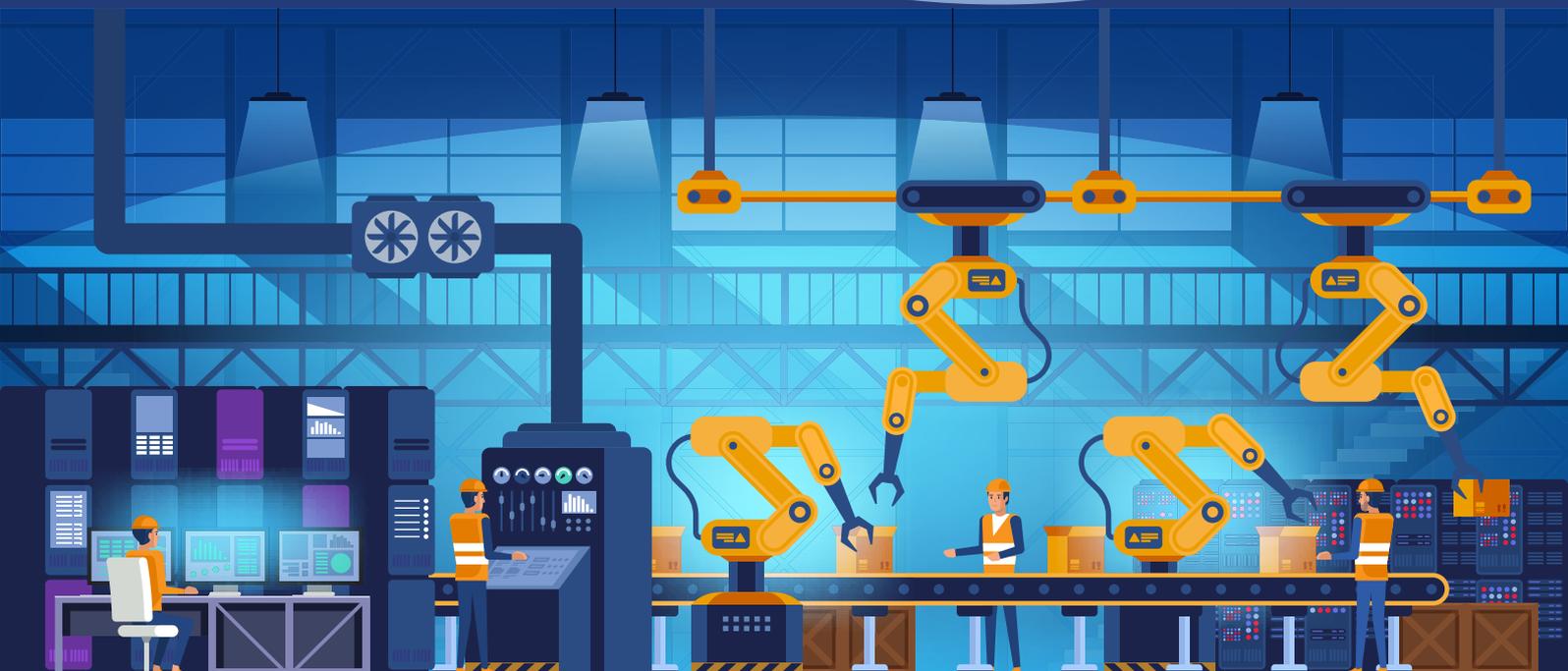


Digitalisation in the post-COVID world: what role for industrial trade unions?

May 2021



This report is realised in the framework of the project ***To give trade unions the tools to act on the social consequences of the digital transformations of the company in the employment relationship and working conditions***, implemented by industriAll Europe.

Contributors

Syndex and wmp consult contributors in alphabetical order:

Arias, Natalia (Syndex Spain)
Chelaru, Diana (Syndex Romania)
Darteyre, Philippe (Syndex Poland)
Guga, Stefan (Syndex Romania)
Hamon, Eve (Syndex France)
Ikolo, Sandrine (Syndex Belgium)
Jakubowski, Andrzej (Syndex Belgium)
Morvannou, Philippe (Syndex France)
Spatari, Marcel (Syndex Romania)
Stracke, Stefan (wmp consult Germany)
Voss, Eckhard (wmp consult Germany)
Warneck, Fabrice (Syndex Belgium)

Project coordinators: Morvannou, Philippe and Warneck, Fabrice

Final report coordinator: Spatari, Marcel

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Introduction

To give trade unions the tools to act on the social consequences of the digital transformations of the company in the employment relationship and working conditions

This report is the result of an extensive analysis of digitalisation trends across Europe and trade unions actions, conducted by a team of Syndex experts during the period 2019-2021. The purpose of the report is to provide an extensive panorama of existing practices, challenges and possible solutions to better manage the transformations of jobs and working conditions induced by digitalisation, automation and robotisation. The COVID-19 pandemic has brought major changes to the world of work and we have specifically addressed the new main issues on the trade unions' agenda, such as telework and future-proof occupational pathways.

The findings of the report are based on interviews with trade unions from 11 countries (France, Germany, Belgium, the Netherlands, Spain, Italy, Poland, Czechia, Romania, Sweden and Finland), an extensive survey among trade unions from the cited countries conducted in 2019, the exchanges during the workshops with national trade unions organised by industriAll Europe in 2019-2021, as well as a documentary research and an analysis of publicly available data.

The report does not have the ambition to form an exhaustive inventory of existing policies and trade union actions related to digitalisation, but rather to provide an overview of general trends in Europe and illustrate them with insights into relevant national cases. On some topics, more in-depth analysis is provided for a number of countries in which the issues were particularly important for trade unions.

The report concludes with an overview of the social dialogue and trade unions' actions to accompany workers in the digital transformation of the industry, as well as the developments at European level, where the cross-sectoral social partners signed a Framework Agreement on digitalisation in 2020.

1

An overview of digitalisation trends in Europe

1.1. How digital is the European industry?

1.2. Impact of COVID-19 and the future of digitalisation

1.3. The Next Generation EU Funds

1.4. National policies to promote the transformation of industry



1.1. How digital is the European industry?

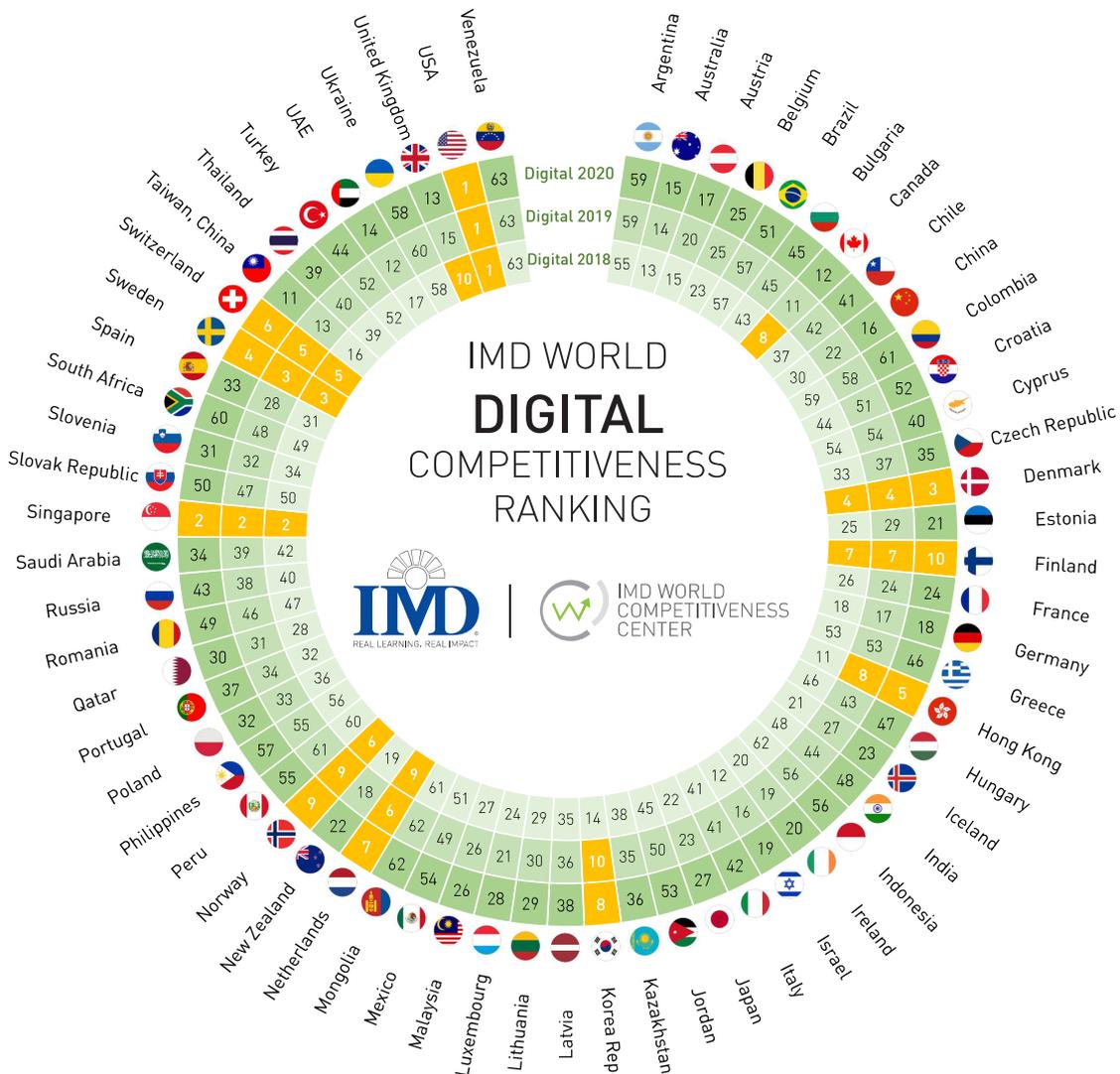
Europe is a world leader in terms of digitalisation. However, there are significant disparities among regions within the European Union. Policy makers must ensure that the gap does not widen.

A leading region...

Europe is one of the most advanced regions in the world in terms of digital transformation. There is much evidence to prove it. Take the latest Digital Competitiveness ranking calculated by IMD - in which six of the top ten and half of the top 20 countries are European - or data from the OECD, in which European countries are among the leaders in terms of Research & Development indicators. The concept of the Fourth Industrial Revolution, or Industry 4.0, appeared for the first time in the public debate in Europe.

...with large disparities

Although some of the European countries rank highly in terms of digital development, and the European averages appear superior compared to other regions, the reality is that within Europe there are very significant differences in terms of digital development

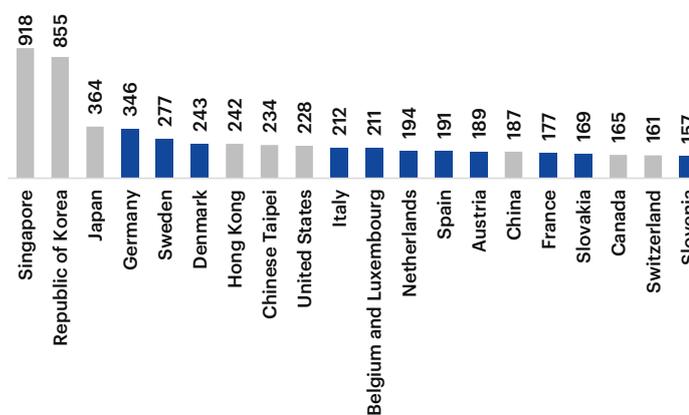


Source: IMD World Digital Competitiveness Ranking 2020

among countries. For instance, the Gross Domestic Expenditure on R&D per capita is 12 times higher in Sweden or Austria than in Romania. There are three times more researchers per thousand employees in Belgium compared to Latvia. Of course, these indicators are indirect when it comes to assessing the digitalisation of the industry. Other, more direct indicators, also confirm the general picture of the disparities. Data from the International Federation of Robotics shows that the robot density in the manufacturing industry is 2.2 times higher in Germany than in Slovenia. Also, the Digital Economy and Society Index, a composite index that tracks relevant indicators of Europe's digital performance, calculated by the European Commission, shows that Finland, the country with the highest index, performs almost twice as well as Bulgaria, which comes in last place. More specifically, the Integration of Digital Technology, which measures the digitalisation of business, is four times higher in Ireland compared to Bulgaria, while the Human Capital Index is 2.4 times higher in Finland than in Italy.

The implications of these disparities for the European economy are significant, further widening the inequalities among countries. When

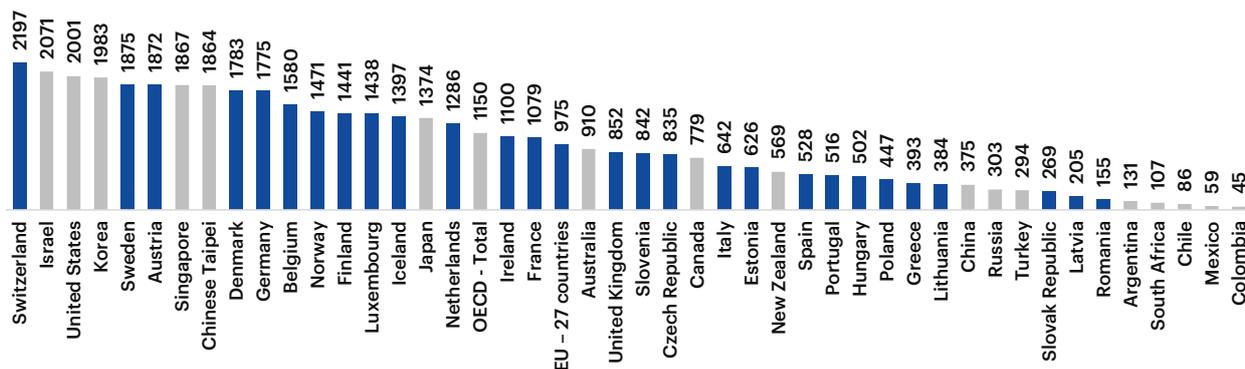
Robot density in the manufacturing industry



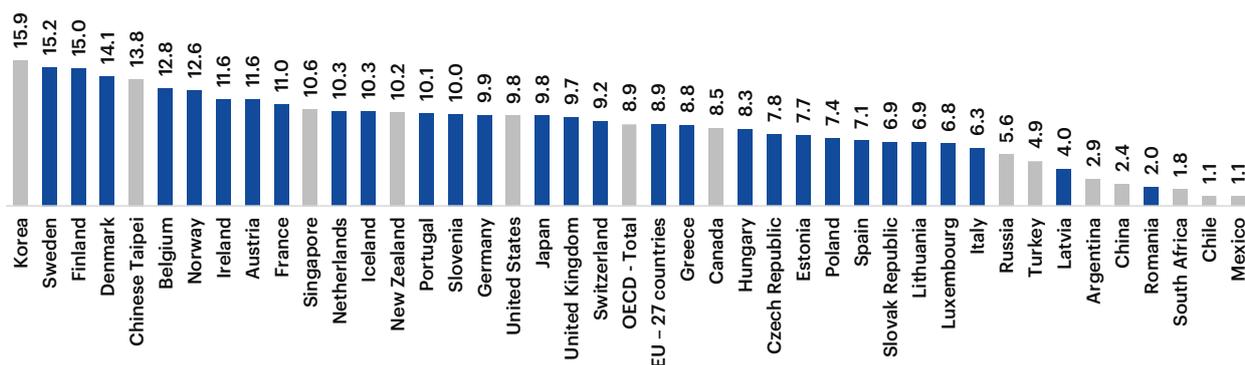
Source: International Robotics Federation

OECD indicators on R&D

Gross Domestic Expenditure on R&D per capita population (current PPP \$, data from 2019 or most recent available)



Total researchers per thousand total employment (data from 2019 or most recent available)



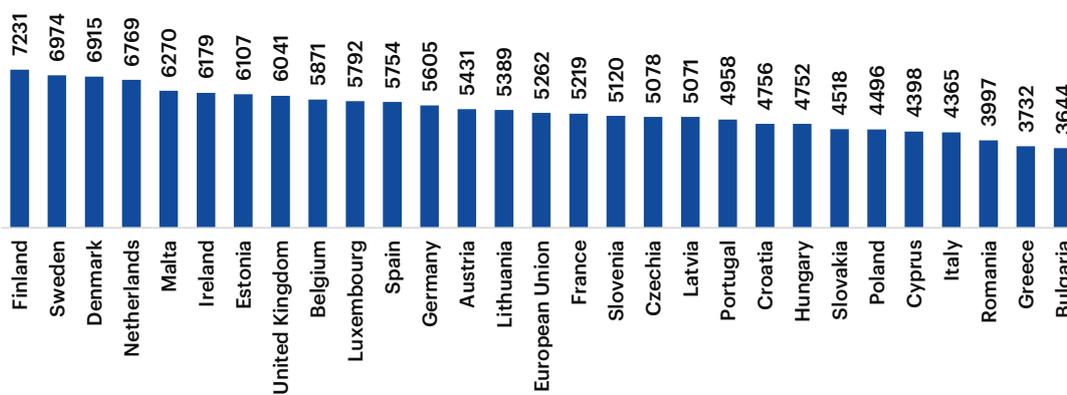
Source: OECD

it comes to assessing the impacts of digitalisation, one must take into account these differences. Any generalisation for Europe as a whole will inevitably be bound to bear nuances and exceptions.

Trade unions' perception of the level of digitalisation

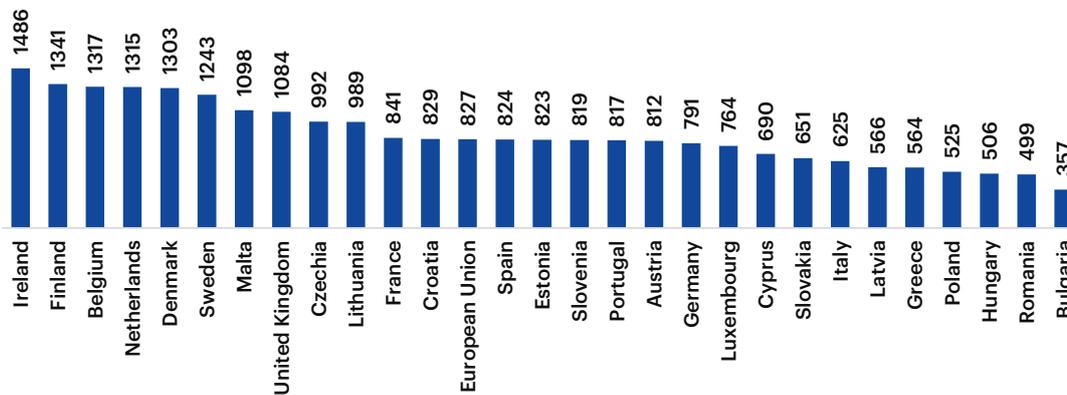
The differences in the level of digitalisation of industry across regions are also visible in the results of the survey conducted by industriAll Europe and Syndex among trade unions from 11 countries. When asked to assess the level of robotisation of industrial processes, trade unions from Northwestern Europe (Germany, Belgium, the Netherlands, Sweden and Finland) and Southwestern

Digital Economy and Society Index



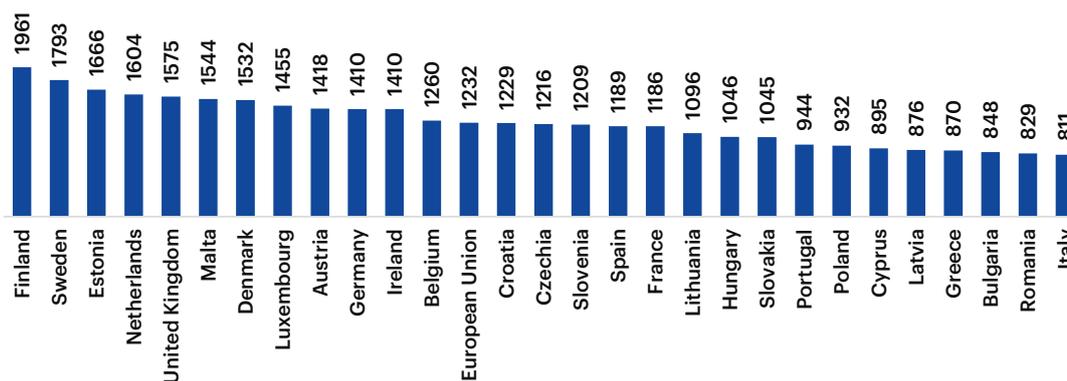
This indicator is calculated by the European Commission and measures the following key dimensions: Telecom sector, Broadband, Mobile, Internet usage, Internet services, eGovernment, eCommerce, ICT Skills, Research and Development

Integration of Digital Technology index (component of the DESI)



Integration of digital technology covers (a) 'business digitisation' and (b) 'e-commerce'. 'Business digitisation' has five indicators (as % of firms using): electronic information sharing, Radio Frequency Identification (RFID), social media, e-invoices and cloud solutions.

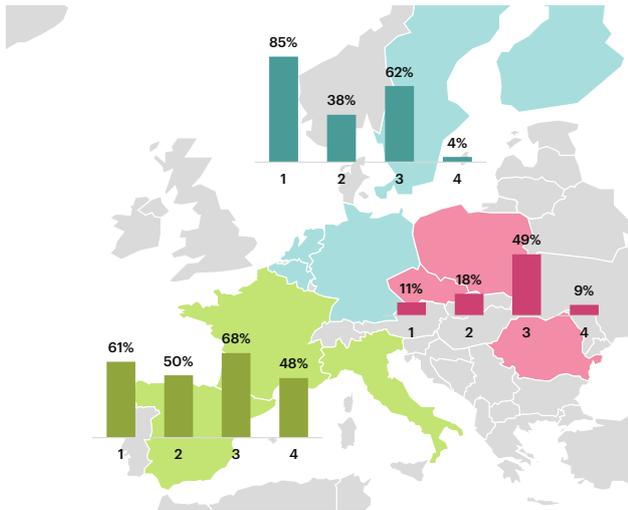
Human Capital index (component of the DESI)



The Human capital dimension of DESI has two sub-dimensions covering 'internet user skills' (number and complexity of activities involving the use of digital devices) and 'advanced skills and development' (indicators on ICT specialist employment and ICT graduates).

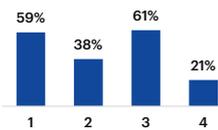
Source: European Commission

Robotisation of industrial processes (Syndex survey)

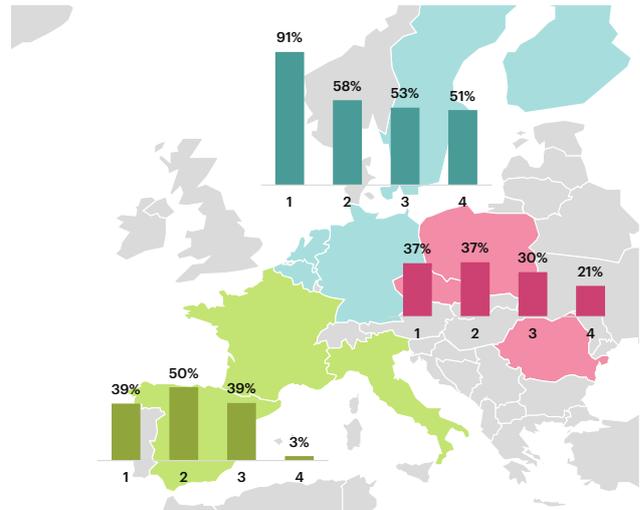


1. Are robots already carrying out manual production tasks?
2. In what proportion are production operations carried out by robots? (answers with more than 50%)
3. Could tedious or dangerous tasks be carried out by robots in the near future?
4. Are internal logistics operations essentially robotised (palletiser robots, autonomous trolleys, cobots, etc.)?

Total weighted average

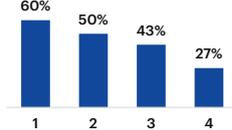


Platforms and additive manufacturing (Syndex survey)



1. Are there digital platforms such as Sharepoint that improve and strengthen collaboration and cooperation within the company? (answers with 50% and more)
2. Are there integrated platforms that exchange information automatically between the different service functions that are internal or external to the company? (answers with 50% and more)
3. Are there integrated platforms that exchange information automatically between the different players of the value chain (with joint contractors)? (answers with 50% and more)
4. Are there additive manufacturing facilities for individualised production, testing and developing new products, prototyping or developing new materials? (answers with 50% and more)

Total weighted average



Europe (France, Spain and Italy) assess that the process is much more advanced compared to the answers provided by their peers from Central and Eastern European countries (Poland, Czechia and Romania). The differences are significant: weighted averages of positive answers to the question "Are robots already carrying out manual production tasks?"¹ for the Western regions are 85% and 61% respectively, while for Central and Eastern Europe, the result is only 11%. Even the assessment of the potential for robotisation shows that Northwestern and Southwestern trade unions are more inclined to expect the further expansion of the phenomenon: 62% and 68% of respondents from Western regions answered that tedious or dangerous tasks could be carried out by robots in the near future, compared to 49% in Central and Eastern Europe.

When it comes to assessing the use of digital platforms by industry, such as Sharepoint, the disparity is apparent, not only between the West and the East, but also between the North and the South: such platforms are used by 50% or more of the companies according to 91% of the respondents from Northwestern Europe, while the results for Southwestern Europe and Central and Eastern Europe are 39% and 37% respectively. Integrated platforms that exchange information automatically between the different service functions or between the different players of the value chain (with joint contractors, for instance) are also more developed in Northwestern Europe compared to the other regions.

¹ Weighted averages are calculated on the basis of the answers received from each country, weighed on the number of industrial workers per country.

1.2. Impact of COVID-19 and the future of digitalisation

The pandemic has incentivised companies to invest in digital solutions in order to continue operations in extraordinary circumstances. Reports show that investment plans were largely maintained during the pandemic. Meanwhile, trade unions have to adapt to the new reality of digital work.

Is COVID-19 providing a boost to automation, robotisation and digitalisation?

The development of digitalisation at different speeds across Europe was obvious before the COVID-19 crisis. The emerging question now is whether the pandemic could accelerate the deployment of digital solutions in the post-COVID world and thus lead to a convergence in terms of digital development.

The answer is not obvious. Indeed, it is believed that the pandemic will accelerate digital investments from both companies and governments. However, industry seems to lag behind other sectors in terms of digitalisation. Certainly, some aspects, such as automation of routine tasks (robotic process automation), remote services for machines and systems, AI-based predictive maintenance or the use of AI for human resource analytics, have been embraced by a significant number of industrial companies, but overall the pace of transformation is lower than in other sectors. For instance, the stock of industrial robots in Europe increased by only 6% in 2019 (International Federation of Robotics), while digital government services, online grocery shopping, or online banking, regularly show a growth rate of 10- 20% per year (McKinsey).

Assessing whether the pandemic will lead to an acceleration of digital investments in industry is not a trivial task, since there are many divergent factors in play. On the one hand, digitalisation provides an additional level of resilience during a crisis, but on the other hand, the investments are expensive and the crisis means cash resources might be constrained.

Digitalisation is a factor of resilience during a pandemic crisis.

A company with digital tools can adapt more easily to sanitary constraints.

A very automated factory has higher chances to continue operating during lockdowns.

Is the crisis favouring the acceleration of digitalisation?

A significant limit: lack of cash during the crisis.

The return on investment also depends on the cost of labour.

Is telework an alternative?

Investment plans largely maintained

During the interviews conducted in November-December 2020 with trade union representatives from industrial companies across Europe, Syndex experts found that in most of the cases, investment plans concerning robotisation, automation and digital solutions have been maintained during the COVID-19 crisis, although delays could have



impacted the implementation of the plans. However, most of the respondents came from large companies, with significant financial capabilities, and therefore the conclusion is not automatically valid for smaller companies with fewer resources.

In Germany, the question of whether the COVID-19 crisis leads to an acceleration of digitalisation is being discussed intensively. The interviewees consider this to be likely, although a digitalisation push in these areas is to be expected even without COVID-19. An acceleration of digitalisation had already begun in the years before COVID-19 (Gerst 2020) – both in terms of operational processes, as well as products, services and sales. In the past however, the theoretical potential of digitalisation was not fully used, because many companies underestimated the strategic relevance of digitalisation for competitiveness and efficiency. This seems to have changed in recent times.

In Poland, the *Smart Industry Polska 2020* study shows that the issue of digitalisation has grown in importance in companies since the outbreak of the COVID-19 crisis. The share of SMEs having set up projects directly related to the Industry 4.0 concept more than doubled between the years 2018 and 2020, increasing from 11% to 25.5%. Now, more than a quarter of the employers surveyed state that digitalisation is an integral part of their business strategy. Among these respondents, 30% say that they have identified new needs, or have changed their requirements when it comes to the digital skills of their employees. For some, the pandemic is perceived as a potential accelerator of the process of robotisation in industry, in particular in response to the very limited mechanisms for financing short-time work in Poland². For others, the crisis is weighing on the technological investment capacities of companies in a context of dwindling cash. In the automotive sector, **the relatively low wages (compared to Western European countries) are perceived by the trade union as a barrier to the all-out development of the digitalisation of the sector**. The pandemic temporarily slowed down the robotisation and automation projects. It has also held back wage growth in the country, including that of the gross minimum wage.

² According to the European Monitoring Centre on Change, „the introduction of the possibility to reduce working time on the basis of the act of 11.10.2013 on special solutions related to the protection of jobs was met with sharp criticism of trade unions and is not being used in practice. This is due to the low level of basic wages, whose further reduction within the shortened working time schemes would in most cases be unacceptable for trade unions.” See <https://www.eurofound.europa.eu/observatories/emcc/erm/legislation/poland-working-time-flexibility>

The spread of virtual ways of working

In the course of the COVID-19 crisis, virtual ways of working have become more important in many companies, but primarily for planning, commercial or administrative areas. The interviewees assume that digitalisation will further accelerate during the pandemic, due to learning experiences in “involuntary experimental spaces”.

The current digitalisation push relates, in most parts, to mobile work or working from home, virtual project management and virtual cooperation. This in turn has effects on other work processes. Virtual cooperation, for example, requires the digitalisation of working documents and provisions for data security (Gerst 2020). Further spill over effects are expected for sales (increased use of digital customer interfaces) and digital business models.

Surveys and studies show that managers and executives have developed an increased sensitivity to the performance of digital technology. Now it is evident that the scope of digitalisation can be successfully increased in a short period of time. Pre-pandemic prejudices regarding the motivation, productivity and work discipline of employees working from home have not been validated. In addition, there are new experiences that digitalisation can help, to keep up processes and to manage a crisis (Gerst 2020; Hofmann, Piele and Piele 2020).

As a result of the lockdown, the existing contact restrictions and the widespread use of working from home due to the COVID-19 pandemic - a particular challenge for trade unions - is how to address their members, how to organise company staff meetings and how to deal with the recruitment of new members.

At national and European level, unions have generally successfully adapted to COVID-19 and to the new virtual ways of working. The Finnish union, FIU, affiliated to industriAll Europe, organised a 12-week campaign, entirely run with digital tools, and managed to recruit new members and reach a union density of 70%³.

In Germany, IG BCE (the Mining, Chemical and Energy Industrial Union) signed a pioneer agreement in April 2021 granting trade unions a legal right to access employees working from home. According to the agreement, 30,000 workers in 100 rubber companies nationwide can be reached via video conference, digital blackboards and company mailing lists⁴.

“This success demonstrates that digital organising can deliver union wins if workers and their unions stand together and follow a strategic and systematic approach to building trade union power.”

industriAll Europe on FIU (Finland) digital organising campaign

“Social dialogue in the companies can only function with internal communication and codetermination on the workers’ side. This innovative agreement is a great model for other sectors and countries to follow.”

Isabelle Barthès, industriAll Europe’s Deputy General Secretary

³ Finland: workers win collective agreement in one of the largest media and print companies with a digital campaign. Available at <https://news.industriall-europe.eu/Article/514>

⁴ Landmark agreement in Germany: trade unions can legally access teleworkers. Available at: <https://news.industriall-europe.eu/Article/612>
The full text of the agreement is available at [https://news.industriall-europe.eu/content/documents/upload/2021/5/637576291437248344_Text%20of%20agreement%20\(EN\).pdf](https://news.industriall-europe.eu/content/documents/upload/2021/5/637576291437248344_Text%20of%20agreement%20(EN).pdf)

1.3. The Next Generation EU Funds

The economic recovery of Europe after the pandemic puts digitalisation among the top priorities.

An opportunity for the industry

On 18 December 2020, the Council and the Parliament of the European Union reached a provisional agreement of the Recovery and Resilience Facility (RRF) of €672.5 billion. The facility is at the heart of the EU's extraordinary recovery effort, *Next Generation EU (NGEU)*: the €750 billion plan agreed by EU leaders in July 2020.

The RRF includes €360 billion of loans and €312.5 billion of grants, allocated on the basis of a range of criteria: unemployment (2015-2019), inverse GDP per capita and population share during the period 2021-2022 (when 70% of the grants will be allocated), and the drop in real GDP in 2020-2021, inverse GDP per capita and population share in 2023 (30% of the funds, both grants and loans).

The funds will be disbursed to member states, and will be based on national recovery and resilience plans, which should include reforms and public investment projects.

In terms of digitalisation, the very significant fact is that the Recovery and Resilience Facility expressly states that **national plans should provide a minimum of 20% of the resources to foster the digital transition**. The plans should also boost growth, job creation and economic and social resilience, respond to country-specific recommendations provided under the European Semester process and dedicate at least 37% of resources to climate action and environmental sustainability.

6 PILLARS OF THE RECOVERY AND RESILIENCE FACILITY



GREEN TRANSITION



DIGITAL TRANSFORMATION



GROWTH, JOBS AND COHESION



SOCIAL AND TERRITORIAL COHESION



HEALTH, ECONOMIC, SOCIAL AND INSTITUTIONAL RESILIENCE



POLICIES FOR THE NEXT GENERATION

National governments have started to draft Recovery and Resilience Plans, which are to be submitted to the European Union for co-financing under the Recovery and Resilience Facility. In spite of the request that at least 20% of the resources are directed towards digitalisation, many national plans do not reach this threshold (Finland, Poland, Czechia, Romania).

In many countries, the Recovery and Resilience Plans are drafted unilaterally by the governments, without a proper consultation with social partners, often neglecting the positions of trade unions. It is very important that the resources are used for the benefit of all, and in order to identify the priorities for action, **trade unions must be an integral part of the national dialogue on recovery strategies.**

COVID-19 response and national Recovery and Resilience Plans

Country	COVID-19 response (above the line measures: additional & foregone revenues)		National Recovery and Resilience Plans			
	bn USD	% of GDP	Recovery Plan (bn EUR)	Digitalisation (bn EUR)	(%)	
Austria	50.2	11.7%	4.5	1.8	40.6%	<i>no loans</i>
Belgium	41.2	8%	5.9	1.5	25.4%	<i>no loans</i>
Bulgaria	3.1	4.5%	-	-	-	<i>not submitted yet, 6.3bn grants & 4.2bn loans available</i>
Cyprus	1.7	7%	1.227	0.29	23.6%	<i>1 bn grants, 227m loans</i>
Czechia	13.1	5.4%	7.1	1.8	25.4%	<i>no loans</i>
Denmark	18	5.1%	1.6	0.4	23.8%	<i>no loans</i>
Estonia	1	3.6%	-	-	-	<i>not submitted yet, 1bn loans & 1.9bn loans available</i>
Finland	6.8	2.5%	2.1	0.2	10.6%	<i>no loans</i>
France	199	7.6%	40.9	10.3	25.2%	<i>no loans</i>
Germany	419	11%	27.9	14.7	52.7%	<i>no loans</i>
Greece	25.3	13.7%	30.5	6.8	22.3%	<i>17.8bn grants, 12.7bn loans</i>
Hungary	13.7	9.2%	7.2	1.7	23.6%	<i>no loans</i>
Ireland	36.5	9%	1	0.3	29.5%	<i>no loans</i>
Italy	160	8.5%	191.5	55.9	29.2%	<i>68.9bn grants, 122.6bn loans</i>
Latvia	2.9	8.7%	1.8	0.36	20%	<i>no loans</i>
Lithuania	3.6	6.5%	2.2	0.74	33.6%	<i>no loans</i>
Luxembourg	3.1	4.2%	0.09	0.03	32.3%	<i>no loans</i>
Malta	1	7.1%	-	-	-	<i>not submitted yet, 0.3bn & 0.8bn loans available</i>
Netherlands	41.2	4.5%	-	-	-	<i>not submitted yet, 6bn & 55.3bn loans available</i>
Poland	46.3	7.8%	36	7.7	21.7%	<i>33% loans</i>
Portugal	12.6	5.4%	16.6	3.7	22.3%	<i>13.9bn grants, 2.7bn loans</i>
Romania	5.4	2.2%	29.3	5.9	20.1%	<i>14.3bn grants, 15bn loans</i>
Slovakia	4.6	4.4%	6.6	1.3	19.8%	<i>no loans</i>
Slovenia	3.8	7.2%	2.5	0,5	21,6%	<i>1.8bn grants, 700m loans</i>
Spain	97	7.6%	69.5	20.6	29.6%	<i>no loans</i>
Sweden	22.5	4.2%	3.2	0.8	25%	<i>no loans</i>

1.4. National policies to promote the transformation of the industry

European countries have implemented national policies and set up networks of relevant institutions and social partners to assist the digital transition.

This section presents some examples of how the transition towards the Industry of the Future is accompanied by national policies.

Industrie du Futur in France

In 2015, the French government launched the national plan - *Industrie du Futur* (Industry of the Future) - a programme to boost the modernisation of production tools and business models of industrial companies, via digital technologies. The same year, the Alliance for the Industry of the Future was created, whose role is to coordinate the implementation of the plan. Since July 2018, its action has been supplemented by that of the National Council of Digital Industry, an offshoot of the National Council of Industry (CNI).

The industrial policy has a strong sectoral dimension, as each sector is facing its own challenges and identifies solutions linked to its problems. The established framework allows for the conclusion of Sector Contracts, which carry structural projects, especially on digital issues. Some examples of such projects:

- **Food:** to digitise product information to gain competitiveness and quality, and to restore consumer confidence;
- **Automotive:** a large-scale experimentation programme for autonomous vehicles;
- **Aeronautics:** the programme aims to strengthen the competitiveness, attractiveness and collaboration of the sector through the introduction of new technologies.

In addition, the government wishes to set up **platforms for acceleration towards the Industry of the Future**, by bringing together the entire innovation ecosystem of a sector (large groups, start-ups, research centres, universities...) in a single physical location, in order to find solutions in terms of innovation, training, and support (financial, deployment, integration).

Objectives of the Industrie du Futur plan (France)

Promote the French technological offer

Develop this technological offer

Deploy the plan at the regional level

Train employees

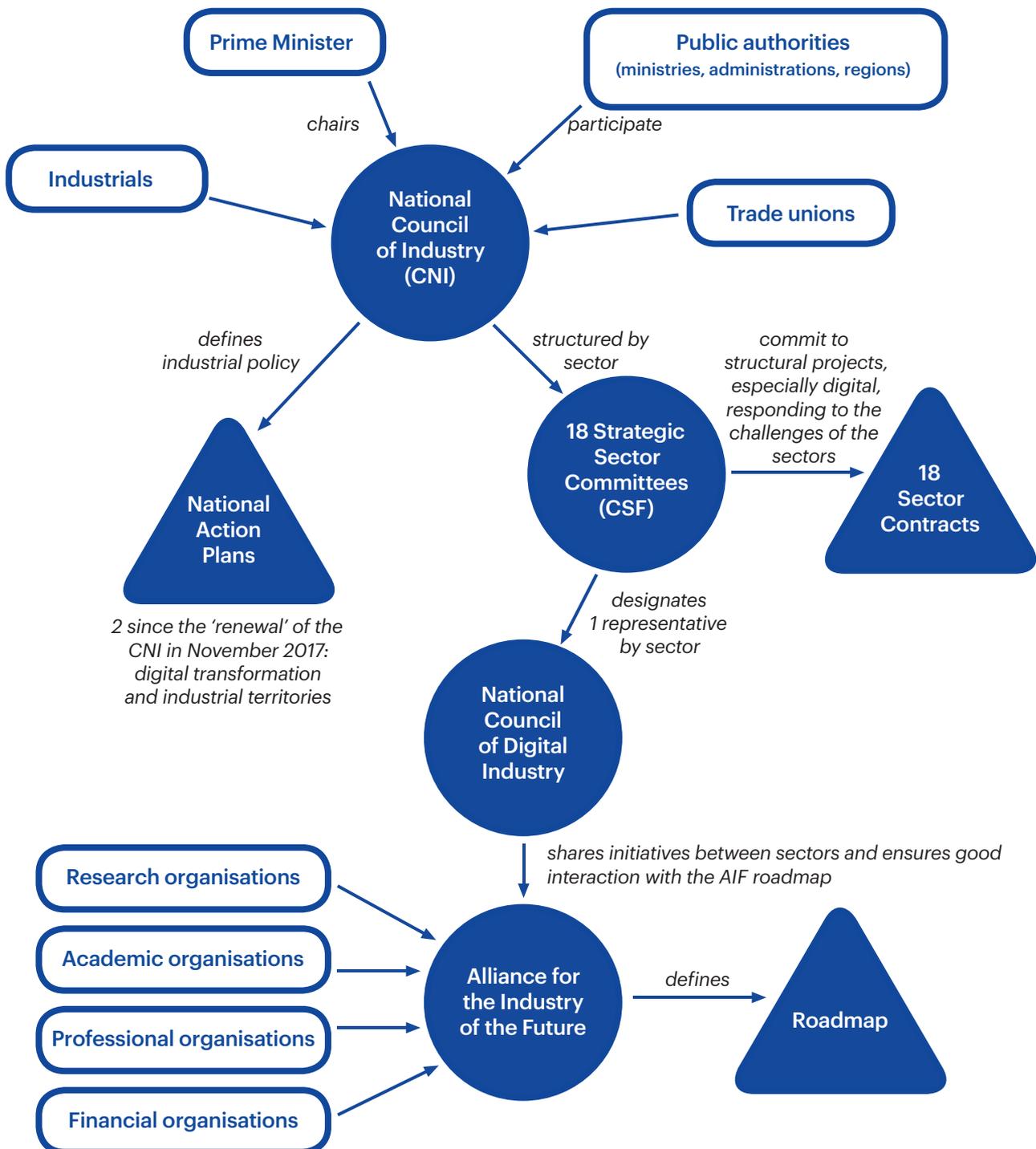
Participate in the normalisation of Industry 4.0 standards internationally

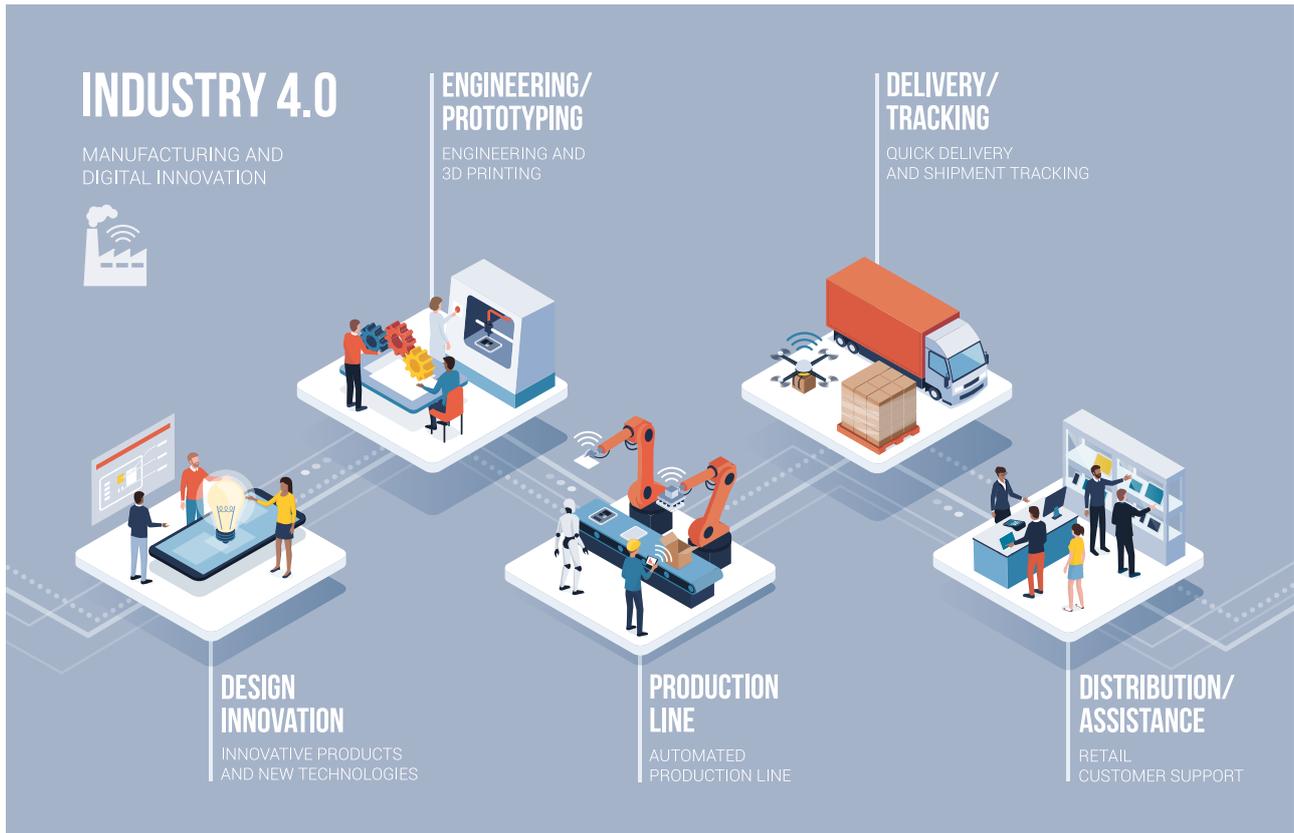
Promote the concept through the showcases of *Industrie du Futur*, a label awarded to companies that have developed an industrial project based on digital technologies

The **Public Investment Bank** (BPI France) also plays a central role in the modernisation of the French industrial tool via digital solutions:

- By granting loans under national programmes linked to the Industry of the Future plan: the ROBOT Start PME programme for the initial integration of robots in 250 SMEs; the 3D Start PME programme for the dissemination of additive manufacturing technologies among SMEs.
- Or by being a pivot between the state and the regions for the business subsidies allocated within the framework of national plans implemented by the regions.

Definition of the digital industrial policy in France





Industria Conectada 4.0 in Spain

The national government’s public project *‘Industria Conectada 4.0’*, implemented since 2014, gives Spanish industrial companies competitive advantages through the implementation of digital technologies. The main objectives are to increase added value and qualified employment in industry; to promote the industrial sectors of the ‘future’ by increasing their growth potential and also to promote the local offer of digital solutions; and to develop differential competitive levers to promote Spanish industry and exports.

This is based on the following premises: focus on sectors with major spill overs and sectors that present opportunities in the value chain; priorities for SMEs, especially medium-sized companies (with international potential and a knock-on effect on Spanish companies) and medium-large companies with potential to be European and world leaders; initiatives focused on technological tools; taking advantage of project synergies.

The lines of action are based on guaranteeing the knowledge and development of Industry 4.0 skills (dissemination and training), multidisciplinary collaboration (companies, investigation centres...), promoting the development of digital tools in Spain and promoting the implementation of these tools to get Industry 4.0 up and running.

Despite these initiatives, the lack of a strong industrial policy, long denounced by the trade unions, limits the potential of these actions.

Germany: Industrie 4.0 development strategy

(excerpts from the United Nations Industrial Development Organisation report, Vienna, 2018)

Germany is a pioneer in recognizing and strategically embracing the organisational and technological trends around manufacturing as drivers of development. Conceived as a marketing tool, “Industrie 4.0” has become a symbol of the country’s determination to secure its future as one of the world’s leading manufacturing hubs (Forschungsunion/acatech, 2013). It encompasses strategic measures to consolidate Germany’s technological leadership in mechanical engineering and related fields.

*The first piece of legislation that can be linked to Germany’s present “Industrie 4.0” strategy was issued in 2006: the “**Hightech Strategie**” (hereafter HTS) drafted by the Forschungsunion and the Expertenkommission Forschung und Innovation (EFI, Expert Commission Research and Innovation). The HTS, dubbed “coordinated innovation policy”, was launched by the German Ministry of Education and Research (BMBF) as a cross-ministerial strategy to strengthen and secure a leading position in research and innovation and as a global production hub. Comparative advantage could not hinge on lowering production costs but on outperforming competitors.*

HTS employed several tools to achieve its intended goals. First, several cross-cutting “activities” have been pursued, including enhancing linkages between research and the private sector, improving conditions for start-ups and SME innovation, accelerating diffusion of innovative technologies, strengthening Germany’s position internationally and investing in people. Second, HTS focused on fostering innovation in three areas:

- *Innovations for a healthy and secure life with a focus on biotechnology, security, plants, energy and environment;*
- *Innovations for a communicative and mobile life targeting ICTs, logistics, space and maritime technology and services;*
- *Innovations through cross-cutting technologies which included production technologies—directly relevant for ‘Industrie 4.0’—even though the strategy still did not make use of that term at the time.*

*In November 2010, the German Ministry for Economic Affairs and Energy (BMWi) introduced its first holistic strategy for Germany’s digital future: **Deutschland Digital** as the framework for all ICT-related government interventions; it was business-oriented, intended to strengthen the country’s position as an ICT location. It emphasised that as of 2009, the contribution of Germany’s ICT industry to gross value added surpassed that of the mechanical engineering or automobile industry. BMWi proposed combining the potential of the ICT industry with other more established industries to achieve an intelligent network.*

*In 2010, the German Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB) published an update of the HTS entitled “**Hightech Strategie 2020**”, which focused less on specific technologies and more on concrete solutions to global challenges. The Forschungsunion introduced five key terms—climate and energy; health and food; mobility; security; and communication—and associated cross-cutting interventions to improve framework conditions.*

The concept of "Industrie 4.0" has rapidly gained popularity, featuring prominently in multiple policy strategies – including the 2014 "**Digitale Agenda**" (DA), implemented by BMWi, the Federal Ministry of the Interior, Building and Community (BMI) and the Federal Ministry of Transport and Digital Infrastructure (BMVI). The DA set out to tap into the digitisation of Germany's economy to foster an innovative economy, a competitive service society and an industrial nation. The ICT sector would offer both business and investment opportunities and be a driver of innovation, productivity, sustainable growth, prosperity and employment. The DA promoted three core strategic objectives: 1) growth and employment, 2) access and participation, and 3) confidence and security.

The DA advocated for a networked economy to recast value chains and transform business models in Germany's leading industries, namely plant and mechanical engineering, car manufacturing, electrical and medical engineering. Germany aspired to be Europe's leading digital economy through the development of commercially viable and reliable technologies, becoming a benchmark for digital applications, including in smart production and logistics. The *Mittelstand* (small and medium-sized enterprises) was identified as a priority sector whose transition towards the digital economy should be supported. Target areas included improvements in innovation capacity and the optimisation of business processes through adoption and/or development of new digital technologies and the promotion of business startups. The DA included broad recommendations only, resorting to advocating concrete measures to achieve these ambitious goals.

A **final update to the HTS** was published in 2014, this time coordinated by the German Federal Government itself and not through one of its ministries. The update reiterated Germany's commitment to leadership in global innovation and to strengthening its status as a leading industrial and exporting nation. Compared to the 2006 and 2010 HTSs, the 2014 update placed greater emphasis on involving civil society. The consulting body of the German government was expanded to include the research union, a traditional partner, but also the Hightech-Forum which consulted the government until 2017.

The implementation of the 2014 HTS rested on five pillars:

- (1) Concrete 'forward-looking projects' (re-branded "strategic initiatives"), which entailed the priority tasks;
- (2) New instruments to improve knowledge transfer between research and business with a regional focus;
- (3) Enhanced innovation dynamic targeting SMEs and technology-based entrepreneurs in particular;
- (4) Improved framework conditions (education and training, financing and legal environment);
- (5) **Increased dialogue between all stakeholders and fostering civil society participation.**

The 'forward-looking projects' sought to translate the core pillars into concrete deliverables; 'Industrie 4.0' was, for the first time, a component of the HTS. The core element 'value creation and quality of life' encompassed the project 'digital economy and society' with the key 'field of action' being 'Industrie 4.0'. The government's goal was to support research and businesses in implementing 'Industrie 4.0', while considering IT security and the aim of becoming a leading supplier and leading market for 'Industrie 4.0'. The update called for an assessment of possible implications of 'Industrie 4.0' on jobs and the need to protect the interests of both employers and employees.

Strategy Industry 4.0 in Czechia

Exporting manufacturing industries are the engine of the Czech economy. Czech companies mainly supply industrial components and are highly integrated into the German industrial supply chain. Therefore the digitalisation of the industry is a key factor for the economic development of the country.

In 2015, the Czech Government approved the Action Plan for the Development of the Digital Market, which dealt with the potential impacts of digitalisation for the Czech economy and society as whole. Since then, numerous initiatives have been developed regarding various topics: Action plan for 'society 4.0', rules for digital friendly legislation, digital education, digital literacy, integration of digitalisation issues in strategies for economic growth, 'Digiczech', and many more.

A national strategy '**Industry 4.0**' was published in 2016, showing possible trends and outlining measures that would boost the economy and industrial base. The strategy was based on an extensive report which analysed the consequences of digitalisation on industry and labour. The strategy has been consulted with multiple stakeholders (academia, R&D consultants, employers, public administration, etc.), but **trade unions have not been involved**. ČMKOS (the Czech-Moravian Confederation of Trade Unions) openly complained of wilful neglect with respect to the opinions of the trade unions. Following this, unions have been involved in a debate on digitalisation and automation at the Czech Council of Economic and Social Agreement, which has highlighted the need to address the social impacts of digitalisation on the labour force.

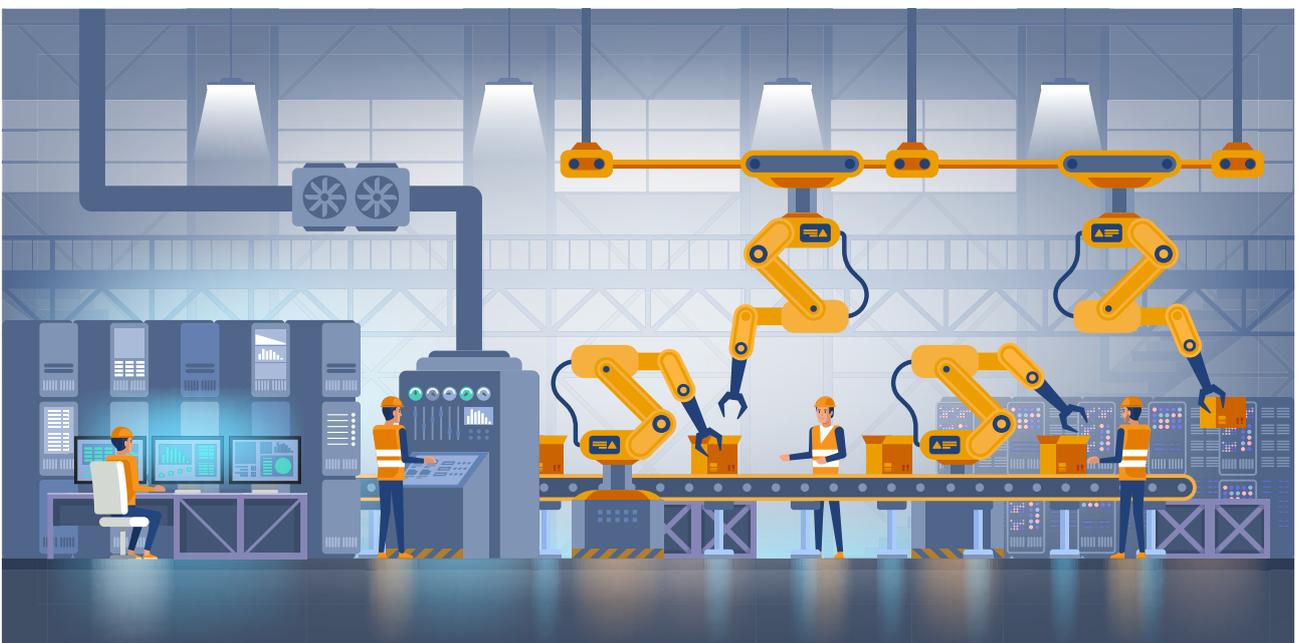
In 2017, the Czech Ministry of Labour launched a large-scale analytical study (Work 4.0) aiming at studying the social impacts of digitalisation on the labour force. The same year, a '**Digital Agent**' was appointed, tasked with coordinating the activities of individual state authorities in preparing specific strategies (industry, but also in education and employment policy, among others). In 2018, '**Digitalni Czesko**', an updated government programme on digitalisation was published.

In spite of the seemingly complex framework, Czech Government programmes relating to digitalisation remain very general and seldom implemented, according to the social partners.

2

Impact of digitalisation on work

- 2.1. Main concerns of employees and unions
- 2.2. Impact on employment
- 2.3. Digitalisation and productivity
- 2.4. Impact on working conditions
- 2.5. Outsourcing and polarisation of work
- 2.6. The issue of skills and need for training



2.1. Main concerns of employees and unions

When it comes to digitalisation, there are no minor challenges for the unions. From skills to the organisation of work, new technologies have an overwhelming impact on the world of work.

Results of the trade union survey (2019)

In 2019, industriAll Europe and Syndex conducted a detailed survey on the implications of digitalisation on employees and unions. 132 answers from 11 countries were received. For the purpose of the analysis, we have split the countries into three regions: Northwestern Europe (Germany, Belgium, the Netherlands, Sweden and Finland), Southwestern Europe (France, Spain and Italy), and Central and Eastern Europe (Poland, Czechia and Romania). The regional and European results were weighted, based on the number of industrial workers in each country.

When asked to identify their main concerns in relation to digitalisation, the most frequent answer at the European level was “Adapting skills to new technologies” (81%), while “Vocational training, future skills needs and lifelong learning programmes” was in 6th place (70%) among the 15 proposed answers, proving that **the impact of digitalisation on skills is the primordial preoccupation of the unions.**

Main concerns of employees and trade unions in the face of digitalisation

Impact on skills

“Adapting skills to new technologies” (81%)

“Vocational training, future skills needs and lifelong learning programmes” (70%)

Intrusion of work-related technologies into the lives of the workers

“Work-life balance” (75%)

“Being constantly available” (70%)

Impact of technologies on productivity and work organisation

“Performance monitoring” (74%)

“Flexible working time” (73%)

Changes in employment terms and contracts

“Change in the employee’s contract” (52%)

“Increase in the number of unusual contracts” (51%)

Collective representation and social dialogue

“Employee participation in the workplace” (51%)

New ways of working

“Mobile work” (58%)

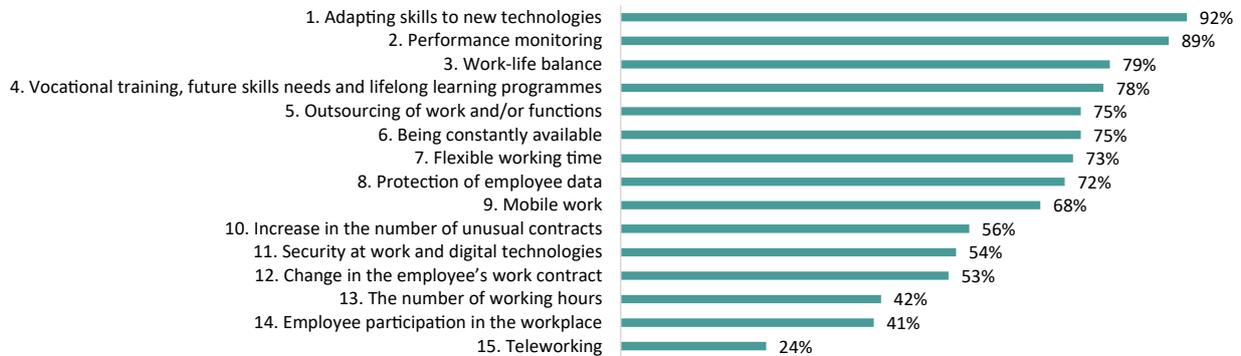
“Teleworking” (37%)*

*The survey was conducted before the COVID-19 pandemic.

Percentages represent the weighted number of positive answers at the European level.

Main concerns of employees and trade unions in the face of digitalisation (% of positive answers by region, weighted average, Syndex survey of trade unions, 2019)

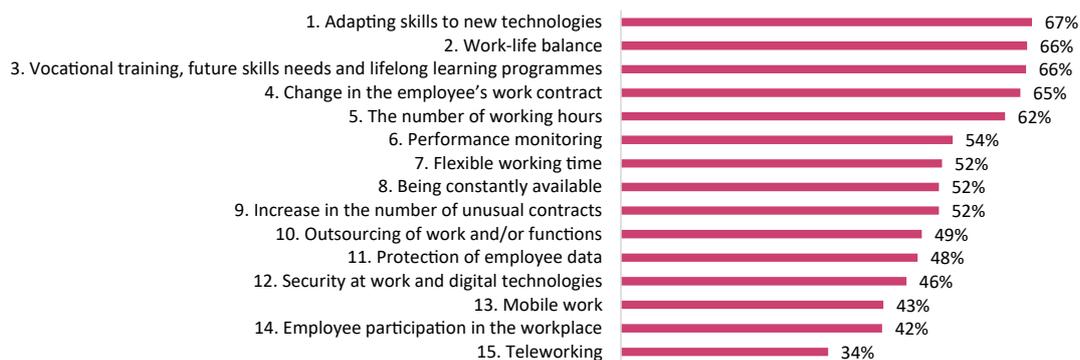
Northwestern Europe (Germany, Belgium, the Netherlands, Sweden, Finland)



Southwestern Europe (Spain, Italy, France)



Central and Eastern Europe (Poland, Czechia, Romania)



Total Europe (11 countries)



Another very significant dimension is related to the intrusion of work-related technologies into the lives of the workers. Among the concerns cited by the unions was the answer 'Work-life balance', which came in second position at the European level (75%), while 'Being constantly available' was also very high, in 5th place (70%)", and the 'Protection of employee data' in 8th place (66%). The 'Security at work and digital technologies' is also a significant issue, although less frequently mentioned in the survey (52%).

The impact of technologies on productivity and work organisation is also of primordial concern. In third and fourth position among the concerns cited by the unions were 'Performance monitoring' (74%) and 'Flexible working time' (73%). Other related issues also received high scores: 'Outsourcing of work and/or functions' (70%), 'Mobile work' (58%), and 'The number of working hours' (52%).

The changes in employment terms and contracts induced by digitalisation are a matter of concern for around half of the participating unions: 'Change in the employee's contract' (52%) and 'Increase in the number of unusual contracts' (51%) were among the less frequent answers in the questionnaire.

The matter of 'Employee participation in the workplace' was also cited by around half of the participants (51%).

As the survey was conducted before the COVID-19 pandemic, a less significant impact of digitalisation was considered to be 'Teleworking', with a score of only 37% (the only answer with less than 50%). **It is obvious that the issue of 'Teleworking' has become much more prominent in the current world, affected by the COVID-19 pandemic.** We dedicate a separate chapter in this report to this issue, which was not at the centre of the trade unions' preoccupations a couple of years ago.

Some regional differences are visible in the results of the survey. While 'Performance monitoring' is the second most significant issue in Northwestern Europe, with a very high score of 82%, this concern is less prominent in Southwestern Europe (69%) and even less so in Central and Eastern Europe (54%). The 'Outsourcing of work and/or functions' is a significant issue in Western regions (75% in Northwestern Europe and 77% in Southwestern Europe), but it only comes in 10th place in Central and Eastern Europe, with a score of 49%. To give another example, 'Flexible working time' is the first issue in Southwestern Europe (85%), but comes only in 7th place in Northwestern Europe (73%) and Central and Eastern Europe (52%).

Trade unions in Central and Eastern Europe are highly preoccupied by the 'Changes in the employees' work contracts' induced by digitalisation and the evolution of 'The number of working hours' - these two issues receiving high scores of 65% and 62% (in 4th and 5th place). These matters seem much less significant in Northwestern Europe (in 12th and 13th place) and Southwestern Europe (in 15th and 11th place).

Interestingly, there are no significant differences among regions when it comes to concerns over the effects of digitalisation on 'Work-life balance', the matter ranking 2nd in Central and Eastern Europe, 3rd in Northwestern Europe and 5th in Southwestern Europe.

2.2. Impact on employment

The effect of digitalisation on employment is not linear. While in manufacturing it can lead to a substitution of human work by machines, for other jobs in industry it can be a solution to safeguard employment by opening up new business areas, developing new products and creating new 'tech jobs'.

Not black or white

It is believed that the use of digital technology is always related to an increase in productivity and rationalisation, which can be linked to staff reductions. In manufacturing and production-related occupations, for example, the technologically possible substitutability potential was assessed at over 70% in Germany (Dengler and Matthes 2018). That does not mean that 70% of employment will in fact be replaced by machines and computers, but rather that 70% of the occupations could theoretically be substituted. According to research conducted in Germany, staff reduction as a result of digitalisation is expected, in particular in the case of 'metal, plant construction, sheet metal construction, installation, assembly and electrical occupations' (-14.5% by 2035) and 'machine and plant controlling and maintenance occupations' (-15.1% by 2035) (Zika et al. 2018).

On the other hand, digitalisation can be a measure to safeguard employment and good working conditions. For example, the introduction of remote services can help to open up new business areas (Gerst 2020). For worker representatives, it is important to effect the introduction and implementation of digital techniques – with the aim of averting potential disadvantages of digitalisation and to take into account employee interests in the sense of 'good quality work'. For this purpose, the potential consequences of digitalisation have to be analysed by unions. As a result, IG Metall has developed the so-called '**Transformation Atlas**' ('Transformationsatlas') (IG Metall 2019) and the so-called '**Company Map**' ('Betriebslandkarte') (IG Metall NRW 2020), to aid unions and companies dealing with the transformations induced by digitalisation.

New studies report that the push for digitalisation due to COVID-19 will lead to an increased substitution of employment in some areas – especially where the risks of infection in the workplace are high, since more or less close physical or customer contact is unavoidable in the exercise of the activity (Grunau et al. 2020).

Sweden: rather positive outlook

Though quantitative figures do not exist, Swedish trade unions feel that job losses and job wins roughly balance each other, without any dramatic negative effects (and not comparable to the crisis in 2008/2009). The Swedish labour market, according

to interview partners, has been remarkably resilient, with job growth quite evenly shared across different income groups. As regards the future however, research carried out by Unionen has revealed quite a significant percentage of the workforce that is, at least potentially, facing risks due to automation and robotisation (Unionen 2020a). At the same time, Unionen sees that new tech jobs are created due to investments in current and future companies, for example in relation to the green transition in the automotive and steel industries. Therefore, the unions' outlook for the future is positive regarding jobs, but workers will need to upskill and reskill.

Spain: research suggests a direct link between robotisation and job losses

An ambitious study conducted in Spain by Fundacion SEPI (2018) drew the conclusion that **over the period 2007-2016, the robotisation of Spanish companies led to a 9.9% reduction in employment.** This process was not homogeneous during this period: between 2012-2016 (economic growth phase), robotisation led to a 16.7% reduction in employment in industrial companies. The automation of routine tasks is part of this trend. Internal reports from trade union organisations confirm this analysis - for the automotive sector, USO has carried out a study which counts a 35% negative impact on employment.

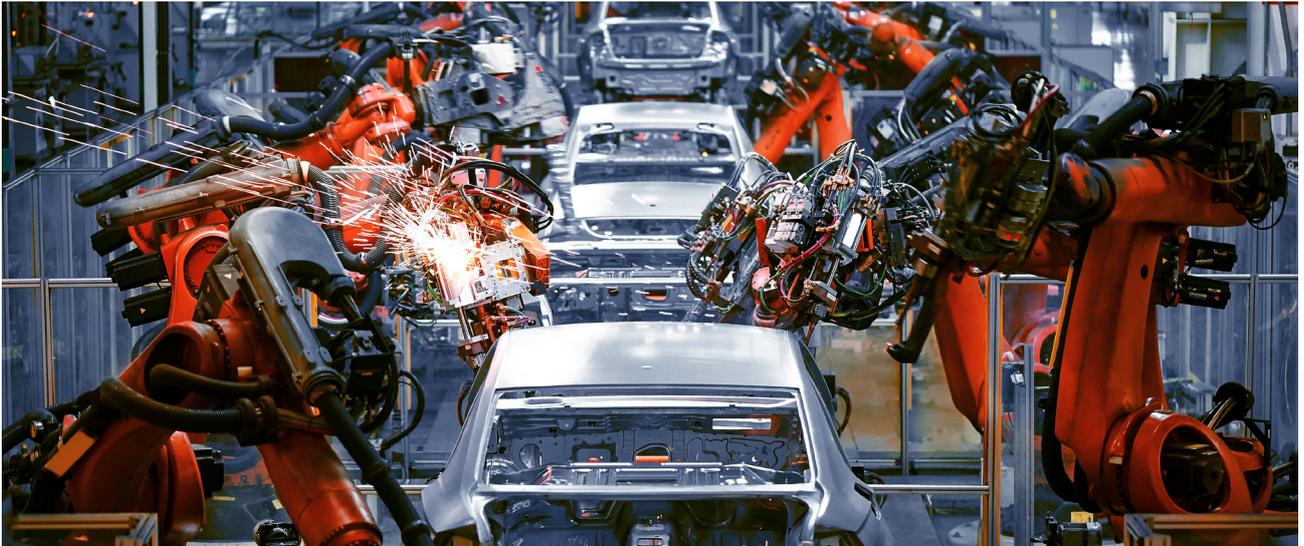
The field research conducted by Syndex showed a consensus in the perception of trade unions that digitalisation reduces unskilled jobs with repetitive tasks, but at the same time, most of them consider that skilled jobs in industry-related tertiary activities will be created. On the other hand, a significant proportion of respondents consider that digitalisation favours the emergence of new forms of work. The labour inspectorate and trade unions have recorded an increase in new forms of work, such as 'bogus entrepreneurship', mainly in service activities.

Romania: although automation could lead to workforce reductions, new technologies could also save jobs

Syndex interviewed trade unions from the energy and automotive sectors, and observed a high level of concern about the changes induced by the robotisation and digitalisation of companies in terms of employment and adaptation of skills.

In the **energy sector**, the requirements of the European Commission in terms of emission reduction mean that new technologies should be applied in the natural gas sub-sector and in the production of electricity. Many of these technologies have not yet been discovered and trade unions fear that by 2050, the gas sector could experience a catastrophic scenario compared to that of the mines, which were closed and employees laid off due to the lack of investment (according to a trade union representative, the last technologisation in mining was made in the 1970s). In this respect, discussions are held at national level on the importance of rapid investments when new technologies will be available.

Overall, the trade union representatives from the energy sector see the technologisation and automatisisation needed to comply with the European antipollution requirements as a prerequisite to remain competitive. They do not see these processes as a threat to the labour force, but rather as **a requirement to prevent job losses in the sector by not being productive.**



In the **vehicle assembly industry**, the level of automation and digitalisation is among the highest in the economy. Robots and cobots are used in the assembly lines, and in the logistics and painting departments. According to the interviewed trade union representative, “complete robotisation can be a threat for employees, but the workforce is still cheaper than investing in robots. Also, the work in the department of quality control cannot be performed by digital equipment and is under no threat of being digitalised.”

The relation between labour costs and digital investments was also mentioned by trade union representatives from the chemical industry. In the pharmaceutical, rubber, varnish and paint sub-sectors, digital investments were made and generally improved working conditions and increased productivity, but *“complete automation is not considered a threat yet because of the cheap workforce”*. Although automation leads to the replacement of some of the tasks performed by humans with machines, new technologies can also allow an increase in production and thus stimulate employment. In this respect, the trade unions from the sector consider that new technologies are a necessity in order to revitalise the sector.

2.3. Digitalisation and productivity

Trade unions are aware of the productivity gains induced by digitalisation. The main concern is to be informed, consulted and make sure that workers receive a part of them.

Lack of transparency

There is a consensus that digitalisation reduces errors, improves quality, leads to productivity gains and is therefore a source of competitiveness. While trade unions have an understanding of the productivity gains induced by digital solutions, there is a deficit of information and consultation around new technologies and their impact on workers.

For instance, in Spain, information on productivity gains resulting from digitalisation is not communicated to employee representatives. These gains may only be indirectly observed in the variable remuneration of employees, part of which depends on productivity.

This lack of vision of value sharing can be explained by the legal framework, a restrictive interpretation of it and a specific cultural tradition of work. Digitalisation is conceived as a component of work organisation, and the organisation of work is one of the prerogatives of the company's management. Works Councils are entitled to be consulted on the subject only if the company's decisions result in a substantial change in the organisation of work. A substantial change is not understood by the number of workers affected, but by the change in working conditions (working hours, distribution of working time, remuneration system, etc.) that are laid down in the collective agreement or company agreement.

Although the case above describes the situation in Spain, similar situations occur in many Southern, Central and Eastern European countries. In Northwestern European countries, trade unions are involved in more specific discussions with the companies on issues related to digitalisation and impact on productivity.

Italy: performance monitoring and increase in productivity

According to the report by the Fondazione Claudio Sabatini, one of the most in-depth Industry 4.0 microeconomic studies that exists in Italy, digital modernisations involve process reorganisations. These reorganisations affect the production process, as well as technical and managerial planning, and that ultimately involves the establishment of various lean organisations.

In this respect, the impacts are significant. For example, given that digitalisation leads to an organisation of work that aims to

eliminate any time that does not create added value, we see an increase in the saturation of working time, ensured thanks to technological tools that allow monitoring (employee performance).

In terms of employment, the study predicts that with the automation of routine tasks, medium-skilled jobs will be reduced, which will lead to a polarisation of the labour market between highly-skilled (and equally well paid) positions and low-skilled jobs. However, companies' strategies are focused not on eliminating jobs, but on increasing production and productivity (without increasing the use of labour). Indeed, today the level of industrial production is approaching the pre-crisis level, but employment has not increased. In any case, instead of a decrease in employment, internal moves to new positions are observed.

There is a strong consistency between the results of the Fondazione Claudio Sabatini report and the results of our survey. We have observed that employees do not clearly see a negative effect of task automation on employment and rather believe that Industry 4.0 is creating new jobs in industry-related services. However, there seems to be a prevalent belief among respondents that digitalisation encourages outsourcing.

The awareness on the part of trade unions of the productivity gains derived from digital transformation has made the sharing of value creation a central issue in their strategy related to Industry 4.0. The redistribution of productivity gains from digital transformation has been a central part of collective bargaining since 2019.

“Between 2007 and 2017, 300,000 jobs in metallurgy were eliminated and employee costs remained the same, among the lowest in Europe. In 2019, for the first time, we asked for a real redistribution of productivity.”

Valentina Orazzini, FIOM-CGIL, on Italian collective bargaining

Sweden: digitalisation is needed to secure the economic model

For Swedish trade unions, digitalisation and automation – though related to significant change and employment impacts – are the main drivers of productivity increase and regarded as a process that is generally important for the global competitiveness of Swedish manufacturing. Therefore, Swedish unions support digitalisation and technological change as a means to strengthen the position of national manufacturing companies and the creation of new jobs and business. Swedish trade unions stated that job losses due to technological change and productivity and/or efficiency increase have been a permanent feature of change that cannot be resisted. On the contrary, the change should be supported because it is the only way to keep economic activities and employment within a country that is characterised by comparatively high wages and above average working conditions.

Finland: productivity, wage norm concept and polarisation of employment

During the interviews conducted for this study, we have observed a consensus among trade unions, experts and employers' organisations that digitalisation **has a positive impact on the Finnish industry overall**, although it has some adverse effects, such as increased polarisation of revenues and a progressive de-industrialisation of some tasks outsourced to agency workers or to other sectors.

The interviewed trade union representatives generally agreed that digitalisation is a source of competitiveness as it results in productivity gains, an evolution that is indeed visible in the national accounts, although there are certain variations among industries: from 2009 to 2017, productivity rose by 62% in the wood industry (robots and machines are extensively used in this sector for cutting down trees and processing wood products), by 53% in the paper industry and by 58% in the manufacture of electrical equipment. Although it is not possible to track a direct link between the level of digitalisation and the increase in productivity, there seems to be a consensus among the unions that these two phenomena are closely related.

Similar to many other countries, the link between productivity and wages has a central place in collective bargaining in Finland and other Nordic countries. In this respect, a common strategy in the region consists of setting up a **wage norm concept**, under which **the long-term wage growth must reflect the increase in productivity and inflation**. This is generally enacted by central level collective bargaining, and industrial sectors play a major role in setting up standards for the whole economy. Until now, the trade unions we interviewed have noticed a rather good correlation between productivity and salaries, although the Competitiveness Pact⁵ has slowed down wage increases.

The link between digitalisation and the increase in apparent productivity in industry is not only owing to more efficient operations, but is also, at least partially, due to the outsourcing of some activities to temporary agency work or to other sectors, which reduces employment numbers in industrial sectors without actually leading to the disappearance of jobs. This translates into higher productivity indicators in industry, but is also a reason for **increasing polarisation of employment and wages** (outsourced or agency work is paid lower than the industrial jobs). This seems to be true not only for Finland, but for most of the Northern countries analysed, as 75% of the region's weighted answers in our survey showed that *„by relying on digital technologies, the industry is increasingly outsourcing some activities, especially services“*.

5 The Competitiveness Pact was signed by most of the Finnish unions in June 2016, after a period of economic stagnation and was meant to boost labour productivity and create new jobs. After more than one year of difficult negotiations, which also involved a countrywide mass demonstration organised by the unions, the tripartite Pact was concluded with significant losses on the employees' side. Specifically, the Pact included a wage freeze for 2017, reduced pay for public sector employees (e.g. 30% reduction of holiday bonuses), a transfer of a part of social security contributions from employers to employees (up to 1.2% from 2017 to 2020) and a 24-hour extension in annual working time without additional compensation. At the same time, the Finnish Government has promised tax reductions for 415 million euros and the creation of 40,000 new jobs.

Although it is estimated that the Pact had a positive impact on the cost-competitiveness of the Finnish economy, it has also prompted significant changes to the national system of industrial relations. The Pact has triggered a process that was labelled 'centralised decentralisation' (Paul Jonker-Hoffrén), under which agreements are concluded, no longer at national level, but at sectoral level, with an increased scope for local or firm-level negotiations. Under the new system, export-oriented manufacturing sectors have a central role in setting wage levels to be followed by the other sectors, including public and private services.

The provisions of the Competitiveness Pact came under scrutiny during the collective bargaining in the industrial sector at the end of 2019 and the beginning of 2020. These negotiations were particularly difficult, creating conflicts in a number of key manufacturing sectors – besides the pay rise, unions were also requesting the removal of the 24 hours of unpaid work introduced in 2016. By the end of February 2020, most of the industry sectors agreed on new collective agreements, in general providing for approximately 3.3% wage increases and eliminating the provision regarding the 24 unpaid annual extra working hours.

2.4. Impact on working conditions

The potential of digitalisation should be used to relieve employees of physically and psychologically stressful activities. Systems must be developed in which human labour is not suppressed but upgraded.

Opportunity to upgrade human work

Investments in machinery and equipment always imply changes in the working conditions of employees. With increasing digitalisation, work processes can be intensified. It is important for trade unions to ensure that new technologies and applications do not lead to stress and that the intensification of work is properly managed and rewarded. If implemented responsibly, digitalisation has the potential to relieve employees of physically and psychologically stressful activities.

Virtual working methods enable employees to make their working hours more self-determined and to improve their time sovereignty. However, this applies primarily to planning, commercial and administrative activities. Digital work equipment, such as smartphones, laptops or tablet PCs, as well as cloud computing systems, make it possible to work from home or on the move. This gives employees more room for manoeuvre, but there is always a risk of spatial and temporal 'blurring boundaries' between life and work.

Dealing with privacy and data protection plays a major role in increasing digitalisation and networking processes. Data protection and data security are fundamental prerequisites for the introduction and implementation of digital technologies and their acceptance by the workforce. From a technical point of view, companies have the opportunity to fully document and monitor the performance of their employees as digitalisation increases. Therefore, it is crucial that digital data is not used to monitor employees' behaviour and performance.

Stress and mental exhaustion

The survey by the Central Organisation of Finnish Trade Unions, SAK (2018), found out that for 23% of the respondents the work has become more mentally exhausting with new technology, 35% feel that they are at the mercy of new technology at work; for 47% the new technologies have increased control and supervision of the work, while for 46%, the work is often delayed or interrupted due to slow appliances or malfunctions. Although the figures might appear high, the situation of Nordic countries seems to be better than the rest of Europe.

The findings of the SAK report were largely confirmed by the survey and interviews we conducted in 2019 and 2020. Only one

in three of the Finnish trade unions that we interviewed consider that digitalisation increases employee stress and is a cause of cognitive overload – the result is in line with the findings of the SAK survey and is largely similar to results that we have seen in Sweden or the Netherlands, but much lower than in other countries such as France (86%), Belgium (82%), Spain (64%) or Germany (60%). We can generally conclude that the digital transition is better managed in terms of stress and mental exhaustion in the Nordic countries compared to the rest of Europe.

Why Finnish unions are less worried by the impact of digitalisation on working conditions?

Overall, we found that challenges raised by the Finnish unions are generally aligned with those cited by unions from other European countries, but their level of concern is lower. This could be partly due to the fact that unions in Finland have been dealing with these issues for a longer time, as most of them have units or experts that specialise in this area. Also, social partners benefit from the support of other organisations, such as the Finnish Institute of Occupational Health, that has a dedicated unit analysing the impact of digitalisation and automation on labour, comprised of social scientists, psychologists and educational scientists. The Institute is active in promoting the utilisation of digital solutions in improving working conditions, using modern technologies for safety training and designing a dedicated platform for occupational health.

In Spain, our study found out that the new psychosocial risks are increasing isolation (atomisation of the employee) and employee exhaustion as a result of changes in worker socialisation practices. Tasks are better planned, although digitalisation, in some cases, increases the employee's distress in case of problems, due to a loss of autonomy. For other professional profiles, we observe a rise in responsibility and autonomy (for example, in the automation of production lines, or operators who remain assigned to the automated line).

Flexibility of working hours

There are contrasting opinions on the fact that digitalisation leads to more flexibility in terms of working hours for the employee. At the same time, large companies consider that in the future, working hours will decrease in return for an increased demand for availability, according to the study by the Spanish Fundacion para el dialogo social (2019). In this regard, **the right to disconnect** is increasingly seen as a high priority on trade unions' agendas across Europe.

Improvement of ergonomics

One of the main positive impacts noted by trade union leaders is a reduction in drudgery with the introduction of robots and cobots and the automation of certain tasks in general. However, in the context of increased telework due to COVID-19, trade unions are very concerned about the increase in ergonomic issues due to improper working environments at home.

“Ergonomic problems resulting from repetitive work have been significantly reduced with automation.”

**Hector Illueca,
work inspector from Spain**

Sweden: a positive example, especially in the case of large companies

According to all three Swedish trade unions interviewed in the context of this study, digitalisation all in all has had positive effects on work organisation and working conditions in Swedish manufacturing. Keywords here are “upskilling / upgrading of jobs”, “better work-life balance in working time organisation” and “higher autonomy at the workplace level”. IF Metall referred to the example of AB Volvo, where new technologies have empowered employees and self-organising teams were established.

As regards risks and negative impacts, such as increased work intensity, work overload and unrestricted availability, Swedish unions referred to the **strong role of collective bargaining and agreements at company level by which minimum standards and certain principles are set** (on availability see, for example, Unionen 2015).

Representatives of IF Metall also highlighted that the use of digitalisation as a way to improve working conditions and work organisation has not yet arrived in Swedish SMEs. Smaller and medium-sized companies are generally lagging behind as regards the deployment of digital technologies and processes.

Furthermore, interviewees from IF Metall and Unionen also noted a difference between blue- and white-collar work. Whereas digitalisation and automation in production work is already quite an advanced process, this is a rather new development in administrative and back-office activities, with the expectation that process automation and robotisation will accelerate due to the crisis and the increase in mobile and remote working.

2.5. Outsourcing and polarisation of work

The falling number of jobs in the industry and the higher incidence of agency work as a result of technological changes has a negative impact on union membership. The polarisation of work has disrupting effects on trade unions, as middle-skilled jobs are traditionally considered strongholds of trade unions.

Outsourcing amplified by digitalisation

The company perimeter has been changing, as a consequence of outsourcing, which has been boosted by digitalisation; a good example of this are the platforms that function in a similar way to Uber or Amazon, and that are little by little impacting services linked to industry, such as R&D.

In France, the Kickloox platform lists more than 40,000 engineers and 'tech talents' ready to meet the demands of companies looking for specific skills. Honeypot is a platform focused exclusively on 'tech' professions, which connects workers and companies across Europe. All these contribute to the **increasing individualisation of work**, which loses its collective traits, thus making the question of worker protection (social coverage, remuneration, working conditions, etc.) even more stringent.

On 28 November 2018, the French Court of Cassation ruled that the contract binding a delivery person to a digital platform implies a relationship of subordination, resulting in the mandatory reclassification of these service contracts as employment contracts. This decision could set a precedent for other cases, notably in industry, if it is proven that the workload depends entirely on an external company that has the power to control and sanction.

Spain: polarisation due to digitalisation

Spain is a *tertiary* society that combines *high-skill* and *low-skill* jobs with a potential for polarisation of the labour market. In concrete terms, the labour market in recent years has seen an increase in *non-manual occupations* (better levels of job quality, *white-collar*) and a decline in manual-industrial jobs in relative terms (*blue-collar*), particularly due to the economic crisis and the fall in construction employment.

Raquel Sebastian's work (2018) allows us to shed some light on the effect of technology on employment. From an analytical perspective of the tasks, it confirms the existence of a process of polarisation of the Spanish labour market. Since 1994, employment growth over the period has occurred at the extremes of the wage structure in Spain, i.e. *low-paid* and *high-paid* jobs. The growth of *low-paid* jobs are manual rather than routine tasks. Among the *high-paid* jobs, jobs with a high level of abstract tasks are the ones that have grown the most (abstraction

based on flexibility, creativity and complex communication is not very permeable to substitution by technology).

From the point of view of tasks, it can be observed that manual and abstract jobs have grown the most (especially the latter) while routine tasks have decreased in relative terms. In relation to computerisation, there is a negative relationship between routine tasks and a positive relationship (complementarity) with abstract tasks.

Polarisation is also observed in terms of training: workers without diplomas have moved to the lower end of the wage structure and graduates to the upper end (especially from the 2000s onwards).

Finland: increased incidence of subcontracting

In large Finnish industrial companies, digitalisation is seen as a progressive phenomenon that does not involve sudden disruptions. Investments in new technologies have been continuous and significant in sectors such as mechanical engineering, wood processing, shipyards, etc. However, the unions we interviewed said that these investments were accompanied by an increased incidence of subcontracting. For instance, the shipbuilding industry increased the use of agency workers and seasonal workers from East-European countries after the crisis of the sector in 2010-2012, but at the same time, it invested in high-end technologies in order to build best-in-class cruise ships. Although the link between the two developments – increased digitalisation and increased incidence of agency work – can be debated (is subcontracting triggered by new technologies and if so, to what extent?), the fact that these happen at the same time raises a number of issues that are addressed by trade unions and their partners.

The two developments – technological advancement and higher incidence of agency work – have widened the gap between the competences and the compensation of highly-skilled and unskilled workers. In this respect, one of the perceived impacts of the technological transition in Finland is its impact on the country's welfare model, which has favoured a rather egalitarian distribution in the past. If the digital transformation turns out to be radical, lowering the number of middle-skilled jobs, there is a risk of rising inequality. This conclusion seems to be valid for the Nordic countries in general, as stated in the study 'The Nordic Future of Work', commissioned by the Nordic Council of Ministers in 2018.

The increase of the industrial tasks performed by agency workers raises **the question of the significance of sectoral productivity indicators**, as these are mostly calculated based on the numbers of workers directly employed by industrial companies, while most of the agency workers that perform industrial duties are ignored in the calculations (agency workers are not counted as 'industrial workers'). This complicates the discussion on the evolution of productivity and its effects on wages.

The higher incidence of agency work has triggered a new wave of migrant workers from Central and Eastern Europe, and has raised a number of issues related to the respect of labour legislation, social integration and effects on Finnish local labour force.

2.6. The issue of skills and need for training

The use of digital technologies increases the need for comprehensive competences, such as interdisciplinary working methods, process know-how or interdisciplinary skills, such as problem-solving skills.

Need for upgraded skills for upgraded work

As a result of increasing automation, activities in industry are changing at the expense of manual and routine tasks. As abstract, analytical and interactive activities become more important, work content is becoming more complex and demanding. In the future, it will increasingly be a task of employees to monitor, evaluate and, if necessary, correct automated decisions of machines and plants. All of this indicates that work is experiencing an 'upgrading', and needs for skills and competences are changing accordingly. Trade unions and their counterparts must ensure that current and future workers are well prepared for the transition and that training is adapted to the real demands of the industry.

Germany: training of mentors

As stated by the interviewees, the obstacles towards an adequate skilling of the workforce in the context of digitalisation are the lack of strategic planning, the lack of know-how among managers and employees and the lack of IT staff. In many cases, corresponding qualification concepts are missing as a basis for continuous learning processes (Grunau et al. 2020). Specific training modules are particularly necessary to introduce low-skilled employees to regular company training programmes. It is also important to train training mentors, who support their colleagues in further training and training on the job. As part of a research project, IG Metall has trained works councils and union workplace representatives as training mentors in pilot companies. Within the framework of the '**National Training Strategy**' ('Nationale Weiterbildungsstrategie'), in which the federal government, the federal states, the federal employment agency, employers' associations and trade unions combine their efforts for a new training culture, it was agreed to intensify the training of such mentors.

The COVID-19 crisis could provide an opportunity for many companies to intensify the training of their employees. In view of the increasing internationalisation and digitalisation, a significant increase in company training activities has been noted since the beginning of this century, which was interrupted by the economic and financial crisis of 2008/2009. At that time, the drop in turnover and the deteriorating business expectations of the companies led to a reduction in their commitment to further training. According to data from the Institute for Employment and Research (IAB), this pattern seems to be repeated in the

COVID-19 crisis (Bellmann et al. 2020). About one third of companies in Germany continued to provide further training during the crisis, in particular on e-learning. In the process, digital forms of learning were newly introduced or expanded. However, many companies had to cancel planned or already started further training due to the contact restrictions. Other companies were unable or unwilling to bear the costs of further training due to financial constraints and uncertain business expectations. According to the IAB, only 10% of the companies which were on short-time work in autumn 2020 used the lost working time for training purposes.

Sweden: a new agreement on employment security

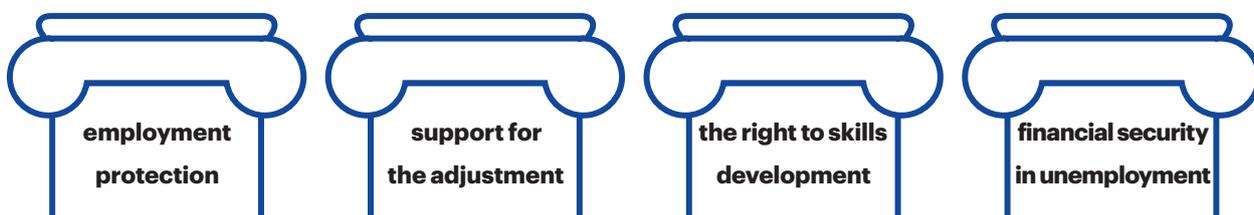
Employees in the manufacturing sector are becoming increasingly highly qualified. According to national figures, as well as experiences reported by the Swedish trade unions, there has been rather a gradual upgrade of the education level among industry workers. Since 2011, the number of higher educated workers is larger than the number of employees who have only completed primary school (Bergström and Ismail 2019).

However, according to the interviewed trade unions, the COVID-19 pandemic and the related acceleration of structural changes have highlighted shortcomings and deficiencies in training and skills development in the Swedish labour market. This has resulted in new demands from the trade unions and has stressed the importance of a landmark agreement between the social partners regarding employment security.

As described by IF Metall, as well as the Swedish Association of Graduate Engineers, there has been a marked difference between the COVID-19 crisis and the crisis of 2008/2009. While a decade ago, companies were rather active in offering training and skills development opportunities to workers that were temporarily laid off, this did not happen during the current crisis. Therefore, the trade unions have stressed the need to improve the Swedish model of security in the labour market in particular in relation to skills and competence developments (IF Metall 2017, Unionen 2020).

In this context, the trade unions have highlighted the important role of a recent agreement between the PTK, the Trade Union Negotiation and Cooperation Council, and the Confederation of Swedish Enterprises that was signed in October 2020 (PTK 2020).

The agreement entails a broader view of employment security, in addition to employment protection, also being about the security that lies in the opportunity to develop competences for the job you have or for the job you want in the future. Significantly improved opportunities for skills development are provided by the agreement, giving individuals the right to financial support for short and longer training to develop their competences in employment or between jobs. The agreement rests on four pillars:



Fixed-term employees and those who work in companies without collective agreements are also covered by the agreement on employment. As reported by trade union representatives, this agreement is a landmark and could result in the largest reform in the Swedish market ever should it receive the necessary public policy support from the Swedish Government.

Agreement on Security in the Labour Market in Sweden (2020)

The Agreement between PTK and the Confederation of Swedish Enterprise provides a basis for a stronger system for security in the labour market. It provides for a **new public study grant for adults**:

- A prerequisite for the parties' agreement is that the state introduces a new public student grant for adults, in parallel with the current student financial aid system. Student support covers the entire labour market and is aimed at those who are already established in the labour market, i.e. have worked for at least 8 years.
- The grant reimburses 80% of the income, up to a ceiling of approximately SEK 25,000, which provides a maximum remuneration of approximately SEK 20,000 per month. Loans can be given of up to approximately SEK 12,000 a month.
- Student support is given for studies for up to 44 weeks (two semesters), with the possibility of an additional 22 weeks (one semester) 15 years after the first 22 weeks have been used. Total 44 + 22 = 66 weeks (three semesters).

TRR (a job security council) already offers extensive support for those who are between jobs. The efforts are successful: during the third quarter of 2020, 94% of the active jobseekers at TRR received a positive solution.

In the event of unemployment, the major improvement is that the individual gets better financial opportunities to study further. With supplementary student support and TRR study allowance, you can train for up to two years to strengthen your position in the labour market. The parties also want to investigate the conditions for a new collectively agreed unemployment insurance. The goal is to improve protection in the event of unemployment by making it easier to be entitled to unemployment insurance and improving benefits for the unemployed.

Through the Agreement, employees also have completely new opportunities to train in order to strengthen their position in the labour market. The so-called 'competence support' involves, for example, financial compensation during both short and longer education. The starting point is that those who receive support also have the right to be available to study. It lowers the thresholds for further education, and even those who have a fixed-term employment have the opportunity to receive support. In addition to financial support during studies, this also includes counselling, study guidance, training that TRR buys from private training providers, and validation of competences.

An important success is that those who are employed on a temporary basis or have suffered from an illness are also covered by the support.

Finland: progress at central level, but certain difficulties at company level

Finnish trade unions are active in the field of continuous education: many of them have their own training centres and have been developing special training programmes to increase the employability of their members. Trade unions are represented in the Education and Training Committee at the level of the Ministry of Education, which establishes general strategies for the educational system in country. Also, unions co-operate with private bodies to promote special trainings – in 2019, the Central Organisation of Finnish Trade Unions established a partnership with Google Finland and Demos Helsinki in order to promote digital learning. Generally, the Finnish educational system is delivering sufficient skills for the new digitalised world – it was estimated that around 45% of Finns are highly educated – and trade unions are actively involved in the process of adaptation.

On the other hand, these evolutions have a certain adverse effect on industrial sectors – the fact that digitalisation has triggered the emergence of many small successful IT companies (many of them opened by former Nokia employees) has harmed the attractiveness of traditional industries for the younger generation.

At company level, continuous training was rather problematic. The SAK report (2018) has shown that digital transformation was not always accompanied by due trainings in Finland: for 40% of the respondents, the employers have not arranged enough training in the use of new technology. Therefore, the trade unions we interviewed have recognised that there is a need to put more pressure on employers to deliver adequate training to their employees in relation to the new digital solutions deployed.

Spain: the needs in terms of skills and trainings are perceived but not clearly defined

The report *Digitalización y gran empresa* (Fundacion para el dialogo social, 2019) emphasises that training is essential for the development and viability of companies (large or small), for the professional future of employees, and is a key element of adaptation for the process of digital transformation. On this theme, in-house training varies considerably between small and large companies (for the former it is practically non-existent).

Training on digitalisation, although considered very important for the digital adaptation and transformation by companies, has remained limited. Only companies that perform well ensure ambitious Industry 4.0 training plans, agreed with employee representatives, although as Matias Carnero (UGT), President of the SEAT Works Council, assures, *“it is presumed that there will be people who will have no options”*.

For this reason, one of the most important axes for the trade union organisations is the need for continuous training, and it is the training committees in the Enterprise Counties that are the most active. However, there is still no clear vision on the content of the training needed for the work of the future in trade union organisations.

France: e-learning boosted during the crisis

France has a complex system of social dialogue aiming to monitor skills adaptation, including in relation to new technologies, and to define needs for training at sectoral and company level. Without any obligation to reach an agreement, negotiations on the means to anticipate and adapt to new market trends in terms of employment and skills are held at various levels in the **strategic workforce planning** framework (*GPEC - Gestion Prévisionnelle de l'Emploi et des Compétences*). At sectoral level, this approach is complemented and enforced by annual or multiannual agreements concluded between the State and one or more professional branches for the implementation of an action plan, aimed at anticipating the consequences of economic, social and demographic changes on employment and skills. These agreements, called '**Employment and Skills Development Commitments**' (*EDEC - Engagements de Développement de l'Emploi et des Compétences*), have been signed, for example, in the chemical, plastic, aeronautic and automotive industries. The agreements establish collective actions aimed at ensuring that companies in the sectors secure employment and skills adaptation to the digital or ecological transition, build and share HR tools related to these transitions, create new training methods and support skills mapping.

In terms of employment and skills, the effects of digital transformation have already become apparent when it comes to:

- Job cuts, leading to geographical mobility or readjustment of employees' skills
- Elimination of tasks without added value and reorientation towards new tasks
- Elimination of some attractive tasks, making employee retention more difficult
- Job enrichment, with new possibilities opened by digital means
- Loss of autonomy, with jobs being guided by programmes
- New professions, tied to data analysis and new technologies

In order to keep up with the need for new skills and given the new restrictions related to the pandemic, e-learning has received a significant boost. Employers have taken advantage of the increased incidence of part-time work during the pandemic to provide employees with training outside regular working time, with funding from the National Employment Fund.

Poland: risk of a shortage of skilled labour

According to the interviewed union representatives, digitalisation poses a risk of a shortage of skilled labour in the industry if training does not fully play its role in the process of anticipating future changes in connection with the energy transition. The crisis could widen inequalities in the digital field, the generalisation of teleworking being a glaring example. In Polish industry, digitalisation is also leading to profound changes in support functions (HR, finance, accounting, etc.) in the many shared service centres that have taken up residence in the country. In terms of training, **the weakness of the sectoral social dialogue complicates the essential work of inventorying strategic skills and mapping risks in Polish industry**. These steps are, however, necessary for structuring and articulating future trade union strategies for the defence of industrial jobs in the face of the many challenges posed by digitalisation.

3

Telework needs fair rules for all

3.1. Spread of telework during COVID-19

3.2. Economic impact of telework

3.3. Efforts to regulate telework at national level

3.4. Telework: my right, my decision

(an industriAll Europe campaign)



3.1. Spread of telework during COVID-19

The incidence of teleworking during the pandemic, although significantly boosted due to the imposed restrictions, was not evenly spread across sectors and countries. Although there are suggestions that telework has allowed companies to save jobs during the pandemic, its long-term impact depends on the framework under which it is going to be maintained or implemented across industries.

Extensive use of telework, but not equally spread across countries

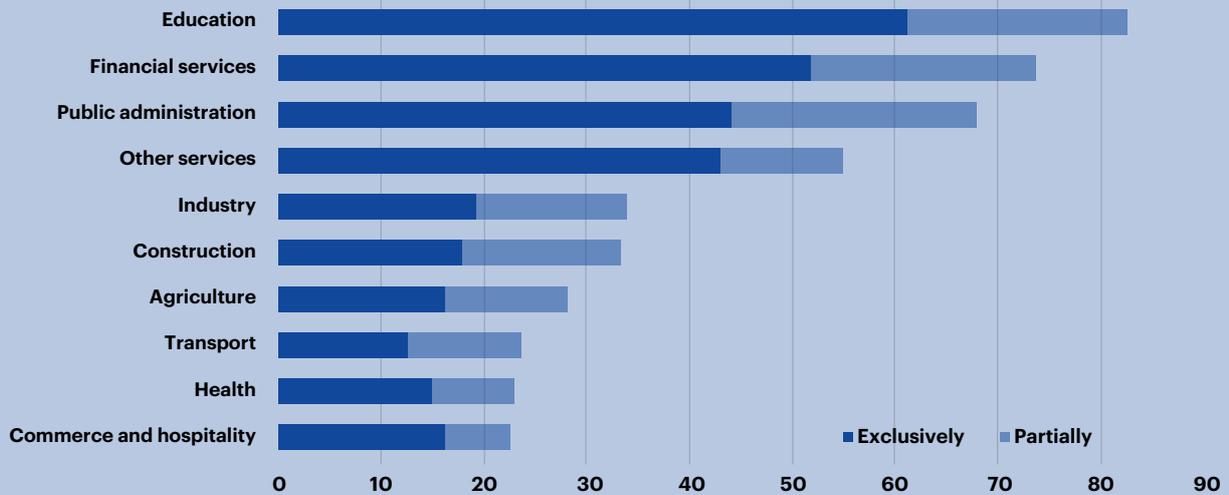
The Coronavirus pandemic has led to a surge in working from home, as companies have tried to maintain a certain level of activity despite the lockdown. While for many workers it is physically impossible to work from home (either because of the specificities of their jobs, or because of a lack of the required infrastructure), there is no doubt that the soaring numbers of people working away from their usual places of work during the Coronavirus crisis can be said to be a huge experiment for both workers and companies, with important long-term consequences for the organisation of work. Although it is too early to assess the extent of teleworking incidence after the pandemic, experts and managers from large companies believe the current pandemic will prove to be a “tipping point” for the uptake of telework. The arguments in favour of this belief are clear: both workers and companies are forcefully getting used to a situation that offers many advantages - both for the work-life balance for workers and important savings for companies, to give just two examples.

During the peak of the pandemic, **one third of European employees worked from home**⁶. Additionally, more than 14% of the respondents to the Eurofound survey said they had various locations for working during the pandemic (home, employer’s premises and elsewhere). The incidence of teleworking was higher in Western Europe (the highest in Belgium and Ireland, but also high in France) and Southern Europe (Italy and Spain), and lower in Central and Eastern European countries (Croatia, Poland, Slovakia and Bulgaria).

Despite the drawbacks and criticism, it is very likely that working from home will remain a mass phenomenon even after the coronavirus pandemic has passed. In spite of the negative experiences with teleworking, especially in terms of job quality, there will be a certain level of appetite for working from home among employees in the post-COVID-19 world, which **poses a number of challenges for employers and trade unions to better regulate the framework under which teleworking is organised.**

⁶ Ahrendt, Dapne, Cabrita, Jorge and others, Living, working and COVID-19, available at: <https://www.eurofound.europa.eu/publications/report/2020/living-working-and-covid-19>

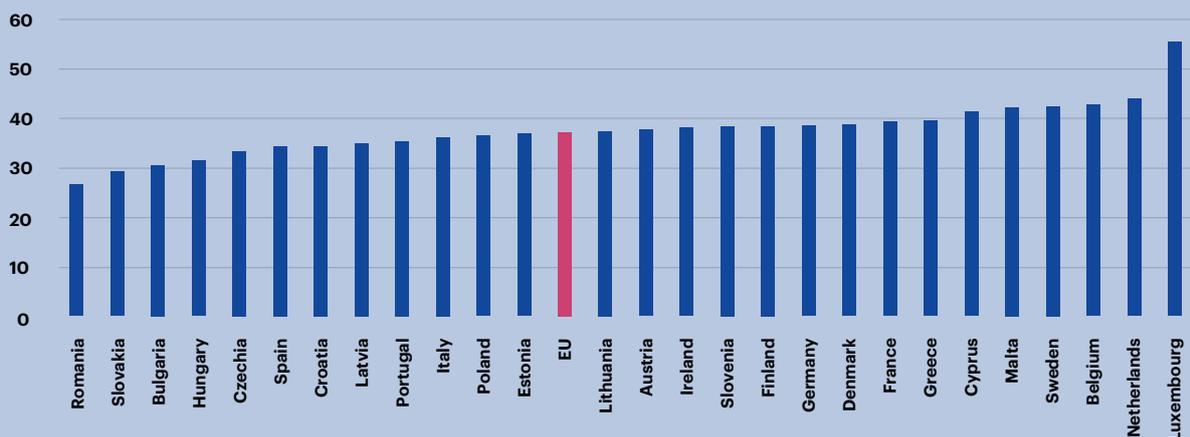
Working from home during COVID-19, EU27 (%)



Source: Eurofound, Living, working and COVID-19

Telework is not evenly spread across economic sectors. There are structural characteristics of certain jobs that make them impossible to perform remotely from the workplace, and these functions are frequent in industry. While more than half of the employees in education and financial services were teleworking during the COVID-19 pandemic, the share of employees in industry fully working from home was below 20%, while another 14% were working partially from home and partially at their workplace.

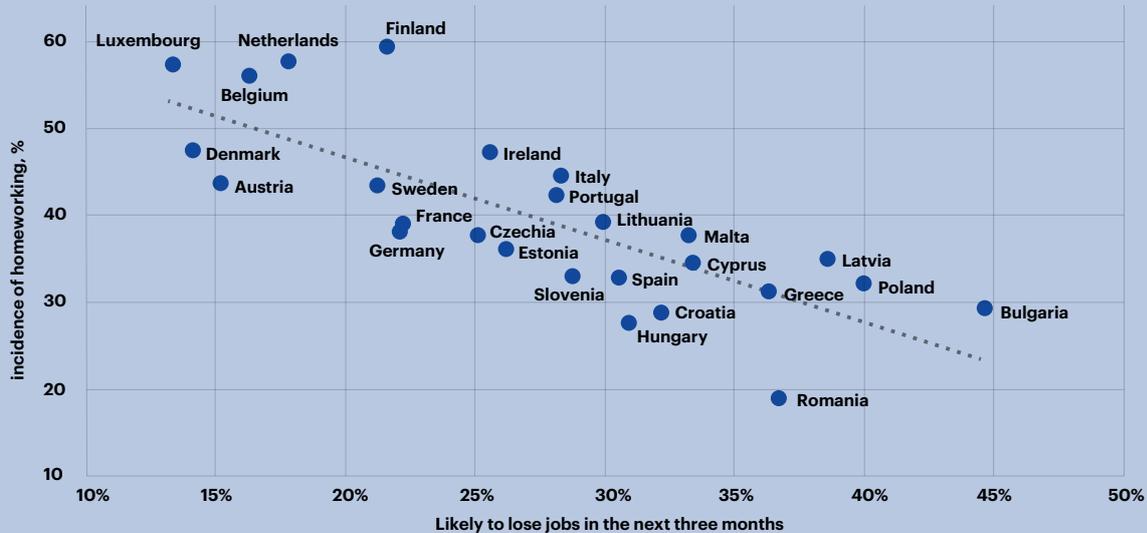
Share of teleworkable employment, by country, in EU27



Source: EC and Eurofound, Teleworkability and the COVID-19 crisis: a new digital divide?

The different structures of national economies in Europe are reflected in the varying levels of the share of teleworkable employment among EU countries. This indicator refers to jobs that can, in theory, and with the available technologies, be performed remotely. The share of teleworkable jobs in total employment is lower than 30% in Romania and Slovakia, and higher than 40% in Sweden, Belgium and the Netherlands. The highest level is registered in Luxembourg, due to the high development of the tertiary sector in the country. The EU average stands at around 37%.

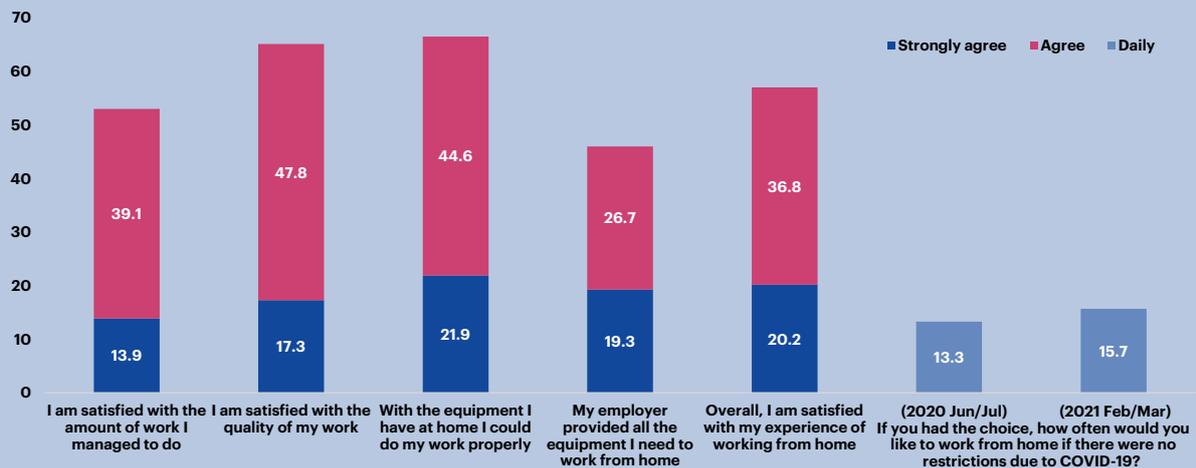
Higher incidence of homeworking, lower self-reported likelihood of job loss



Source: EC and Eurofound, *Teleworkability and the COVID-19 crisis: a new digital divide?*

In countries with a higher percentage of homeworking, employees assessed lower the risk of losing their jobs in the next three months. Although there might indeed be a link between teleworking, flexibility and job security, the result can also be at least partially explained by the fact that more developed countries with a higher share of teleworkable employment, due to the development of the services sector, generally provide a more secure employment and have benefitted from stronger publicly funded job retention schemes during the pandemic.

Employees' satisfaction with teleworking conditions, EU27 (%)



Source: Eurofound, *Living, working and COVID-19*

Overall, although around 57% of the surveyed employees said that they were satisfied to various degrees with their experiences of working from home, **less than 16% said that if they had the choice (if there were no restrictions due to COVID-19), they would choose to work from home each day.** However, there is no strong opposition to teleworking either. Overall, 32% of employees in the July 2020 survey said they would like to work from home several times a week, while 33% said they would prefer teleworking at least occasionally (several times a month, or less often). Only 22% said they would prefer never to work from home.

3.2. Economic impact of telework

After the pandemic is over, companies might want to maintain the use of telework due to perceived gains in productivity and lower costs. However, there is no conclusive evidence that telework has a positive impact on productivity in all cases.

Companies are tempted to maintain telework due to productivity gains

There is a wide belief that telework reduces costs for companies due to a decrease in workplaces and related expenses (office space, utilities, telecommunications, etc.). Although there is no clear evidence that telework has an overall positive economic impact, many companies implement policies that support full or partial telework arrangements. Some empirical studies suggest a positive impact of telework on productivity⁷, but many economists believe that the available evidence is not sufficient to extrapolate the results to whole industries or economies. Indeed, the available research was performed on small populations in specific sectors and was based on voluntary participation.

In theory, telework can positively contribute to productivity in multiple ways. Due to the reduction of commuting time, it is believed that telework can increase working times. Data from

⁷ The positive impact of telework on productivity was estimated at 22% in a study that covered call centres in China. See Bloom N., Liang J., Roberts J., Ying Z., „Does working from home work? Evidence from a Chinese experiment“, The Quarterly Journal of Economics, 2015

Variable productivity gains

Increased quantity of work

Acceleration of the deployment of digital solutions

Reduction of workspace

Reorientation of savings towards productive capital (training, equipment)

Lower recruitment costs

Higher hourly productivity

Potentially lower wages accepted to access telework

Absence of impact on productivity

Multiple parameters impact productivity:

** conditions of implementation (tools, training of employees and their managers);*

** the organisation of work and type of management (employee autonomy, valuing results more than presence, management's capacity to adapt)*

** specific job characteristics (interdependence with other tasks, autonomy, creativity)*

Loss of productivity

Lack of face to face communication for complex or urgent tasks

Lack of professional interaction hindering knowledge sharing

Negative effects on other workers not teleworking: disorganisation, demotivation

Isolation and procrastination

Imposed teleworking

Stress

France shows that persons working from home declared more frequently that their working time increased during the lockdown.⁸

Some psychological factors would also contribute to the increase in productivity in case of telework: improved working conditions that would allow employees to concentrate and take initiatives in the work they perform, while some workers would deploy more personal 'investment' to compensate their physical absence from the workplace.

In the medium and long term, some economists suggest that telework might lead to a reduction of labour costs for companies, as employees would accept lower wages due to the perceived lower disutility of labour⁹. Indeed, working from home might be convenient and comfortable for many persons, for instance persons living far away from their workplace, or persons with children. In developed countries and in case of highly paid jobs, the opportunity to work from home might indeed motivate workers to accept lower pay. However, in less developed countries and in cases in which wages do not fully cover the needs for a decent living, workers might not be willing to exchange revenue for the possibility to work from home.

Other factors might also allow companies to benefit from telework:

- it is suggested that telework reduces turnover and thus recruitment costs (some economists have shown that turnover is lower in companies that have implemented telework, although it might also be an indirect correlation – companies that use telework are more technically advanced and have generally better remuneration, which contributes to the retention of the workers);
- telework might accelerate the deployment of digital solutions which contribute to an increase in labour productivity;
- the savings resulting from reduced office space could be allocated to productivity, boosting investment, such as training or better equipment.

Certainly, not all aspects related to telework contribute to the increase in productivity. Lack of face-to-face communication might lead to productivity losses, especially in cases of complex tasks. The decreased interaction among workers due to remote work might also curtail coordination between workers and decrease reactivity in case of urgent matters. It could also limit knowledge sharing in the long term. There might also be indirect effects on non-teleworkers, who could lose motivation, resulting in increased rates of absenteeism.¹⁰

The spread of telework can also have a long-term impact on societies. It is believed that since remote work opens more options to employees in terms of location, big cities might become less

8 INSEE, « Confinement : des conséquences économiques inégales selon les ménages », Insee première N° 1822, October 2020

9 A study conducted during a recruitment process in a call centre in USA in 2017 found that an average candidate would accept 10% lower wages to be able to work from home. The effect was more prominent among women, especially women with children. The study also showed that the average candidate would accept up to 30% lower wages in exchange for the ability to completely control their agenda. See Pallais, Amanda and Mas, Alexandre, Valuing Alternative Work Arrangements, 2017.

10 E. Linos, „When working from home changes work at the office: Measuring the impact of teleworking on organizations“, 2019

attractive, while rural areas might see a resurgence in popularity. However, these effects largely depend on available infrastructure in rural areas and the trend is yet to be confirmed in practice.

Another predicted impact is the increase of transnational competition in the labour market, since remote work allows for an easier integration of employees from different countries. This comes with incentives for companies to subcontract certain specific tasks, either to other companies or to platform workers. In this context, the issue of labour contracts, labour taxation and social security might also become a significant challenge for teleworkers. Trade unions are very vigilant regarding all these issues and are therefore fighting for a clear regulation of telework.

At the individual level, the impact of remote work on the quality of life is not obvious. While it seems to offer more autonomy, it also increases the risk of isolation and procrastination. Working from home apparently allows for a better work-life balance, but it can also lead to an overlapping between the two, especially in cases when the right of the workers to disconnect is not respected. Also, in order to ensure that there are clear boundaries between work and private life, the availability of childcare options for workers is of primordial importance, especially in the case of women.

Overall, there is no simple answer to the question whether telework is an economically viable option. Multiple parameters influence the actual outcome – tools, training of employees, the organisation of work, monitoring and performance evaluation. It also depends on the type of organisation and management style. Telework seems to succeed better in organisations that value autonomy and where results are more important than the physical presence of the employees. It also depends on job-specific characteristics, such as the level of expected creativity.

Although the evidence around the impact of telework on labour productivity is not conclusive, some companies have moved forward to implement telework on a wide scale. In France, Renault is discussing the possibility to implement shared office spaces that will be used by employees in partial teleworking arrangements. The company believes that this should allow it to reduce office space and decrease costs. Another French car manufacturer, PSA, launched in May 2020 the project 'New Era of Agility', which aims to normalise telework at 70% of the time in order to decrease the office space footprint. The project is based on the concept of flex office, with more open spaces and fewer individual offices. The target of the company is to reduce the total office space by 30% by 2021/2022 (compared to an objective of 14% before the crisis).

French unions do not perceive the new PSA arrangements without concern. According to a survey conducted by the unions, 56% of 3,372 respondents were opposed to the massive telework project. The sites where telework is already prevalent were the most hostile against its generalisation. Around 60% of the employees said they would prefer between 0 and 3 days of telework at the most. When explaining their concerns, the employees cited in first place the loss of social relations (90%), but also the loss of managerial links (50%) and induced costs (50%). Among the positive (expected) impacts, the employees mentioned the gains in terms of time and costs of commuting, better concentration and a better work-life balance. The motivation and autonomy of the workers were not considered as being significant advantages for the workers. Finally, 58% of the respondents said they feared that their activity would be transferred to a low-cost country, while a similar proportion of workers said they fear that their tasks would be subcontracted. .

3.3. Efforts to regulate telework at national level

With the spread of telework during the pandemic, governments and social partners have realised that telework needs a clear framework in order to ensure that it remains a sound choice for employees, defining workers' rights and responsibilities, limiting irregular hours, providing expense reimbursements and ensuring workers' right to disconnect.

Legal loopholes

Although telework is not a completely new phenomenon, the rapid generalisation of this form of work has quickly exposed the lack of appropriate regulations. The conditions of telework were seldom covered by collective agreements before the pandemic, and national legislations were generally very vague on the subject. In many the cases, the conditions under which telework was organised were improvised or directly and individually negotiated between concerned workers and their employers or supervisors.

The pandemic has exposed the need to regulate telework in order to set up fair rules and protect employees from the unwanted effects of this new form of work. The unions were not always immediately successful in negotiating new conditions for teleworking. For instance, in Poland, unions found it difficult to agree with employers and the government on four aspects:

Allowing workers
to spend 1 day/week
in the office

Employer's
responsibility in terms
of Health and Safety
for teleworkers

Reimbursement of
employee's expenses
if work is performed
from home

Employee's right to
decide the place from
which to work

The issues listed above, although defined by Polish unions, are common for many employee representatives in Europe.

Germany: more than one third of the employees in telework¹¹

During the first months of the COVID-19 pandemic, in spring 2020, according to calculations by the Leibniz Centre for

¹¹ In the light of the 2002 social partner agreement on "telework", the term covers all forms of work in which employees perform parts of their work outside the employer's building or site. However, the legal definition in Germany distinguishes between "telework" (in German: "Telearbeit") in the narrower sense and „mobile work" (in German: "Mobiles Arbeiten"). The term "Telearbeit" is legally normalized in Germany referred to the „Arbeitsstättenverordnung" (§ 2 Abs. 7 ArbStättV). According to this, workplaces for "Telearbeit" are workplaces permanently set up by the employer in the private area of the employee (including furniture, work equipment, communication equipment), for which the employer has specified a weekly working time and the duration of the set-up agreed with the employee. On the contrary, "mobile work" is not defined by law. This form of work is not bound to the office, nor to the workplace at home; the work can be done from any other location. When the term "homeoffice" is used in working practice in Germany, it is not always clear whether "telework" or "mobile work" is meant. Most of the time, "homeoffice" is equated with "mobile work" in common usage.

European Economic Research (ZEW), more than a third of employees in Germany worked at least partially from home. In the summer of 2020, this proportion fell to 28% (Arntz et al. 2020), and 'reboarding' (employees returning to their workplaces) took place in many companies – also for the reason that there are not only benefits related to working from home (such as greater flexibility, higher productivity, concentrated work, driving time savings), but also disadvantages (such as lower productivity for some employees due to frequent interruptions and lack of personal exchange with colleagues, insufficient ergonomics and IT equipment, difficulties in working with managers/executives and in the team, lack of social contacts, excessive working hours or high perceived pressure to perform) (Bellmann and Hübler 2020; DGB Index Good Work 2020; DAK 2020).

According to the Hans Böckler Foundation (2021), only 14% of employees worked mainly or exclusively from home in November 2020, compared to 24% in January 2021. Since 27 January 2021, according to the 'COVID-19 Occupational Health and Safety Provision' ('Corona-Arbeitsschutzverordnung'), companies in Germany have been obliged to offer their employees the freedom to work from home where possible (the regulation is initially limited in time until 30 June 2021). A legal claim to 'mobile work' or working from home does not yet exist in Germany: a corresponding draft law of the Federal Minister of Labour and Social Affairs from October 2020 is currently being discussed.

The German Trade Union Federation (DGB) and individual trade unions welcome the initiative, but they demand that such a law should be extended to include a right of co-determination for works councils with regard to the introduction and implementation of 'mobile work'. With the adoption of the 'Betriebsrätemodernisierungsgesetz' by the German Bundestag in June 2021, a new right of co-determination of works councils regarding the implementation of 'mobile work', performed by means of information and communication technology, was introduced. 'Mobile work' is usually based on company agreements, but only about one third of companies that use or offer 'mobile work' or working from home have such agreements. Occupational health and safety norms must also apply to 'mobile work' to protect employees from blurring boundaries, work overload and health-threatening working conditions (DGB 2020).

After the pandemic, 'mobile work' or working from home for one or more days per week is expected to be a normal part of the working life of broader groups of employees. According to the Institute of German Economy (IW), one third of companies in Germany are willing to provide employees with more opportunities to work from home after the COVID-19 crisis (Stettes/Voigtländer 2021). As stated by the interviewees, a hybrid mixture of working from home and presence at the company would make sense to combine the advantages of flexibility and independence at home with creative personal exchange in the company, which has a beneficial effect on productivity and innovation. This requires good concepts and regulations for cooperation, communication, distance management, digital workflow, flexible working hours, accessibility and health protection, as well as strengthening the employees' ability to manage themselves. Working from home is not only a question of technical implementation, but also of working and management culture.

According to a study by the ifo Institute, at least the technical potential for working from home is largely available. 56% of employees in Germany can work from home, at least temporarily. In the manufacturing sector, the share is 53% (Alipour et al. 2020). As reported by a survey by the Hans

Böckler Foundation (2021), 39% of employees in Germany are potentially able to carry out their professional activities unrestrictedly, or to a large extent at home. However, not all companies have the financial means to invest in digital equipment and digital structures. According to the interviewees, many companies have also suspended or postponed planned investment in equipment in other areas due to the uncertain business development caused by the pandemic.

In the summer of 2020, large companies, such as Siemens, announced that mobile, decentralised work for two or three days a week is considered to be permanent standard in future (Siemens 2020). This could lead to a reduction in office space and potential new savings in office rents. According to IW, currently 6% of companies in Germany are planning a reduction of office space (Stettes/Voigtländer 2021). A survey by PwC (2020) shows that 60% of companies expect an average reduction of 20% in office space over the next three years. Therefore, in many companies, concepts of desk-sharing/flexible office and the use of shared services, which are decentralised and can be accessed virtually, are (again) gaining in importance. As stated by the interviewees, this development mainly affects indirect (e.g. commercial or administrative) activities, facing a new location-independent, global competition and threatened with rationalisation.

Belgium: telework compulsory under a temporary legal framework

During COVID-19, teleworking from home is compulsory in all companies, for all staff members, unless this is impossible *“by the nature of the function, the continuity of the management of the company, its activities or its services”*. There are great disparities between companies and sectors regarding the compensation for teleworkers for heating, electricity and electronic means, that range between €30 and €130 per month. Inter-professional negotiations are underway to better regulate teleworking and the right to disconnect.

Belgian Collective Labour Agreement No. 149

Belgian labour law has historically differentiated between (i) **structural telework**, regulated by Collective Labour Agreement (CLA) No 85, and (ii) **occasional telework**, regulated by the Act on Workable and Agile Work. During the COVID-19 pandemic, a third category of remote work has been added: **COVID-19 telework**, for which a new legal framework has been created. In this respect, on 26 January 2021, the National Labour Council has concluded CLA No. 149, which is a supplementary CLA. Where no other structural or occasional telework arrangements are in place, it has imposed a number of obligations on the company regarding mandatory or recommended remote working due to the COVID-19 pandemic.

For companies with no structural or occasional telework regime in place, CLA No 149 includes a reference framework so that they can make the necessary arrangements to both facilitate COVID-19 related teleworking and safeguard their employees' well-being. According to CLA No 149, employers have an obligation to (i) inform employees and (ii) produce written agreements on certain aspects of mandatory teleworking. These arrangements can be included in a collective bargaining agreement, the work rules, an individual agreement with the employee, or in a policy. In any case, the rules on social dialogue must be respected.

In contrast to the rules regarding structural telework, CLA No 149 does not impose an obligation to contribute to connection or equipment costs. However, if no such reimbursement is paid, the parties must explicitly agree in this regard, so as to avoid an employee claiming an expense allowance afterwards.

CLA No 149 is aimed at employers with no telework policy in place. *As has been argued, if these do not comply with its provisions, they risk (i) claims for contributions to telework costs, (ii) discussions with the occupational accident insurer - in case of an occupational accident - and (iii) a penalty for not complying with a generally binding collective bargaining agreement.*

Spain: a new law since October 2020

One of the main measures implemented by companies during COVID-19 was teleworking for all or part of the workforce, something that was previously residual in Spain (it affected 8.4% of the employed population in 2019). During the first three months of the crisis (first wave), teleworking was mandatory where possible and has been maintained throughout 2020 in some companies. According to Eurofound, teleworking became the working format of approximately 40% - 50% of the workforce in Spain.

Spain's Telework Legislation

The Royal Decree-Law 28/2020 aims to fill the regulatory gap that exists in the area of teleworking: (i) equalising the legal treatment of the most important aspects of this form of work organisation, (ii) resorting as necessary to collective negotiation, which is considered an essential instrument to complete the regulations applicable in each of the specific sectors and (iii) establishing its own criteria.

The Telework Legislation differentiates between remote working, i.e. work that occurs away from company premises on a regular basis, and teleworking, a sub-category of remote working that occurs exclusively or predominantly online. The regular basis of work is defined as 'at least 30% of the working week', the equivalent to approximately two days a week for a period of three months.

Teleworking is part of a voluntary agreement between employer and employee. It is possible to opt out of it at any point. An agreement must be signed between employer and employees outlining details on the new arrangement, such as: an inventory of equipment, list of expenses, required working hours, distribution between remote and on-site working, duration of the agreement and the location of remote and on-site work. Companies may monitor remote workers as long as they respect the dignity of employees. Remote workers have the right to disconnect outside of work hours and to enjoy flexibility within reason. Remote workers are also entitled to equal treatment and opportunities as on-site workers.

The Labour and Social Security Inspectorate (ITSS), according to its regulation, has the capacity to investigate and control the labour, health and safety and social security conditions of these workers without prejudice and with respect to their right to privacy.

Source: European Platform tackling undeclared work

Teleworking is perceived as something desired by a large part of the workers (not all) and positive effects are identified in terms of productivity. However, important risks were identified, in terms of greater workload and/or extension of the working day and psychological pressure.

In response to the COVID-19 outbreak and subsequent lockdown, the Spanish Government introduced the Telework Legislation (Royal Decree Law 28/2020) in October 2020 to support teleworking in Spain. The teleworking law sets a new milestone regarding the role of the State in regulating labour relations, since, although it is a minimum text with quite a few indeterminate concepts, it is considered fundamental by the interviewed trade union representatives. The law forces companies to discuss the issue and negotiate an agreement with trade unions.

France: teleworking has raised new issues, all subjects of negotiation

In France, the legal framework regarding telework is fairly extensive. The section dedicated to telework in the 2017 Quality of Life at Work Agreement defines the duration; the terms of reversibility; the exact days and time slots for working remotely; the methods of controlling working time or regulating the workload; the required training for managers and employees; the eligibility of

The principles of telework (France)

Bipartite volunteering: telework cannot be imposed on the employee or on the employer (apart from exceptional circumstances).

Contract-based: based on a collective agreement, employer charter subject to consultation with the CSE, or agreement concluded between the employee and the employer.

Reversibility: the agreement or the charter must specify the conditions for returning to the previous terms of the employment contract (without telework)

Equal treatment: a teleworker has the same rights as an employee who works on the company's premises.

Coverage of costs: costs related to telework must be borne by the employer; this can be a subject for social dialogue in the company.

Balancing the time spent working remotely and the time spent working at the employer's premises: in order "to guarantee the preservation of social connections" and "prevent organisational difficulties".

The right to disconnect: the employer must control the employee's working hours and consult the employee to establish the time slots during which the employee can be contacted.

The right to disconnect must be the subject of an agreement or a charter. Every year, the employer organises individual meetings with teleworking employees to discuss working conditions and workloads.

Whatever means of controlling the employee's activity and working time are put into place, their use must be "justified" and "proportionate to the sought goal" "and the employee must be informed". Prior consultation with the CSE is necessary.

positions and employees; the coverage of related costs; and the monitoring of the agreement. Moreover, the national interprofessional agreements from 2020 specify the role of employee representative bodies since *“the definition of eligibility criteria can usefully fuel social dialogue”*.

The implementation of telework in cases of *force majeure* must be anticipated within an agreement or, failing that, must be covered by a special charter relating to teleworking. The early identification of teleworkable activities is recommended. Vigilance is required for preventing *“the feeling of isolation that some employees may experience”*.

There are many agreements dedicated to telework or that at least include a telework component: Safran Seats, Alstom Power Conversion, or Airbus Interiors Services. The Alstom Power Conversion Agreement stresses that *“telework should not lead to the employee’s (...) isolation from the collective”*. This takes into account the fact that the development of the human-machine relationship to the detriment of the human-human one carries its own psycho-social risks.

Italy: telework became widespread without proper regulation

The use of telework is spreading in Italy, not only because of the health crisis, but also because of the cost savings it represents for companies (maintenance, office rentals, etc.). It is implemented not only in services, but also in industry: massively for white-collar jobs, but also for blue-collar jobs in tasks directly related to production (for example, remote control, operation or monitoring of machinery). The rapid spread of this type of work carries a series of risks that are of substantial concern to trade unions. The first refers to the **lack of regulation** on teleworking, facilitated by the government, which has allowed the introduction of telework without prior collective bargaining, the only requirement being the individual negotiation between the worker and the company. This situation *de facto* means workers are not protected, as there is no collective minimum common ground.

The high implications of teleworking in terms of working conditions and wellbeing of the workers are also of great concern for Italian trade unions. Unions are worried not only because some necessary skills can lead to the exclusion or marginalisation of certain workers, but also because of the strong implications in terms of the effects of teleworking on socialising between workers and the personal experience of each individual. The current situation leads to isolated workers with different physical and psycho-emotional implications, who must negotiate individually with the company a whole series of elements (tasks, planning, training, salary, bonuses, performance evaluation, etc.). The process has accelerated so drastically that there are many cases where there is a clear lack of regulation, both in terms of working hours and means provided by companies (for example, cases where workers use their personal computers to carry out their professional activity).

Finally, with the widespread introduction of telework, the right to digital disconnection becomes even more fundamental. One of the main objectives of Italian trade union organisations today is to be able to regulate the right to digital disconnection due to the great implications and risks posed by not regulating the working day (although it can be flexible).

Czechia: telework spreads amid legal loopholes

Although there are no statistics available, OS KOVO reports that telework has developed a lot in the country. Employees or 'white collar' workers have been able to benefit from digital networks and a sufficient level of equipment to carry out their work remotely. According to various sources and surveys consulted by OS KOVO, the productivity of telework is higher than usual in workplaces. Initially, telework also seemed to give satisfaction to workers because it helped to rebalance family and personal life, provided that the education system operated in parallel. However, there might also be negative effects: equipment, such as work furniture, is sometimes insufficient, and some people complain about isolation and unhappiness. In this respect, trade unions are interested in introducing specific regulations and compensation for teleworkers in company-level CLAs.

Current legislation on telework in selected EU countries (April 2021)

Legislation to record and monitor working time of remote workers

Country	Binding legislation on telework	Regulatory instruments for telework & work-life balance	Types of legislation*	Coverage of regulations	Legal right to disconnect	Legislation to record and monitor working time of remote workers
Spain	yes	legislation and regional, sectoral and company-level agreements	promote & protect	very high	yes	yes
France	yes	legislation and national, regional, sectoral, company-level agreements	promote & protect	very high	yes	no
Italy	yes	legislation and sectoral and company-level agreements	promote & protect	high	yes	no
Netherlands	yes	sectoral and company-level agreements	general	medium	no	no
Belgium	yes	legislation and national regional, sectoral, company-level agreements	promote & protect	very high	yes	no
Germany	yes	sectoral and company-level agreements	promote	medium	no	no
Sweden	no	sectoral and company-level agreements	no legislation	medium	no	no
Finland	no	sectoral and company-level agreements	no legislation	medium	no	no
Poland	yes	sectoral and company-level agreements	promote	medium	no	no
Romania	yes	company-level agreements	promote	low	no	yes
Czechia	yes	sectoral and company-level agreements	general	low	no	no
Slovakia	yes	company-level agreements	general	low	no	no
Austria	yes	sectoral and company-level agreements	general	medium	no	yes

Source: Syndex, Eurofound

* types of legislation: general legislation; promoting TW to improve work-life balance; protecting against negative effects

3.4. Telework – my right, my decision (an *industriAll Europe* campaign)

In November 2020, *industriAll Europe* adopted the Position Paper 'A telework option that works for all', and in 2021, it launched the Campaign 'Telework: my right, my decision'. According to *industriAll Europe*, *"Teleworkers must be able to enjoy the same rights as all other workers, including the right to join a union, collective bargaining and training. By using innovative means of communication, unions can reach teleworkers and show that collective action is the best way to address their concerns."*

"A telework option that works for all" ***industriAll Europe* Position Paper 2020/117** **Excerpts**

The COVID-19 pandemic is a tipping point for technology dissemination and for the digital transformation of our working environment. In the industry, the pace of digital transformation has accelerated as the new situation called for the introduction and the use of new technologies, with automation being one way of keeping social distance. Advanced remote monitoring and advanced collaborative tools which were not on the top of the list before COVID-19 became a priority for many companies. This will lead to the emergence of a new business model across the entire value chain and result in high productivity gains. This will also have massive repercussions on work organisation, working conditions, and eventually on employment itself.

IndustriAll Europe recognises the urgency to react to the sudden developments on telework. We present an initial trade union position on this topic with a few key demands to ensure that telework is an option (and not an imposition) that works for all. This position paper has been triggered by the COVID-19 crisis and its push towards telework, but it does not only refer to telework during COVID-19 times. By now, it has become clear that telework is here to stay. Therefore, this paper represents a first *industriAll Europe* position on the issue of telework in general.

Telework needs to be regulated in order to become an advantage for workers and to not only be a cost reduction strategy of business (or eventually lead to unnecessary outsourcing of work, but ensure that work is performed by employees of the company). Telework does not suit all workers, and it is key to ensure that also newly hired workers get the opportunity to be present at the employers' premises. Employers must be fully aware of the positive impact that social interactions at the workplace have on common projects and innovation, as well as on workers' physical and psychological health. Trade unions need to be involved in the regulation of telework in order to establish clear redlines on working time (limit overtime, ensure full pay of all the hours worked), health and safety (ergonomic issues, stress increase, professional isolation), and privacy (the right to disconnect, limit surveillance, limit the collection of workers' data, data storage and data access).



Telework: my right, my decision

Telework – a worker’s enemy?

Threats of unregulated telework

- ✘ **Permanent & imposed telework**, motivated by employers’ attempts to save costs at the expense of workers’ wellbeing.
- ✘ **Working Time**: Overtime which is not recorded and therefore unpaid needs to be controlled and properly regulated.
- ✘ **Health & Safety**: Musculoskeletal complaints from non-ergonomic working conditions, long & irregular working hours, work-life imbalance, psychological strains due to lack of social interaction, and feelings of isolation.
- ✘ **Surveillance & Privacy**: Increased use of invasive technologies which give employers unlimited possibilities to remotely monitor and control workers way beyond what is justified.
- ✘ An **extra burden or a push to stay at home for women workers** who often bear the brunt of household chores, having to juggle between work, household and care responsibilities.
- ✘ Telework is **not a substitute for leave**, such as maternity, parental, sick, or care leave.
- ✘ A **threat to the collective community of workers** united through their workplaces and trade unions.

Telework – a worker’s friend?

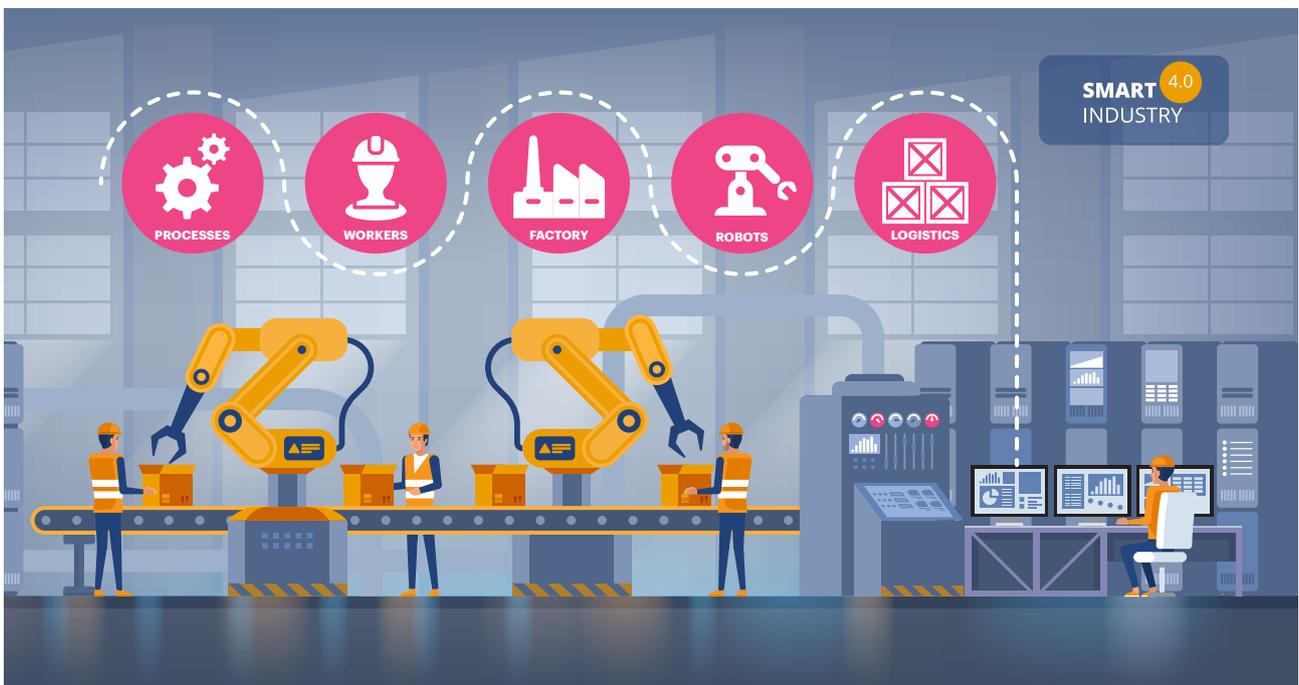
Advantages of regulated telework

- ✔ **Voluntary Principle**: Workers should have the right to choose to telework and to revert to the office.
- ✔ **Happier workers**: Telework can lead to higher productivity, reduced absenteeism and greater job satisfaction provided it is not permanent and if presence at the workplace is still possible some days a week.
- ✔ **A better work-life balance**: More flexibility and autonomy can benefit workers, provided it does not result in unpaid overtime, pressure to be flexible and always available, and huge psychological strains.
- ✔ **Employers shoulder their responsibility**: They ensure equipment, pay workers’ health and social insurance, provide extra allowance for workers’ costs of teleworking (utilities, etc.), training, etc.
- ✔ If **workers’ rights to form and join a union, as well as to collective bargaining** are guaranteed.
- ✔ **Trade union representatives are involved in establishing telework regulatory frameworks** and provided with the necessary facilities and digital tools to defend workers on an equal footing with employers.

4

Social dialogue on the digital transformation

- 4.1. Overview of the social dialogue on digitalisation (survey)
- 4.2. Trade union strategies and actions at national level
- 4.3. Steps forward at the European level



4.1. Overview of the social dialogue on digitalisation

The survey conducted in 2019 by industriAll Europe and Syndex revealed that the impact of digitalisation on workers and working conditions is not sufficiently addressed in the social dialogue at company level. Efforts are made by trade unions to promote regulatory frameworks at sectoral and national level.

Room for improvement

The survey conducted by industriAll Europe and Syndex in 2019 has shown the degree to which the subject of digitalisation is addressed in the dialogue between trade unions and companies or employers' organisations. There is much room for improvement. While the majority of participating unions believe that companies make assessments regarding the productivity induced by digitalisation (in 75% of the cases), as well as the impacts on costs (74%) and quality (73%), only one third of the unions believe that companies consider digitalisation as a means to reduce the arduousness of jobs (33%). It is of course not surprising that the companies are more preoccupied by the economic rather than social dimension of digital investments.

Digitalisation is becoming an important issue in the social dialogue at European level, including at the sectoral (Joint Declaration in the metal sector, Social Partners' Framework of Actions in the electricity sector, etc.) and cross-sectoral (Framework Agreement on Digitalisation) levels. However, there are still significant differences when it comes to the national level. The subject of digitalisation is slightly more frequent in the dialogue between unions and companies in Northwestern Europe (59%) compared to Southwestern Europe (37%) and Central and Eastern Europe (36%).

In cases when information on digital investments is provided to unions, this information mainly covers the aspects related to the modification of working conditions (40%), the impact on

Subjects addressed in social dialogue (% of positive answers by region, weighted average, survey of trade unions, 2019)

Does management or the employers' organisation present the following information to trade unions and works councils...	on health and safety	on economic and financial issues	on technical investments	on social issues	on vocational training investments	on learning	on industrial matters	on strategy	on digitalization
Northwestern Europe (DE, NL, BE, SW, FI)	95%	78%	79%	61%	60%	74%	45%	48%	59%
Southwestern Europe (FR, ES, IT)	91%	81%	71%	83%	78%	67%	66%	62%	37%
Central and Eastern Europe (PL, CZ, RO)	72%	53%	49%	59%	52%	44%	51%	43%	36%

Information on digital investments (% of positive answers by region, weighted average, survey of trade unions, 2019)

Are digital investments subject to a specific information process in terms of...	modification of the working conditions	impact on employment	the necessary related training	economic calculation	modification to the cost structure	the financing arrangements
Northwestern Europe (DE, NL, BE, SW, FI)	39%	41%	23%	34%	33%	18%
Southwestern Europe (FR, ES, IT)	44%	32%	33%	21%	16%	23%
Central and Eastern Europe (PL, CZ, RO)	38%	41%	41%	21%	21%	20%
Total Europe (11)	40%	37%	31%	26%	24%	20%

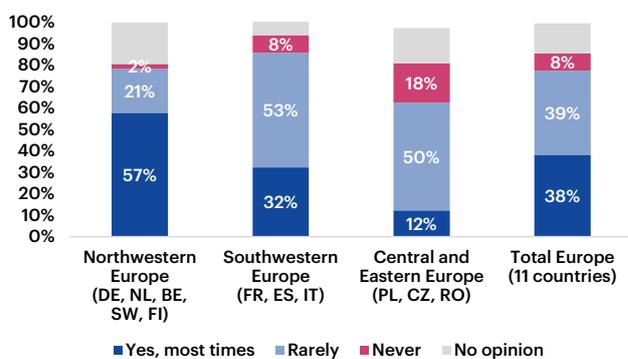
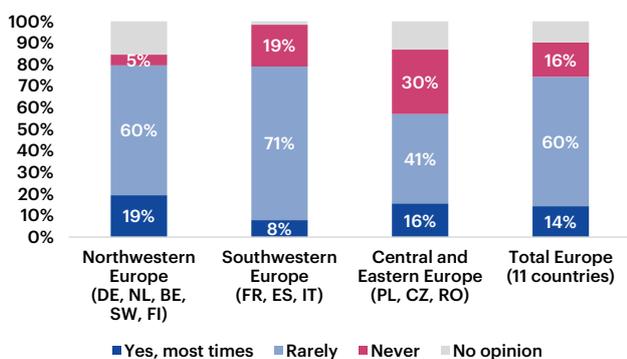
employment (37%) and to a lesser extent, the necessary related training (31%). Aspects such as the economic calculations, modification of the cost structure or the financing arrangements are rarely communicated by management to trade unions. **There is a clear deficit of dialogue on the social implications of digital investments and dialogue on the economic implications is even more scarce.**

Companies or employers' organisations rarely provide information regarding the cost and gains of digital modernisation. The situation is only slightly better in Western Europe compared to Central and Eastern Europe. The discrepancies among regions are more apparent when it comes to trade union awareness of the R&D digital investments made by the companies: in Northwestern countries, trade unions follow the developments much more closely compared to their peers in Southwestern or Central and Eastern Europe.

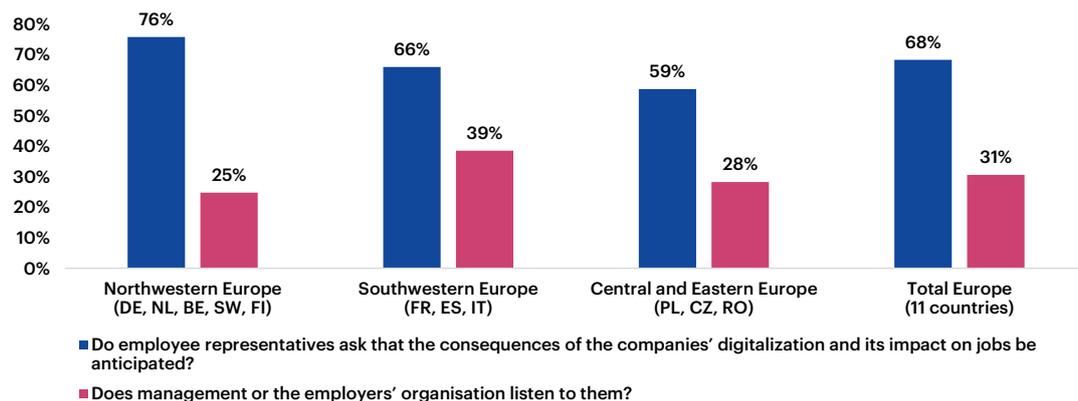
The deficit of social dialogue is particularly visible when speaking about the consequences of digitalisation and its impact on jobs. While in 68% of the cases employee representatives ask for these consequences to be anticipated by the companies, in only 31% of the cases do the management or employers' organisations actually listen to them. The problem seems to be more or less the same in all the regions. The differences are evident when taking into account actual negotiations on the consequences of digital investments: the situation in Northwestern Europe is clearly better compared to the other two regions.

Does the company or the employers' organisation provide information regularly regarding the cost and gains from digital modernisation?

Are trade union or employee representatives aware of the R&D digital investments?

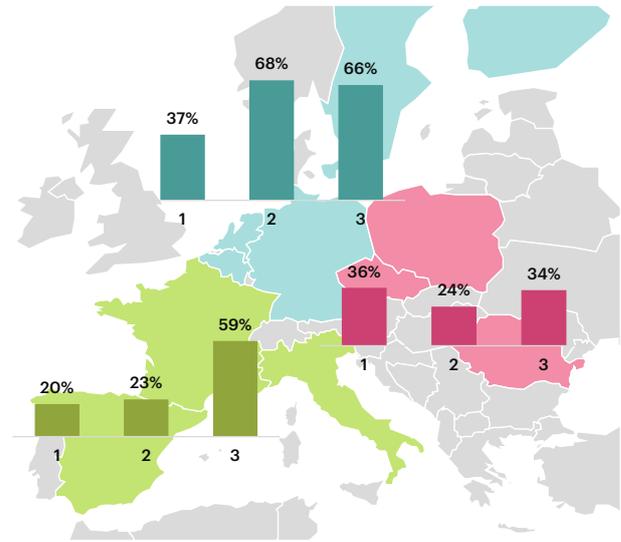


Social dialogue on the consequences of digitalisation (% of answers "Yes, most times" by region, weighted average, survey of trade unions, 2019)



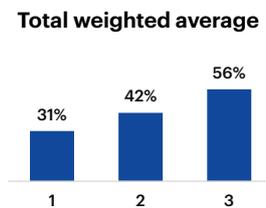
The situation is not bright at company level, but neither at sectoral nor national level. In most of the cases, if social consequences are formally addressed, this happens mainly at the level of company agreements (56%), less frequently in sectoral collective agreements (42%) and rarely in the labour legislation (31%). Here again, we notice significant regional discrepancies: in Northwestern Europe, the issues are formally addressed in two-thirds of the cases in sectoral collective agreements and company agreements, in Southwestern Europe, company agreements are dealing with these issues in more than half of the cases, while in Central and Eastern Europe, there is a clear deficit at all levels (less than 36%).

At what level are the social effects of the digital transformation addressed?



Has the digital transformation been taken into account in the last 5 years...

1. ...in the labour legislation
2. ...in collective agreements
3. ...in company agreements

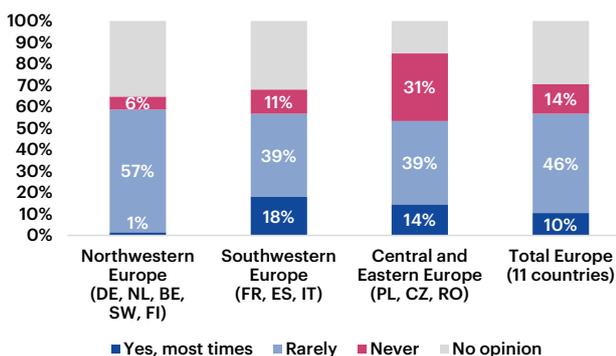


The lack of continuous social dialogue on issues related to digitalisation

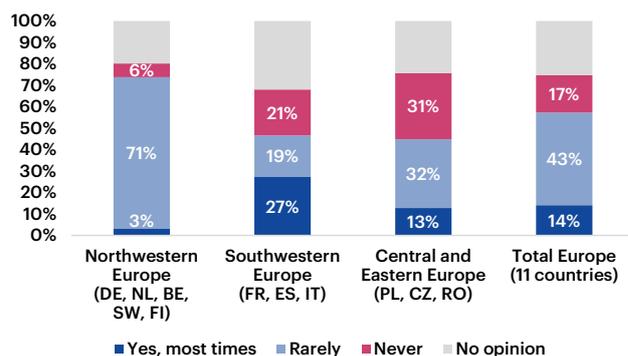
marginalises trade unions when it comes to public funding on technological modernisation. In fact, in only 10% of the cases were unions informed about the relationship between companies and public authorities with respect to digitalisation-related investments, and in only 14% of the cases were unions informed about calls for public funding.

Formal information and consultation procedures within works councils and/or trade unions rarely address issues related to digitalisation. A company's decision to invest regularly results in a consultation and negotiation process in less than one quarter of the situations. For 45% of the unions surveyed, it happens "rarely", and for 21%, "never".

Are trade unions informed of the relationship with public authorities with respect to digitalisation-related investments?



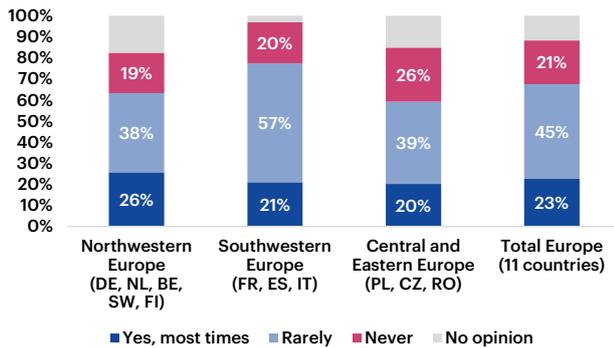
Are trade unions informed of the relationship with public authorities with respect to calls for public funding?



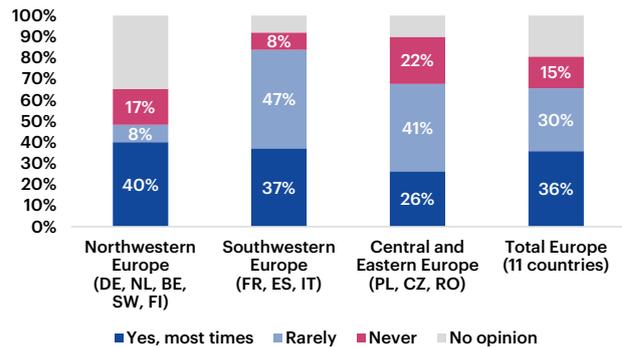
For most of the trade unions, when information and consultation procedures take place, the conditions, means and procedures are not allowing them to have sufficient access to the necessary information. For less than one third of the unions, the amount of time given to analyse the information received and, if necessary, to ask for additional information is insufficient and does not allow them to give an informed opinion on the matter at hand. The situation is slightly better in Southwestern Europe compared to the other two regions.

There are also significant disparities among regions with regard to access to a technical expert to interpret the investment information: the unions have this possibility “most times” in 44% of the cases in Southwestern Europe and in only 18% of the cases in Central and Eastern Europe. In Western regions, only 4-5% of the unions “never” have the possibility to use the assistance of a technical expert, while in Central and Eastern Europe, 33% of the respondents said they do not have such an option.

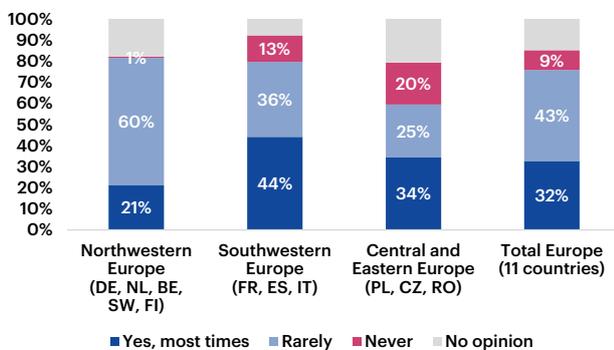
Does the decision to invest result in a consultation and negotiation process?



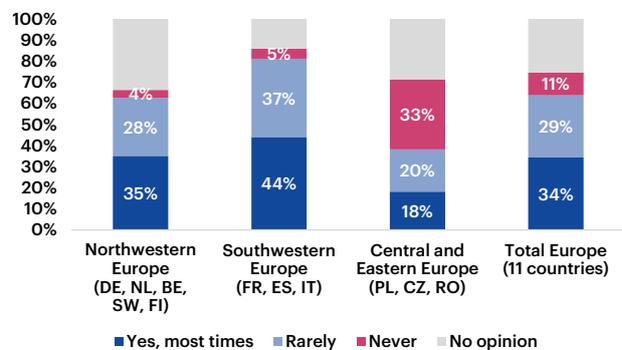
Do the conditions, means and procedures of the consultation and negotiation process allow you to have access to the necessary information?



Is sufficient time given to analyse the information received, to ask for additional information, if necessary, and give an informed opinion on the matter at hand?



Is it possible to use a technical expert to interpret the investment information?



4.2. Trade union strategies and actions

This section presents several examples of how matters related to digitalisation are covered in the social dialogue at national level. While in some countries, social partners have developed complex national frameworks of information and consultation on issues related to digitalisation, in other countries, especially in Central and Eastern Europe, trade unions acknowledge the need for common rules at European level in order to empower the national dialogue.

Germany: high priority for the unions

Shaping digitalisation is of a high priority to IG Metall. Membership strength and resources allow for corresponding initiatives (campaigns, research projects, collective bargaining, etc.). IG Metall is an important player in the political/scientific discourse, and its commitment is to proactively introduce labour policy issues into a rather technically driven development.

According to IG Metall, the relevance of digitalisation as a field of action for co-determination will continue to grow. Employees and works councils are likely to be confronted with digitalisation even more in the future – along with changes in workload and new skills needs and dealing with monitoring and surveillance systems. Worker representatives should try to ensure that digitalisation is understood as a contribution to securing the future of employment and creating ‘good work’. Efficiency gains from digitalisation should be used to safeguard jobs and to improve working conditions (Gerst 2020).

As stated by the interviewees, a particular task of worker representatives in the course of the COVID-19 crisis is to **ensure that digitalisation is not used by employers as a pretext to question or weaken achieved working standards** (e.g. in terms of working time and occupational health and safety) and procedures and principles of co-determination. One argument often put forward by employers is that institutionalised co-determination hinders or slows down necessary digitalisation processes in companies. Therefore, from the employer’s point of view, co-determination should be restricted and replaced by faster decision-making processes. This must be countered by active co-determination and collective bargaining policies.

The interviewees also reported that some companies want to speed up the introduction of surveillance systems due to COVID-19, on the pretext that this serves to protect health and safety at work (e.g. to better control the contact restrictions) or to protect the company’s IT infrastructure when working from home. Trade unions are therefore demanding that works councils’ right of co-determination should not only apply to the introduction and implementation of technical equipment designed to monitor employees’ behaviour or performance, but also to the forms of use of the data collected.

France: favourable legislative framework for consultations concerning digitalisation

Social dialogue in France has been the subject of a structured legislative framework since the Auroux laws of 1982. These laws extended the economic role of the works council, allowing it to monitor the economic progress of the company, in order to grant “a collective voice to the employees and ensure the taking into account of their interests within the decision-making process related to the economic and financial development of the company, the organisation of work and production technology”.

This framework has evolved over the past five years, becoming more simplified and allowing for adaptation for each particular company. Consultations were grouped together (Rebsamen Law, 2016) and are now subject to negotiation, in particular for establishing their frequency, the information shared, or the notification deadlines (Macron ordinances, 2017).

Today, social dialogue involves recurring consultations and ad hoc consultations, some of which provide opportunities to discuss digitalisation and its consequences on employment, skills, work organisation and working conditions.

Consultation on social policy (Article L2312-26 of the Labour Code)

Recurring consultation useful for observing the effects of digital transformations on employment, skills, working conditions and work organisation, and for evaluating the social policy that accompanies these transformations, in terms of employment, training, qualifications, mobility, prevention.

Consultation on strategic directions (Article L2312-24 of the Labour Code)

Recurring consultation useful for anticipating the effects of digital transformations on jobs, professions and skills, work organisation, use of subcontracting or temporary work, and to anticipate a social policy, particularly in terms of planning of jobs and skills

Consultations on the introduction of new technologies (Article L2312-8)

A one-off consultation, which aims to anticipate the effects of new technologies on employment, qualifications, training, working conditions. The importance of the project is assessed with regard to the number of employees affected and the concrete impact on working conditions (Cass. Soc. 10-2-2010 n° 08-15.086): significant transformation of workstations such as “a change in production tools, a change in products or services, a change in the organisation of work, a change in work rates or productivity criteria.

Spain: traditional deficit of dialogue on digitalisation, reinvigorated during the COVID crisis

The digital transformation was not historically taken into account in labour legislation, collective agreements and company agreements. *“Collective bargaining in Spain does not address digitalisation. There are practically no [collective] agreements”*, said Pedro Ayllon, Head of the USO Industry Federation, before the advent of the health crisis.

Companies (or employers’ organisations) are not used to presenting information on digitalisation to works councils and rarely communicate about the costs and benefits of digital modernisation. Business investments are rarely negotiated, as are the consequences of digital investments. There is very little information about economic calculations and the financing methods of digital investments. The main motivations for companies to make digital investments are productivity, cost reduction and quality.

Employee representatives are more or less proactive in requesting information on the impacts of digitalisation, but management (or employers’ organisations) rarely responds. No monitoring of the effects of digitalisation on work is carried out by employees and/or the works councils.

The number of agreements and conventions incorporating the effects of digitalisation was very limited before the COVID crisis (less than 15% of agreements, according to Cuatrecasas). Most of these related to the regulation of telework. The first effects of telework are difficult to assess, but Ana Maria Navamuel, trade union delegate of CCOO of Schneider Electric España, emphasises that in the collective imagination of the employees *“telework is a favour granted to you by the company, and you as an employee feel obliged to perform better and you end up working even harder”*.

Some agreements try to regulate the right to disconnect in a concrete way. The collective agreement for the Chemical industry (2018-2020) is the only agreement that explicitly addresses the right to information and consultation in cases of the introduction of new technologies. Pioneering company agreements, such as the SEAT agreement (2016-2020), guarantees Industry 4.0 training and consultation on changes in work organisation (also the agreement signed at Iberdrola). Renault Spain’s agreement provides for the creation of a Commission for new technologies.

Tripartite social dialogue is also very weak, which can be explained by the 2012 labour law which introduced a unilateral governance model for industrial relations, as well as the government’s initiative to make consultation open to the general public instead of promoting tripartite social dialogue.

In spite of little progress in terms of dialogue with companies on the issues related to digitalisation, **the Spanish trade union organisations feel concerned by this theme and are quite active in terms of analysing the subject through theoretical studies as well as practical actions.** For several years, they have been organising meetings between companies, trade unionists and technical experts to face the challenges of digitalisation and Industry 4.0, through the creation of working groups.

Three main challenges emerge from these meetings: the great diversity and sectoral disparity of digitalisation, the atomisation of the structure of companies, and the significant lack of digital qualifications for employment. Trade unions consider that the training arrangements do not keep

pace with the country's technological change. There is therefore a **need to create a public entity that coordinates the strategies of the different public actors involved in the process.**

The main proposals of the Spanish trade unions are as follows: to stimulate reindustrialisation by encouraging productive investment, digitalisation and innovation; to adapt social dialogue and collective bargaining to the new realities of work and production, taking care to avoid precarious work and to accompany legislative changes, as well as to develop employee participation and collaboration between actors to face the new realities; social policies are also important to leave no one by the wayside (company or worker) and technology must contribute to the financing of these services; need for new professional profiles whose central skills are communication, problem solving, technical knowledge and creativity (continuing and vocational training is fundamental to avoid social discrepancies in terms of training); and lastly, an active role for the state. The state must have a central role in guiding, coordinating, regulating and ultimately ensuring cohesion.

The trade unions find it very important that digitalisation should happen with their participation, so that the phenomenon is inclusive and avoids the risk of segmentation and social exclusion. For this, it is necessary to strengthen the role of industrial relations, to adapt traditional patterns of trade union action to the new realities and to encourage, through tripartite social dialogue, normative frameworks that favour progress and reduce gaps (gender, territory, etc.). In this respect, the UGT proposes **the reduction of the working day and the taxation of robots.**

Joint initiatives between trade unions and business associations also exist, such as the manifesto signed by CCOO Industry and UGT with the ICT business association (AMETIC), to strengthen the leadership of the Spanish digital transformation through the development of talent with concrete training proposals to develop digital talents.

One of the reasons for the slow progress in the social dialogue is the weakness of the tripartite dialogue during the last few years. The root of the problem is the 2012 labour law, which introduced a unilateral governance model for industrial relations, as well as the government's initiative to make consultations open to the general public instead of promoting tripartite social dialogue.

Although the 2012 law is still in force, since the change of government at the beginning of 2020, we are witnessing a remarkable progress in the recovery of labour rights and labour conditions (substantial rise in the interprofessional minimum wage, among others), as well as an advance in social dialogue. The pressure from social actors has undeniably contributed to this improvement.

Indeed, the management of the health crisis in the labour sphere has been based on the reactivation of the tripartite social dialogue, the adoption of measures by consensus between all actors (state, trade unions and employers) and the convening of social dialogue commissions. **This is an opportunity to reactivate and reinforce greater social dialogue on a lasting basis, although the challenge is also to see how to maintain this dialogue without the urgency of a crisis.**

The COVID crisis has also accelerated the social dialogue on issues related to digitalisation and Industry 4.0. The importance of these issues has led the government to adopt one of the most ambitious laws regulating telework and digital disconnection in Europe.

Italy: trade union co-operation aimed at strengthening employee participation and promoting value sharing of productivity

To a large extent, company agreements provide for the right to preventive information, in particular related to technological changes with effects on employment and qualifications. These agreements are frequent and not only in large companies. The right to disconnect is recognised in several company agreements. Agreements related to training in Industry 4.0 are increasingly present, as well as agreements which provide for the sharing of productivity gains through the reduction of employee working hours, such as that of Lamborghini.

At the sectoral level, collective agreements are less developed, although some progress has been made, for instance in the metallurgical sector (agreement on sharing productivity gains) or the electricity sector (agreement providing a mobility mechanism instead of layoffs during restructuring, a solidarity mechanism between companies to safeguard jobs, additional access to training, norms for the privacy of the workers).

According to Ilvo Sorrentino, General Secretary of FP-CGIL, the key to negotiating new, ambitious agreements are the power and unity of the trade union movement, a good relationship with companies, a culture of social dialogue and a good level of skills of trade union leaders (technical knowledge of the sector and negotiation capacity).

Trade unions are very dynamic with regard to the subject of digitalisation, both internally and externally, and inter-union collaborations and collaboration with employers' organisations are frequent. The main principles are **the need for employee participation** and **sharing of the value created**.

Internally, trade unions have set up training courses, working groups, observatories and collaborative platforms, such as 'Idea-diffusa' (CGIL), 'Net-workers' (UIL) and projects with companies, such as that of CISL, 'Laboratorio Industria 4.0'.

In 2016, a protocol between CGIL, CISL and UIL was signed with the objective of strengthening employee participation in all possible forms (organisational, financial, governance, etc.). In 2018, CGIL, CISL, UIL and Confindustria signed the '**Factory Pact**', a collective bargaining pact to set up industrial relations that encourage the Industry 4.0 transformation by increasing the competitiveness of companies, a more dynamic work market and a closer **link between productivity and wages**. Also in 2018, CGIL, CISL, UIL, Confapi (the Italian Confederation of Small and Medium Private Industries) and Confimi (the Confederation of Italian Manufacturing Industry and Private Enterprise) signed the '**Training Industry 4.0**' plan for skills development techniques in SMEs.

Finland: decentralised dialogue

Generally speaking, Finnish trade unions are continuously adapting to the digital transformation, both through their internal organisation (having dedicated units that deal with these issues), the services they offer to their members (i.e. providing specialised trainings) and the use of modern digital means in their daily work. However, there seems to be a need for more advancement in terms of dialogue with other social partners on the impacts of digitalisation on workers in Finland.

Although Finnish trade unions have taken the issue of digitalisation seriously and have established special units dedicated to assessing and mitigating its impacts, most of the interviewed union representatives stated that the level of social dialogue with their counterparts on this matter is not optimal. The interviewed unions consider that there is a higher level of decentralisation of the dialogue on these matters compared to other issues (wages, working times, working conditions etc.): the majority of our respondents found that the digital transformation is not taken into account in the labour legislation and in collective agreements at central level and that the topic is addressed only at company level.

Usually, the information presented by the management to the trade unions and works councils covers the following topics: health and safety, social issues, strategy and technical investments. Less frequently, the information covers the related need for vocational training. Also, information is rarely given before investment decisions are taken by the companies, and is rarely subject to a specific information process in terms of profitability, economic calculation, modification to the cost structure, modification to the working conditions, the impact on employment or the financing agreements.

Main principles of the paper 'Digitalising Finland is an opportunity'

Within the joint paper, the labour market organisations agreed on four main principles related to the utilisation of artificial intelligence and digitalisation:

- 1** **Digitalisation and artificial intelligence era skills must be ensured.** *New competencies must be built on sound basic abilities (literacy, mathematical and critical thinking).*
- 2** **Support for workplaces in the introduction of new technologies and new ways of doing things must be provided through public investment in research, development and innovation.** *Public organisations must set themselves ambitious targets for the share of innovative procurement in their procurements (10%).*
- 3** **Coherent and fair rules of play, compliance with laws and agreements.** *Abuse of market position must be challenged through smart regulation and competition policy enforcement. When introducing new technology and digital services that enable the mobility and use of data, particular attention must be given to ensuring information security.*
- 4** **Working together towards an interoperable Finland,** *where interfaces enabling cooperation between the various public and private actors are ensured already at the project specification and design stage. Joint, open projects and open interfaces will ensure even better functioning services from the citizen and business perspective.*

The joint paper is a significant step forward in developing a social dialogue on the issues related to digitalisation and boosts the role of trade unions in policy making in this regard, but it cannot replace specific measures and guarantees that can be provided by collective agreements, at national, sectoral or company level.

Besides the deficit of an in-depth dialogue on the issues related to digitalisation at the national and sectoral level, some analysts have noticed that digitalisation has contributed to the decentralisation of industrial relations. According to a European Economic and Social Committee study in 2017, in Finland *“digitalisation appears to have diluted the hierarchy, pushing negotiations from the collective to the firm level”*.

Although the issues related to digitalisation are not directly addressed in sectoral collective agreements, there has recently been a significant step forward in establishing a national framework in this regard. In January 2019, Finnish trade unions and other labour market organisations signed a paper of joint principles on digitalisation and artificial intelligence. The paper is entitled **‘Digitalising Finland is an opportunity: a big leap forward in employee wellbeing and in labour productivity’** and it states that the utilisation of artificial intelligence and digitalisation will enable significant improvements in productivity, public services and in everyday life at workplace, while the ultimate goal is a high-quality working life, characterised by employee wellbeing and high labour productivity.

Poland: expectations that norms are set at European level

In most Polish trade union organisations, digitalisation does not yet emerge as a structuring axis of their strategy, including since the start of the COVID-19 crisis. However, Solidarność has taken some strategic actions, entering discussions with the government and the representatives of the employers on the evolution of work on platforms where digitalisation has a considerable impact on working conditions. The main concerns emerged from the retail trade and large distribution centres (such as Amazon), because of large-scale automation and robotisation plans, sometimes resulting in work rhythms totally unsuitable for employees. In the industry, social distancing rules, the wearing of masks and the very strict health protocols in place in factories have had a major impact on the organisation and working conditions (arduousness). This finding is particularly significant in the automobile factories and in those of their suppliers.

The structure of social dialogue in Poland is not conducive to the development of a concerted strategy around digitalisation mainly due to the lack of sectoral and national dialogue. However, the European Agreement on Digitalisation signed by the social partners in June 2020 is seen by Solidarność as a lever for structuring union action for the post-COVID period. Once translated into Polish, this text should in principle be the subject of a debate within the National Council for Social Dialogue, bringing together the Polish Government, trade unions and employers. In general, **the development of branch agreements on digitalisation at European level is seen as a way to more effectively develop common trade union positions** and specific action plans at national level on the issue of digitalisation.

While employee information and consultation is far from being the rule when it comes to the digitalisation processes of industrial companies in Poland, there are, however, some good practices, which are often “imported”. This is particularly the case at Volkswagen, where the pandemic has not prevented the negotiation of agreements on maintaining employment in the context of technological change (electrification) and the automation of production processes in the automotive sector. Similar practices have been identified in other companies (Toyota in particular) but in general these unfortunately still remain very marginal in Polish industry.

4.3. Steps forward at the European level

National efforts by trade unions to ensure a just digital transition must be complemented and supported by European-level action. Given the continued increase in economic integration among EU member states, digitalisation cannot be regarded as a strictly national issue by either governments, companies or employee representatives. EU-level measures, such as the Recovery and Resilience Facility, only makes this reality more obvious. Recently, European trade unions have made significant progress in setting up a common European framework for addressing digitalisation in the social dialogue.

Concerted efforts at a European level to promote a just digital transition

European trade union organisations have been making visible progress in addressing the need for a just digital transition across the EU. IndustriAll Europe has recently highlighted the considerable risks involved for European industry and its employees as economic activity becomes increasingly green and digital.¹²

First, the risk of a highly uneven transition is already apparent, with Central and Eastern Europe lagging behind due to a lack of investment incentives for companies (directly related to comparatively low labour costs) and of concrete action on the side of governments. “Virtuous circles in the core regions, and vicious circles in the periphery” risk deepening already high levels of geographically uneven development across Europe; industrialised regions in Central and Eastern Europe are particularly at risk of remaining behind.

Second, the green and digital transition necessarily involves the disappearance of some jobs and the creation of others. The question is not just one of employment levels, but of the quality of these newer jobs, which has to at least correspond to the ones being phased out.

Third, even if digitalisation is supposed to play a major role in the national recovery and resilience plans, most countries do not appear to be interested in focusing their efforts toward industrial transformation, even if European industry is likely to be hugely impacted by increasingly stringent environmental and competitive pressures.

Fourth, ensuring a Just Transition cannot be achieved without the contribution of trade unions when it comes to “political intervention (...), collective bargaining and organising”.

According to industriAll Europe, a number of instruments should be employed to properly address these issues: reinforcing social dialogue at all levels, including mandatory trade union involvement for accessing European funding and in devising sectoral, national and European industrial strategies; elaborating and implementing adequate investment plans; proper active

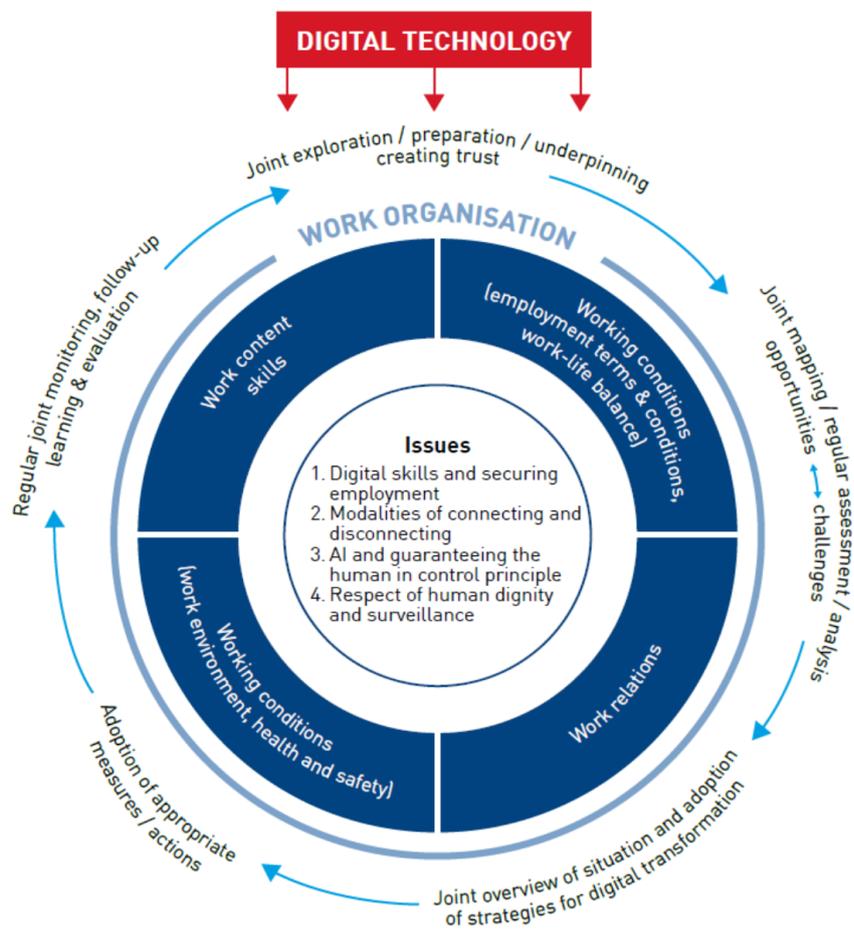
¹² IndustriAll Europe, “Leaving no region and no worker behind: addressing the challenges of decarbonisation and modernisation in Central and Eastern Europe’s heavy industries”, Position Paper 2021/127, April 2021.

labour market policies, addressing the need for training and reskilling; improved social safety nets for those at risk of losing their jobs. East-West wage convergence remains a key instrument in ensuring that the benefits of technological change are adequately distributed across the EU.

To be sure, digitalisation is a challenge, not just for workers in Central and Eastern Europe, but for all workers across the EU. The pandemic has made this even more obvious, especially with the increased incidence of remote forms of work addressed previously in this study. At a European level, industriAll Europe launched a campaign to raise awareness of the “advantages and the dangers of imposed telework for workers”.¹³ As such, telework might be undesirable if it is forced upon employees, if it involves excessive and unpaid hours, endangers workers’ health and privacy, deepens gender inequality, eschews basic rights (maternity, parental or other forms of leave), or if it threatens workers’ capability to act collectively. Combating these risks requires regulation in order to ensure that post-pandemic telework remains voluntary and flexible, that it allows for increased workers’ autonomy without the pressure of undesired overtime, that employers bear their share of necessary costs (equipment, utilities, training, etc.), and that workers’ organising and trade union prerogatives are guaranteed.

Among the concrete moves undertaken by European trade union organisations is the **Framework Agreement** signed in June 2020 by European cross-sectoral social partners (including the ETUC), which directly addresses the issue of digitalisation. With this Agreement, both employee and employer representatives acknowledge that the gains of digitalisation “are not automatic” and that there is a clear “need to adapt our labour markets, education and training, and social protection systems to make sure the transition is mutually beneficial for employers and workers”. The aims of the Agreement are to raise awareness of the opportunities and challenges brought about by digitalisation; to “provide an action-oriented framework to encourage, guide and assist employers, workers and their representatives in devising

DIGITALISATION PARTNERSHIP PROCESS



¹³ IndustriAll Europe, ‘Telework: my right, my decision. A campaign by industriAll Europe that sheds light on the advantages and the dangers of imposed telework for workers’, May 2021.

measures and actions aimed at reaping these opportunities and dealing with the challenges”; to “encourage a partnership approach between employers, workers and their representatives”; and to “support development of a human-oriented approach to integration of digital technology in the world of work, to support/assist workers and enhance productivity”.

The Agreement sets up a “**dynamic circular process**” addressing work content, working conditions, work relations and work organisation broadly understood (*pictured above*), while also taking into account issues related to “digital skills and securing employment”, “modalities of connecting and disconnecting”, “artificial intelligence and guaranteeing the human in control principle”, as well as “respect of human dignity and surveillance”.

The process involves five stages:

- 1) starting with “exploring, raising awareness and creating the right support base and climate of trust to (...) openly discuss the opportunities and challenges/risks of digitalisation”;
- 2) joint mapping of such opportunities and challenges and the identification of avenues of action;
- 3) adoption of common strategies for digital transformation;
- 4) implementation of appropriate measures;
- 5) regular joint monitoring of their effectiveness.

Being a framework agreement, this process is meant to be tailored to specific national, sectoral and company contexts. While the Agreement does go into a certain level of detail when it comes to potential measures to be considered in each concrete context, it is up to member organisations to uphold its provisions within three years of the date of signature. Given its nature, the Agreement does not preclude it being complemented by additional agreements at any relevant level of social dialogue.

Conclusions

As Europe is one of the most advanced regions in the world in terms of digital transformation, it also presents a heterogeneous panorama in terms of the level of technological development and the involvement of social partners in the dialogue on how to fairly manage the transition and secure employment, adapted skills and good working conditions. Trade unions across Europe make efforts to ensure that digitalisation benefits all and does not widen, but rather contributes to narrowing, the existing disparities.

The COVID-19 pandemic has incentivised companies to invest in digital solutions and to implement teleworking arrangements on a wider scale. The economic recovery of Europe after the pandemic puts digitalisation among its priorities, and public funds will be available for companies in industry to implement digitalisation, automation and robotisation programmes. Trade unions must ensure that these funds are used to improve rather than deteriorate the quality of human labour and that employees are properly trained and assisted to tackle the challenges of the more digitalised workplaces and work environment. For this purpose, trade unions must have a say in the definition and implementation of national policies that promote digitalisation and Industry 4.0.

The impact of digitalisation on work has multiple facets. While its overall impact on employment is difficult to assess (certainly, some manual and repetitive tasks are being replaced by machines, while other, more complex tasks are created for humans), the digitalisation has a clear impact on the content of jobs and needed qualifications. Trade unions are well aware of the productivity gains induced by digitalisation, and the question is not whether the digitalisation is beneficial to the industry overall, but rather if the results of digitalisation are fairly distributed and workers receive a fair part of them.

The lack of proper information and consultation on economic matters related to digitalisation, including on investments and specific assessments of digital gains, limits the potential for a fair distribution of these gains. Where the social dialogue does not address digitalisation, there is an increasing risk of negative side effects on employment: job atomisation (replacement of long-term and full-time work with a career path, with occasional, short-term contracts without benefits or any career opportunity), outsourcing and labour polarisation. In this respect, trade unions must ensure that digitalisation maintains and improves the quality of employment, labour standards and social protection.

Digitalisation also has a certain potential to relieve employees of physically and psychologically stressful activities and to improve working conditions overall. There are a number of positive aspects for workers: relieving them of repetitive tasks, improvement of ergonomics, flexibility of

working hours for the employees, and the possibility to choose the place of work. Trade unions are in favour of these changes where they clearly benefit the workers, but they are also fighting to make sure that these improvements do not bear a cost in terms of increased control and supervision, mental exhaustion, cognitive overload or stress.

The issue of skills and the need for training is central for trade unions when it comes to digitalisation. The use of digital technologies has increased the need for competences such as IT skills, interdisciplinary working methods, process know-how and problem-solving skills. There is a clear need for companies and industries to supplement investment in new technologies by additional efforts to train and reskill employees that are going to use or be impacted by these new technologies. In this respect, trade unions are actively promoting sectoral agreements on employment security, continuous education, and special training programmes to increase the employability of the workers. Complex systems of social dialogue on skills adaptation, including in relation to new technologies, were put in place in developed countries of Western and Northern Europe, while in many countries of Southern, Central or Eastern Europe, the needs in terms of skills and trainings are clearly perceived by trade unions, but not sufficiently covered by existing policies and instruments. In order to avoid a risk of shortage of skilled labour in the future, trade unions from these countries need to fight to make sure that companies and industries are putting enough resources into adapting the labour force to the new digital working environment.

The COVID-19 pandemic has made things even more complicated for the unions in terms of managing the digital transition, with the emergence of a new significant trend: telework. While before the pandemic, digitalisation in the industry was mostly perceived in terms of automation and robotisation of processes, after 2020 it is also seen as a factor that defines the place from which the work is done. Telework was extensively used during the pandemic due to sanitary restrictions and it opened the door for companies to implement this type of arrangement on a large scale once the pandemic is over.

Although there is a certain temptation for companies to increase the recourse to telework due to perceived productivity gains, the equation is not at all simple, with many factors influencing the economic outcome of remote work, both in positive (reduction of commuting times, lower costs of office space and utilities for companies etc.) and negative ways (decreased interaction between workers, lower reactivity on urgent matters, loss of motivation, etc.). Telework also poses a number of challenges for the unions in terms of organisation and collective actions.

As in most European countries, legislative frameworks on telework are not sufficiently elaborated. Trade unions have a very significant role in negotiating specific agreements: setting up fair conditions for the implementation of telework, securing aspects such as the employee's right to decide the place from which to work, the right to disconnect and compensation of incurred expenses. In this respect, industriAll Europe took a clear position and supports national trade unions in promoting that teleworkers enjoy the same rights as all other workers, including the right to join a union, collective bargaining and training. The position paper 'A telework option that works for all', published by industriAll Europe, clearly defines the areas in which more regulation is needed so that telework becomes an advantage for workers and does not only remain a cost reduction solution for the business.

In order to ensure that digitalisation and its specific manifestations, such as robotisation or telework, have positive social effects, there is a clear need for a constant and comprehensive social dialogue at all levels on the effects of the digital transformation. The survey conducted in 2019 by industriAll Europe among its member unions revealed that generally the impact of digitalisation on workers and working conditions is not sufficiently addressed in the social dialogue at company level, and that there are significant disparities among regions: the subject of digitalisation is more common in the dialogue between unions and companies in Northwestern Europe compared to Southwestern and Central and Eastern Europe.

The form under which social dialogue on digitalisation takes place in various countries largely depends on existing systems of industrial relations. For instance, in Germany, digitalisation is perceived by the unions as a field of action for co-determination, while in France, the social dialogue on these issues is based on a complex legal framework that extended the economic role of the works councils, empowered to monitor the progress of their companies. Trade unions from Southern European countries, such as Spain and Italy, have acknowledged the importance of sectoral collective agreements to promote information and consultation rights in cases of the introduction of new technologies, changes in work organisation, to define the conditions of telework, to promote the right to disconnect and to share productivity gains. In some Nordic countries, digitalisation has, on the contrary, moved negotiations from sectoral to company level, leading to a decentralisation of industrial relations, as shown in our research on Finland. Finally, in most of Central and Eastern European countries, there is clear lack of social dialogue on the impact of digitalisation and trade unions expect that norms are set at European level to open the door for the development of trade union positions and specific action plans at national level.

National efforts by trade unions to ensure a just digital transition are complemented and supported by European-level action. In this respect, European trade union organisations have been making visible progress in recent years. Specifically, industriAll Europe promotes a reinforced social dialogue at all levels (including mandatory trade union involvement for accessing European funding), participation of trade unions in elaborating and implementing adequate investment plans, proper active labour market policies, and improved social safety nets for those at risk of losing their jobs.

The Framework Agreement signed in June 2020 by European cross-sectoral social partners directly addresses the issue of digitalisation and sets up a new circular process of social dialogue on work content, working conditions, work relation and work organisation. This Agreement opens the door for more specific processes of information and consultation at national, sectoral and company level, and provides general guidelines for national organisations to implement more in-depth agreements at any level of social dialogue.

While this report shows a number of disparities in terms of digital advancement and social dialogue on digitalisation across Europe, it also allows for optimism on managing the technological transition in a socially fair way due to concerted trade unions actions at European level, existing exchange of good practices and common values and objectives.

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