupations are impacted, and social partners will need to respond with new tools, roles, cooperation schemes, guidelines on jointly agreed digital transition, joint activities and collectively agreed solutions. Some employer organisations and trade unions have been involved in national digitalisation plans, and their experiences of setting up frameworks and addressing societal challenges and legal issues (such as data security and data protection issues) could be shared with social partners in other countries.

Sectoral- and company-level agreements and their provisions on training, skills, working conditions and work organisation, and their actual outcomes, are another topic that social partners could exchange on. As some social partners in central and eastern Europe are building up their collective bargaining structures, a participatory learning exercise such as this could be beneficial to all. Reports produced by trade unions and employer organisations suggest that digitalisation may affect sectors and occupations, and hence social partnership. Sharing experiences and foresight studies on social partner strategies could help in better preparing organisations for future partnership activities and for the introduction of innovative solutions into social dialogue. Beyond sector and workplace levels, European Works Councils could play a major role in sharing good practices on digitalisation across borders.

These capacity-building activities could be further supported by EU-level social partners (cross-sectoral and sectoral organisations) as part of their activities following up on the European social partners' autonomous framework agreement on digitalisation, signed in June 2020, and in addition to their activities related to its implementation. The agreement has inspired national-level organisations to undertake in future more joint actions and collective agreements in line with their own needs and following national industrial relations traditions. Moreover, some of them have started projects (financed by the European Commission's social dialogue budget lines) exploring a number of good practice examples related to existing initiatives, practices and collective agreements in the context of the digital transformation of the world of work.

In order to improve social dialogue, employer organisations and trade unions could capitalise on the skills of young people – who tend to be more digitally adept – within their organisations and among their members. This could be particularly important in countries where, for various historical or political and ideological reasons, social dialogue still remains weak, as the European Commission's *Report on strengthening EU social dialogue* points out (European Commission, 2021e).

Intensifying efforts to jointly address social aspects of digitalisation

Of course, digital technologies are not new – many have been around for some time – but their large-scale deployment in the work environment is a relatively recent phenomenon. Therefore, the social aspects of this phenomenon have not yet been fully explored or regulated. The role of social partners in regulating these aspects is of fundamental importance to ensure a smooth digital transition, in a fair and inclusive way for all. In line with their national industrial relations traditions and institutions, social partners can establish the rules and framework for the introduction of digitalisation into European companies to increase competitiveness and organise work in a digital environment in a human-centred way.

If digital transformation is to work for businesses and workers and make this decade truly a 'digital decade' with a human face, concerted efforts by social partners across Member States are needed. Social partners acknowledge that digital technologies will change work, jobs and business models, but there should be more collective solutions and agreements regulating the topic. Presently, collective agreements at any level have

been concluded in only a relatively small number of countries. Future collective agreements need to consider aspects of digitalisation that are key concerns for social partners, namely skills and competencies, remote work, data protection and employee monitoring issues, new work organisation models, working conditions, job losses and new forms of employment. Many recently concluded collective agreements have rightly emphasised training activities in various economic sectors. However, such efforts need to be accelerated and spread to all sectors. Collaboration schemes with training providers, research institutes and relevant national or regional training and educational institutes need to identify the digital skills required for specific sectors and occupations.

As company-level agreements regulating various aspects of digitalisation are proliferating, practices across the industry at national and European levels could be valuable to representatives of management and workers to ensure fair rules across companies. Such an exchange of practices could be supported by social partners at sectoral and peak levels while articulating the various collective bargaining levels in multi-tier bargaining systems (for example sectoral, company-level collective bargaining).

The European social partners' autonomous framework agreement on digitalisation paves the way for the introduction of digital transformation strategies with a human face. Drawing on this framework for action and on good practices in other countries, national social partners can implement own agreements (at cross-sectoral, sectoral, company and establishment levels) or tripartite agreements, in accordance with their industrial relations traditions.

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Annexes

Annex 1: Glossary

This glossary includes definitions of some of the terms used in this report, drawing on previous Eurofound reports (Eurofound, 2018b, 2018c, 2020b).

3D printers: These are machines that can create physical objects from three-dimensional digital models, generally by laying down successive layers of material.

Algorithm: An algorithm is a set of precisely defined steps and rules to be followed to accomplish a task.

Artificial intelligence (AI): AI is a general-purpose technology that enables and supports the application of many other technologies (Brynjolfsson et al, 2017). AI covers automated and semi-automated systems, including algorithmic decision-making and management. The definition adopted by the European Commission refers to 'narrow AI', which uses machine learning and deep learning tools to extract information from an enormous amount of data and to generate new value based on models built with those data (Eurofound, 2020a, 2020b).

Automation of work: This term refers to the replacement of (human) labour input by machine input for some types of tasks within production and distribution processes.

Crowdsourcing: The original definition refers to the act of outsourcing a function once performed internally in a company or institution to a network of people in the form of an open call (Wired, 2006).

Digitalisation: This is the integration of digital technologies into everyday life through the digitisation of everything that can be digitised. 'Digitisation' refers to processes that transform elements of the physical world into bytes (European Industrial Relations Dictionary).

Digitisation of processes: This refers to the use of sensors and rendering devices to translate (parts of) the physical production process into digital information (and vice versa).

Internet of things (IoT): IoT is made up of networked sensors attached to outputs, inputs, components, materials and tools used in production. Such sensors create a cyber-physical system in which the information collected is fed, via the internet, to computers to gather data about production and work processes and analyse these data with unprecedented granularity (Billinghurst and Starner, 1999).

Wearables: Wearables are devices comprising electronics, software and sensors that are designed to be worn on the body (Billinghurst and Starner, 1999). Examples include smartwatches, head-mounted displays, body cameras and smart clothing.

Annex 2: Questionnaire

Country:

Name of correspondent and organisation:

Instructions

Please be succinct and go straight to the point in your answers.

In each question please:

- distinguish by type of organisation:
  - trade union/employer organisation
  - traditional social partner organisation/newly formed collective representing a specific worker population (*freelancers in media*, *Deliveroo riders*, *etc.*)
  - national/sectoral/local level of intervention
- clearly specify the sources used:
  - mention all sources of information used
  - provide web links (tested) when possible
  - please provide the references according to the Eurofound style guidelines

The main objective is to get examples of:

- social partner organisations using digital technologies, specifying:
  - type of technology used: most common ones (web, email, social media)/new ones (robots, 3D printing, augmented reality) by the social partner organisations
  - reasons for using them:
    - disseminating opinions, supporting points of view
    - reaching policymakers or other audiences
    - organising surveys/polls
    - organising representation of members: workers (for example, electronic voting in worker representative elections) or companies (for example, obtaining a mandate)
    - mobilising members, organising actions (lobbying, demonstrations)
    - organising or facilitating social dialogue/collective bargaining
- impacts of these technologies on topics addressed through consultations, social dialogue, collective agreements:
  - macro issues (job destruction, health and safety, business models) dealt with through public authorities' consultations
  - issues of organisation of work when new digital technologies are introduced
  - issues dealt with in social dialogue (wages, working time, career paths, health and safety)
- the impact of COVID-19 on the use of technology by social partner organisations

Sectoral approaches are of interest; depending on countries' characteristics and on use of technology, the following could be considered:

- sectors more likely to (have) introduce(d) digital technologies
- sectoral organisations using technologies (for example, for internal purposes, reaching out to audiences, mobilising members, organising actions) even in sectors that are not technologically advanced

Please see in **Annex 1** a table presenting some examples of joint positions/agreements taken by social partners at various levels regarding digitalisation issues. It includes an example of a specific initiative to develop internally (in a union) the use of technologies.

Please return the questionnaire via the CMS by **26 February 2021**. Thank you.

Question 1: To what extent do the social partners use new technologies for organising their own services and membership?

1.1 Please provide concrete examples of the use of new technologies in the organisation's structure (for example, electronic voting, social media campaigns, public consultation).

- What kinds of digital tools are used by the social partner organisation and what was the initial impetus for their use? To what extent does the organisation rely on social media to reach its audience?
- What kinds of digital tools does it use for disseminating opinions, supporting points of view, reaching policymakers, organising surveys/polls? Is it possible to give an assessment of the importance of the use of different tools to reach out?
- To what extent does it use digital technologies (and which ones) in organising representation of members: workers (for example, electronic voting in worker representative elections) or companies (for example, obtaining a mandate)?
- Mobilising members, organising actions (lobbying, demonstrations)

Use tables below and on next page.

Impact of COVID-19

- use of digital tools not used before because of the pandemic situation, or extension/systematisation of use of technological tools already in place

> Table: **Trade unions: COVID-19 and use of digital technologies**

> Table: **Employer organisations: COVID-19 and use of digital technologies**

1.2 What barriers (if any) has the organisation encountered when using new technologies? How did it overcome them?

- lack of 'digital' skills in the organisation
- difficulties linked to the infrastructure/technology not working appropriately
- difficulties linked to GDPR implementation

Use tables on next page.

1.1 Tables on main digital technologies used by social partner organisations and reasons for using them

Table 1.1a: Main digital technologies used by trade unions and reasons for using them

TU*	Web	Email	Social media	Other – please specify (e.g. 3D printing, augmented reality, robots)
TU 1				
Reasons				
TU 2				
Reasons				
TU 3				
Reasons				

TU 1 =
TU 2 =
TU 3 =
*Add as many lines as needed

Table 1.1b: Main digital technologies used by employer organisations and reasons for using them

EO*	Web	Email	Social media	Other – please specify (e.g. 3D printing, augmented reality, robots)
EO 1				
Reasons				
EO 2				
Reasons				
EO 3				
Reasons				

EO 1 =
EO 2 =
EO 3 =
*Add as many lines as needed

1.2 Tables on main barriers

Table 1.2a: Main barriers faced by trade unions and measures to overcome them

TU*	Lack of digital skills in the organisation	Difficulties linked to the infrastructure/ technology not working appropriately	Difficulties linked to GDPR implementation	Other – please specify
TU 1				
Remedies				
TU 2				
Remedies				
TU 3				
Remedies				

TU 1 =
TU 2 =
TU 3 =
*Add as many lines as needed

Table 1.2b: Main barriers faced by employer organisations and measures to overcome them

EO*	Lack of digital skills in the organisation	Difficulties linked to the infrastructure/ technology not working appropriately	Difficulties linked to GDPR implementation	Other – please specify
EO 1				
Remedies				
EO 2				
Remedies				
EO 3				
Remedies				

EO 1 =
EO 2 =
EO 3 =
*Add as many lines as needed

Question 2: Organisation of social partner consultation and collective bargaining using new technologies

2.1 Please provide concrete examples of use of digital technologies in:

- organising or facilitating social dialogue/collective bargaining
- consultations with/by public authorities, other social partner organisations, other organisations (for instance, NGOs, other collectives)

> Table: **Trade unions: Use of digital technologies**

> Table: **Employer organisations: Use of digital technologies**

Impact of COVID-19:

- use of digital tools not used before because of the pandemic situation, or extension/systematisation of use of technological tools already in place

> Table: **Trade unions: COVID-19 and use of digital technologies**

> Table: **Employer organisations: COVID-19 and use of digital technologies**

2.2 What were the benefits and challenges experienced in the deployment of digital technologies for this purpose? Is there any assessment as regards their effectiveness compared with more traditional means?

> Table: **Trade unions: Benefits and challenges**

> Table: **Employer organisations: Benefits and challenges**

Question 3: Collective negotiations (all levels): to what extent have national and sectoral consultations and collective agreements regulated digitalisation of work?

Please provide concrete examples of the following, specifying topics (for example, working time/availability, training, skills) and sectors:

- consultations involving social partners on digitalisation of the economy and its implications (for example, job loss, organisation of work); what were the outcomes?

> Table: **Social partners' consultation on macro impacts of digitalisation** *(for example, job loss, organisation of work)*

- How do sectoral- or company-level agreements cover issues of organisation of work when new digital technologies are introduced (for example, 3D printing, use of robots handled remotely by workers, use of virtual or augmented reality technology for organising work tasks)?

> Table: **Collective agreements and new digital technologies in the workplace** *(for example, 3D printing, use of robots handled remotely by workers, use of virtual or augmented reality technology)*

- To what extent are issues dealt with in social dialogue (for example, wages, working time, career paths, health and safety) impacted by practices facilitated by technologies (for example, telework, use of external contractors and platforms)?

> Table: **Impact of practices facilitated by technologies** *(for example, telework, use of external contractors and platforms)* **on issues dealt with in social dialogue** *(for example, wages, working time, career paths, health and safety)*

Question 4: Assessing the impacts of a digitalised work environment on social dialogue and collective bargaining: please provide concrete examples of any social partner discussions or studies on the future of social dialogue in a digital era (covering, for example, risks, opportunities, emergence of new actors, impacts on certain sectors, regulation of the employment relationship, working conditions, requirements regarding capacities and competencies in social partner organisations, cultural aspects related to technology or negotiation procedures, etc.)

> Table: **Trade unions: discussions/research on the future of work**

> Table: **Employer organisations: discussions/research on the future of work**

Comments/observations

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ANNEX 1

Examples of discussions and agreements in a digitalised work context

Level	Country/organisation	Example
Company	Spain	Protocol with Telefonica management (CCOO and UGT) on telework
Company	Ireland	Best practice policy on the use of communication tools at AIB bank, developed with FSU, on the right to disconnect
Sector	Germany	The chemicals sector and the Federal Employment Agency will initiate a joint training project that is specifically designed to train employees whose jobs are threatened in whole or in part by the digitalisation of the economy
European	BusinessEurope	BusinessEurope position paper, 12 October 2020: 'The Digital Services Package' BusinessEurope reaction to the Commission's consultation on the Digital Services Package in relation to tackling illegal content online, gatekeeper platforms and platform workers
National	Germany	Germany's first trade union 'hackathon', UnionHack, 20 and 21 November 2020 A 'programming marathon'*, bringing together hackers, IT developers and digital designers to work on a number of challenges: optimising how union structures function, improving the relationship between trade union members and the trade union organisation, and making better use of membership data to augment trade union influence, strength and action

* Planet Labor No. 12243, 25 November 2020

Annex 3: Network of Eurofound Correspondents

List of national correspondents participating in the research

Country	National correspondent(s)	Organisation(s)
Austria	Bernadette Allinger	Working Life Research Centre (FORBA)
Belgium	Dries Van Herreweghe	Research Institute for Work and Society (HIVA), KU Leuven
Bulgaria	Todor Kapitanov	Confederation of Independent Trade Unions of Bulgaria (CITUB)
Croatia	Predrag Bejaković	Institute of Public Finance
	Irena Klemenčić	Faculty of Law, University of Zagreb
Cyprus	Loucas Antoniou	Cyprus Labour Institute (INEK-PEO)
Czechia	Soňa Veverková	Research Institute for Labour and Social Affairs (VÚPSV)
Denmark	Johan Secher and Mathias Hjorth Poulsen	Oxford Research
Estonia	Ingel Kadarik	Praxis Centre for Policy Studies
Finland	Amanda Kinnunen and Vera Lindström	Oxford Research
France	Cécile Jolly	IR Share
Germany	Sandra Vogel	German Economic Institute (IW)
Greece	Elena Kousta	Labour Institute of the General Confederation of Greek Workers (INE-GSEE)
Hungary	Nóra Krokovay	Kopint-Tárki Institute for Economic Research
Ireland	Gerard McMahon	Industrial Relations News
Italy	Roberto Pedersini	Department of Social and Political Science, University of Milan
Latvia	Kriss Karnitis	EPC Ltd
Lithuania	Inga Blaziene	Lithuanian Centre for Social Sciences
Luxembourg	Fanny Robert	Luxembourg Institute of Socio-Economic Research (LISER)
Malta	Christine Garzia	Centre for Labour Studies, University of Malta
Netherlands	Amber van der Graaf and Jacqueline Snijders	Panteia
Poland	Maciej Pańków	Institute of Public Affairs (ISP)
Portugal	Maria da Paz Campos Lima and Manuel Abrantes	Centre for Studies for Social Intervention (CESIS)
Romania	Raluca Dimitriu and Alexandra Deliu	European Institute of Romania (IER)
Slovakia	Ludovit Cziria	Institute for Labour and Family Research
Slovenia	Monika Weiss	Faculty of Social Sciences, University of Ljubljana
Spain	Alejandro Godino Pons	Universitat Autònoma de Barcelona (UAB)
Sweden	Andrea Utas	Oxford Research
Norway	Kristin Jesnes	Fafo Institute for Labour and Social Research
UK	Claire Evans	University of Warwick

Digital transformation is changing the world of work. This report looks at how social partners – the actors involved in the regulation of employment relationships – are increasingly adopting technological solutions to improve the services that they provide to their members and facilitate collective bargaining processes. Technological tools offer social partners the opportunity to enhance consultation, engage with their members through digitised processes, improve services and increase networking activities, as well as addressing the issue of membership decline. The findings of this report show that the extent to which the social partners use digital technologies varies greatly across the EU Member States, Norway and the United Kingdom. Provisions in collective agreements on several aspects of digitalisation have been identified in about half of the countries. Through these provisions, social partners encourage their members to boost training on digital skills, ensure fair and safe working conditions and take account of data protection and employee monitoring practices. The European social partners' autonomous framework agreement on digitalisation has provided inspiration to national-level organisations, and follow-up actions in this regard have the potential to greatly benefit their members.

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency established in 1975. Its role is to provide knowledge in the area of social, employment and work-related policies according to Regulation (EU) 2019/127.