



FINAL REPORT

Exploring the contribution of social dialogue and collective bargaining
in the promotion of decent and productive virtual work.

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Abbreviations used in the report

APV: mandatory workplace assessment
 ArbVG: Labour Constitution Act
 AschG: Workers' Protection Act
 BAT: Advisory Board for Work and Technology
 CCOO: Trade Union Confederation of Workers,
 CDS: Christian-democrats
 CECA: Spanish Savings Banks Confederation
 CIP: Confederation of Portuguese Industry
 CGTP: General Confederation of the Portuguese Workers
 EACB: European Association of Cooperative Banks
 EAKL: Estonian Trade Union Confederation
 EBF-BCESA: European Banking Federation-Banking Committee for European Social Affairs
 EFL: Union of Estonian Financial Sector Employees
 EÕL: Estonian Nurses Union
 EPSU: European Public Service Union
 ESG: European Saving Bancs Groups
 ESSD: European Sectoral Social Dialogue Committee
 ETKL: Estonian Employers' Confederation
 ETNO: European Telecommunications Operators' Associations
 ETUC: European Trade Union Confederation
 EWCS: European Working Conditions Survey
 FEPS: Foundation for European Progressive Studies
 FF: Financial Services Union
 FH: Confederation of Danish Trade Unions
 FINE: Force, Independence and Employment
 FOA: Danish Trade and Labour Union
 GPA-djp: Austrian Trade Union of Private Sector Employees, Graphical Workers and Journalists
 HOSPEEM: European Hospital and Healthcare Employers' Association
 HRM: human resource management (HRM)
 ICT: Information and Communication Technologies
 ICTWSS: Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts
 IDA: Danish Society of Engineers
 ILO: International Labour Organisation
 INE: (Spanish) National Statistics Institute
 KL: Local Government Denmark
 OCDE: Organisation for Economic Co-operation and Development
 PDAs: Personal Digital Assistants
 SBSI: Banking Trade Union of the South and Islands
 SINDITE: Portuguese Union of Superior Technicians in Diagnostics and Therapy
 SMEs: Small and Medium Enterprises
 T/ICTM: Telework/ICT-mobile work
 UGT: General Workers Trade Union
 UNI-ICTS: Uni Global Information and Communications, Technology and Services:
 WKO: Austrian Chamber of Commerce

Introduction

Research finds that an increasing number of employers are using new ways of work and organisation facilitated by New Information and Communication Technologies¹ (ICT). According to Popma (2013), 25% of workers (employees and self-employed) in Europe had the possibility of mobile working, as a result of the extended availability of internet access, and the increased number of mobile phones and tablets that enable work anywhere. More recently, Eurofound and ILO (2017) found that telework and ICT mobile work (T/ICTM) is increasing in most European countries. The study found, based on data from the European Working Conditions Survey (EWCS, 2015), that around 17% of employees in Europe were doing some T/ICTM work. The study also found some variations in the incidence of T/ICTM across countries, sectors and professions: Nordic countries recording a higher incidence; and T/ICTs being most widespread among so-called knowledge workers and high skilled workers.

Many analyses recognise that the introduction of new ICTs enabling space mobility and working time flexibility offer a wide range of flexible benefits for both individuals and organisations (Rafaelle and Connell, 2016; Niclin et al, 2016). Some of the positive outcomes for individuals are associated with increased autonomy and the increased potential for reconciling work commitments with other duties outside the workplace. Increased perceptions of autonomy are also positively associated with job satisfaction and performance (Gajendran and Harrison, 2007; Allen et al, 2015). However, some problems or risks have also been identified. For example, a great range of literature has identified negative impacts on several dimensions such as: working time, including working long hours, informal and unpaid work, or work-life conflict (Cousins and Robey, 2013; Chelsey, 2014; Dén Nagy, 2014; Eurofound and ILO, 2017); well-being, and health and safety (stress, isolation, etc.) (Ninaus et al, 2015; Jeddi, 2014; Popma, 2013); training, and knowledge sharing and transmission (Taskin and Bridoux, 2010); as well as new managerial practices which have been associated with new forms of control and surveillance (Kesseling, 2014; Koslowski, 2016; Mazmanian et al, 2013). These negative impacts counteract the various positive effects identified by more optimistic analyses: autonomy becomes dependence and embedded in more managerial surveillance practices, as ICTs may permit constant and intrusive supervision, even extending into workers' own homes; working time flexibility extends work activities into 'social hours' and the home, negatively impacting on social and family relations outside work.

In parallel, technological transformation is also affecting traditionally mobile occupations. Occupations such as truckers, security guards or home-care workers are increasingly using 'digital mobile reporting systems' to capture and communicate the tasks they do 'in the field'. These digital devices can improve the transparency and quality of the services offered. However, they also offer employers tools for increased monitoring and enhanced control over the workforce (Rosengren, 2018).

The existence of different advantages and disadvantages with technological transformation impacting stationary jobs (which become mobile) and traditionally mobile occupations (which become digitalised or virtualised), make this a key topic for social dialogue and collective bargaining. However, how social dialogue and collective bargaining is addressing digitalisation and

¹ New ICT is a term used to describe recent technological devices which favour higher space and working time flexibility. Early telework arrangements relied on a first generation of computers and telecommunications tools, which only enabled home-based telework. At the end of the 20th century the evolution of ICT favoured the proliferation of smaller and cheaper wireless devices such as mobiles phones and laptops that allowed employees to exceed stationary workplace arrangements and work not only from home but from other locations (mobile office). The expansion of new devices such as mobile phones and laptops at the end of the 1990s and early 2000s, was completed by a third ICT generation that included smartphones and similar devices connected to the internet, in conjunction with cloud computing technologies, growing since the mid 2000s, with capacity for massive storage of data in virtual locations and networks (Holtgrewe, 2014; Valenduc and Vendramin, 2016; Messenger and Gschwind, 2016).

virtual work is an issue that remains to some extent unexplored, especially at company level and in relation to traditional mobile occupations.

The DEEP VIEW project deepens understanding on how social dialogue and collective bargaining at European, national, sectoral and company levels not only address the challenges of work transformation due to New ICTs, but do so with the aim of promoting productive and decent virtual work. In this study, the concept of mobile virtual work is used to cover: those work arrangements in which workers who work in traditional stationary jobs choose to work in different workplaces (home, transport, public spaces, etc.) through using ICT tools; and work arrangements where work is physically mobile due to operational reasons, and requires the use of internet, computers or other ICT tools (tablets, smartphones, etc.). Although virtual work is also used in the literature to describe new forms of employment which combine unconventional workplaces, the use of technologies and new contractual arrangements (Vandeluc and Vendramin, 2016), this project concentrates exclusively on virtual workers who have an employment contract with an employer. Thus, those forms of virtual work that entail different employment relationships (platform work, etc.) are not covered.

The report presents the outcomes of the DEEP VIEW project. It first conceptualises mobile virtual work, provides research questions and explains the methodology followed. The following sections present the outcomes from the analysis of the five countries and three sectors studied.

1. Analytical framework, case selection, research questions and methodology

1.1 Conceptualising mobile virtual work

In recent years, the impact of information and communications technology (ICT) on mobility and working time flexibility has attracted a growing research interest. Empirical and theoretical analyses from different disciplines such as law, sociology and industrial relations, have increasingly studied the challenges and potentialities brought by work arrangements which enable workers to work ‘anytime and anywhere’ through the use of ICT. The origins of the scientific literature on ‘ICT-enabled mobility’ work arrangements can be traced to Jacks Nilles’ (1975, 1988) and Alvin Toffler’s analyses (1980), which referred to processes where work could be relocated to employees’ homes thanks to new technologies such as computers and telecommunications tools. Analysis on these work arrangements, conceptualised either as ‘telecommuting’ or ‘telework’, drew on an optimistic narrative which linked mobility, technology and freedom, and stressed several advantages such as reducing commuting times, decreasing pollution or even favouring the creation of new industries. Three decades later, the spread of cheaper, smaller and increasingly connected devices, like smartphones and tablet computers (new ICTs), accompanied by the vast reach of the internet, has favoured a diversification in the way ICT-enabled work can be performed and organised (Messenger and Gschwind, 2016). Accordingly, literature has identified and conceptualised a variety of ‘ICT-enabled mobility’ work arrangements where work can be carried out at different workplaces (at home, in public spaces, in non-traditional working environments) and with different degrees of working time flexibility. While the concept of telework is still used in regulatory documents, it is observed a proliferation of new terms subsumed under the generic term of ‘virtual work’ (Valenduc and Vendramin, 2016), such as e-nomad (Eurofound, 2012), mobile virtual work (Vartiainen 2006) or ICT-based mobile work (Eurofound and ILO, 2017). All of these terms highlight the potential of ‘ICT-enabled mobility’ work arrangements for enabling people to work ‘anytime, anywhere’. In parallel, more critical studies have emerged which show the drawbacks of these work arrangements in terms of blurred boundaries between life and work, overtime, (Dén-Nagy (2014), health and safety (Tavares, 2015), training and knowledge sharing (Taskin and Bridoux, 2010), surveillance, etc. (Eurofound, 2020).

As most of the recent studies have focused on ICT-enabled mobility, there is a research gap regarding the impact and implications of ICT on those traditional occupations and industries where mobility is not made possible by ICT, but rather mobility is required by the labour process. The dominant focus of recent research on ICT-based mobility work has been criticised for reproducing a technologically deterministic relationship between mobility and ICT, which it is not observed empirically. The class and gender bias of the research approach has also been criticised, as it focuses on managerial and professional job positions in knowledge-intensive industries, while neglecting blue-collar and other traditionally female service occupations where work mobility is higher (Ticona, 2015; Cohen, 2010). Moreover, statistical evidence on the prevalence of mobile multi-locational work is far from the alleged potentialities suggested by the literature. Drawing on the European Working Conditions Survey, Ojala and Pyöriä (2018) find that knowledge-intensive occupations (frequent ICT use, high levels of education and autonomy) are not related to high levels of mobility. Rather, the degree of mobility for knowledge-intensive occupations is much lower than that observed in the traditional mobile occupations and it is systematically related to home-based telework. This finding relates to the fact that only a low proportion of tasks are truly ‘anytime, anywhere’: mainly those requiring little or no direct communication and only a few lightweight materials. Moreover, additional technological, practical and cultural constraints complicate carrying out tasks ‘anywhere, anytime’ (Cohen, 2010).

Conceptualisations of mobility and ICT-based mobile work have distinguished different categories on the basis of the ‘level of detachedness’ from the employers’ premises (Eurofound and ILO, 2017). However, typologies have barely considered the relationship between the labour process and mobility. Thus, workers whose work requires movement are generally undifferentiated from workers who choose to work in multiple places. Building on the typology of mobile work by Cohen (2010), a distinction is made in this report on the basis of whether mobility is enabled by ICT or required by the labour process:

- **ICT-enabled mobility:** it includes those mobile virtual work arrangements through which workers in traditional stationary jobs get the option to work in different workplaces (home, transport, public spaces, etc.). ICT-enabled mobility is formally a choice, although circumstances (time-pressure, location) may constrain this choice. That is, ICT-enabled mobility may be agreed with the employer and carried out informally (for instance, for those workers whose journeys occupy a considerable portion of the day), however in practice, ICT-enabled mobility may also be enacted as a result of pressure from management.
- **Mobility for operational reasons:** it includes those jobs in which work is spatially dispersed, requiring mobility to carry it out. In these cases, work cannot be completed in a single workplace but may involve more or less frequent movement (Cohen, 2010). Jobs that require mobility for work can also demand ICT use to different degrees.

The focus of the DEEP VIEW project is **mobile virtual work**, covering both ICT-enabled mobility and mobility for operational reasons. It therefore studies: work arrangements in which workers in traditional stationary get the option to work in a different workplace (home, transport, public spaces, etc.) by using ICT tools; and work arrangements where work is physically mobile due to operational reasons and requires the use of the internet, computers or other ICT tools (tablets, smartphones, etc.). In terms of employment status, the project concentrates on workers who have an employment contract with an employer. Thus, those forms of virtual work that entail different employment relationships (platform work, etc.) are not covered.

At cross-sectoral level, the project focuses on ‘ICT-enabled virtual work’. With a view to studying virtual work requiring mobility for operational reasons, the study selected some sectors in which at least some occupations work in the field, as described in the next section below.

1.2 Case selection

The aim of the DEEP VIEW project is to analyse how social dialogue and collective bargaining are addressing the effects of virtual work on working conditions in countries representing different varieties of industrial relation systems; and sectors that cover occupations with different types of mobility (ICT-enabled and mobility for operational reasons), educational levels and sex distribution.

As for the country selection, the project includes Austria, Denmark, Estonia, Spain and Portugal, which are representative of different industrial relations clusters or models (Visser, 2009; Eurofound 2018). Austria is classified, together with central-western European countries, as a ‘social partnership’ model (Visser, 2009), with relatively weak trade union organisation (27% density rate in 2013 according to data from ICTWSS, the Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts), but centralised levels of collective bargaining ensuring high coverage (98% in 2013 according to ICTWSS data), and highly institutionalised forms of employee representation at the firm level (Eurofound, 2018). Denmark, like other Nordic countries, is defined as a model of ‘organised corporatism’ with strong traditions of labour market regulation based on powerful central organisations of unions (67% in 2013 according to ICTWSS data) and employers. Accordingly, this country records high collective bargaining coverage (84% in 2013 according to ICTWSS data). Spain and Por-

tugal have been generally classified under the so-called ‘state-centred’ model of industrial relations, with stronger dependence on state regulation. In both countries, collective bargaining coverage is relatively high, close to 70% according to ICTWSS data (2013, the last year available), within centralised but quite uncoordinated collective bargaining institutions, with greater dependence on state regulation. A high degree of state intervention in collective bargaining and employment regulation is reflected in the low trade union densities in these two countries (Eurofound, 2018). Finally, Estonia has been classified within a residual, less clearly defined ‘mixed’ or ‘transitional’ model typical of post-communist central eastern Europe (Visser, 2009). Most recent classifications define Estonia as a ‘market oriented’ model, characterised by low levels of collective bargaining (23% in 2012 according to ICTWSS data), and rare or absent concertation. At an institutional level, Estonia has a very uncoordinated and decentralised collective bargaining system (Eurofound, 2018).

Regarding the selection of sectors, there are two criteria: one related to the volume of virtual work in the sector (in terms of numbers of workers) and its documented impact on working conditions for those workers; and the other is related to sectoral diversity in terms of workforce characteristics, employment and working conditions, and working mobility types. Most of the studies have identified that the financial sector, and communication and information activities are among those where virtual work is more widespread (Eurofound and ILO, 2017). Recent research also suggests that ICT work is becoming more widespread in alternative sectors. In this sense, it is worth noting the changes observed in the home healthcare sector. Healthcare and especially home-care is traditionally a sector in which mobile work takes place. Care is provided for patients at home by a range of actors: home-care nurses; other workers such as (para) medical professionals (physiotherapists, etc.); and voluntary carers. These actors may also work in shared spaces and employers’ facilities with a view to coordinating their activities (attend meetings, report and share information about the users or patients, etc.). More than one decade ago, it was recognised in the healthcare sector that the professionals, and also the patients, had been relatively slow regarding uptake of ICT innovations (Wiethoff et al, 2006, Verburg et al, 2006). However, innovations in different countries appeared in the last decade. Today, nurses and carers have several IT-systems at their disposal, which allow them to communicate with patients, get in contact with colleagues to ask questions or share knowledge, and get access to or enter information about the patient from different locations (Peña Casas et al, 2018). As a result of these technological developments, some home healthcare workers who always were ‘mobile workers’ are becoming ‘virtual mobile workers’. These trends make the care sector an interesting case to explore. Besides, workforce characteristics, employment and working conditions in this sector differ from the knowledge sectors traditionally studied (Eurofound, 2011). Bearing this in mind, the project will cover the following three sectors:

- **Financial activities:** activities defined by NACE code 64, that is financial service activities, except insurance and pension funds.
- **Computer programming, consultancy and related activities (IT):** activities defined by NACE code 62.
- **Home healthcare activities:** in terms of activities, home healthcare (for example, for elderly or disabled individuals), excluding residential care and childcare services; in terms of occupations, nurses, healthcare assistants and auxiliary care workers (excluding medical doctors), who work on a regular basis in the field, visiting patients, etc.

1.3 Research questions and methodology

The following research questions are addressed:

1. How do trade union and employer organisations at peak and sectoral level frame and understand the challenges in work organisation and working conditions due to New ICTs and virtual work in different countries and sectors?
2. How have the effects of virtual work on work organisation and working conditions been addressed in national, sectoral and company social dialogue and collective bargaining?

3. Which good social dialogue practices at the company level can be identified?

To address those research questions, the DEEP VIEW project has relied on desk research and fieldwork.

The main purpose of the desk research was to provide a clear picture of the ‘state of the art’ for virtual work and regulation in the involved countries and sectors. In particular, the desk research identified levels of incidence, and the key features of virtual work and regulation. For this, national and European sources were consulted. The research team also revised scientific literature as well as relevant regulations, policy documents, social pacts and collective agreements at national, sectoral and company levels. Desk research findings were presented in standardised national reports, that were the basis for the comparative preliminary report published on the website of the project.

Fieldwork consisted of semi-structured interviews and company mini-case studies. The objectives of the semi-structured interviews were to: fill gaps from desk research; and gather in-depth information in response to research question 1 (how peak-level and sectoral trade union and employer organisations frame and understand the challenges brought by virtual work and new ICTs in work organisation and working conditions) and research question 2 (How have the effects of virtual work on work organisation and working conditions been addressed in social dialogue and collective bargaining). A total of 58 semi-structured interviews were conducted in the five countries studied with head of units or senior officers of peak-level and sectoral social partners.

Regarding the company mini-case studies, three cases per country were conducted (1 per sector, 3 per country, 15 in total). Mini-case studies were designed to analyse ‘good social dialogue practices’ at company level aiming to promote productive and decent virtual work. The case studies gathered in-depth information on: the way ‘good social dialogue practices’ were agreed or accomplished; the way the practices have been introduced and implemented (including participatory schemes for employees and regulatory tools used); and the outcomes observed. The definition of ‘good practices’ was pragmatically contextualised. However, some qualitative criteria were applied to ensure consistency. Qualitative criteria guiding the search and selection of ‘good social dialogue practices’ at company level were as follows:

- The practice deals with an aspect of virtual work which is connected to significant national and sectoral debates and problems.
- The practice is oriented towards the promotion of decent virtual work. It thus promotes virtual work arrangements offering good working conditions, a safe and secure work environment and a fair employment relationship, in line with European Trade Union Confederation (ETUC) 2016 resolution.
- The practice is introduced as a result of social dialogue, understood in a broad sense (information, consultation and joint negotiation/co-determination), and has been negotiated and agreed with any company main employee representatives (work councils) and trade union bodies.
- The practice has shown positive outcomes from the perspectives of both manager and employee representatives or trade unions or, in the case it has been recently introduced and no outcomes are available, the practice generates positive expectations from both company and trade union representatives.

For each mini-case study, desk research was carried out and a minimum of two interviews with manager and employee representatives were conducted.

Information gathered in the fieldwork was presented in standardised national reports which constitute the basis for this comparative report.

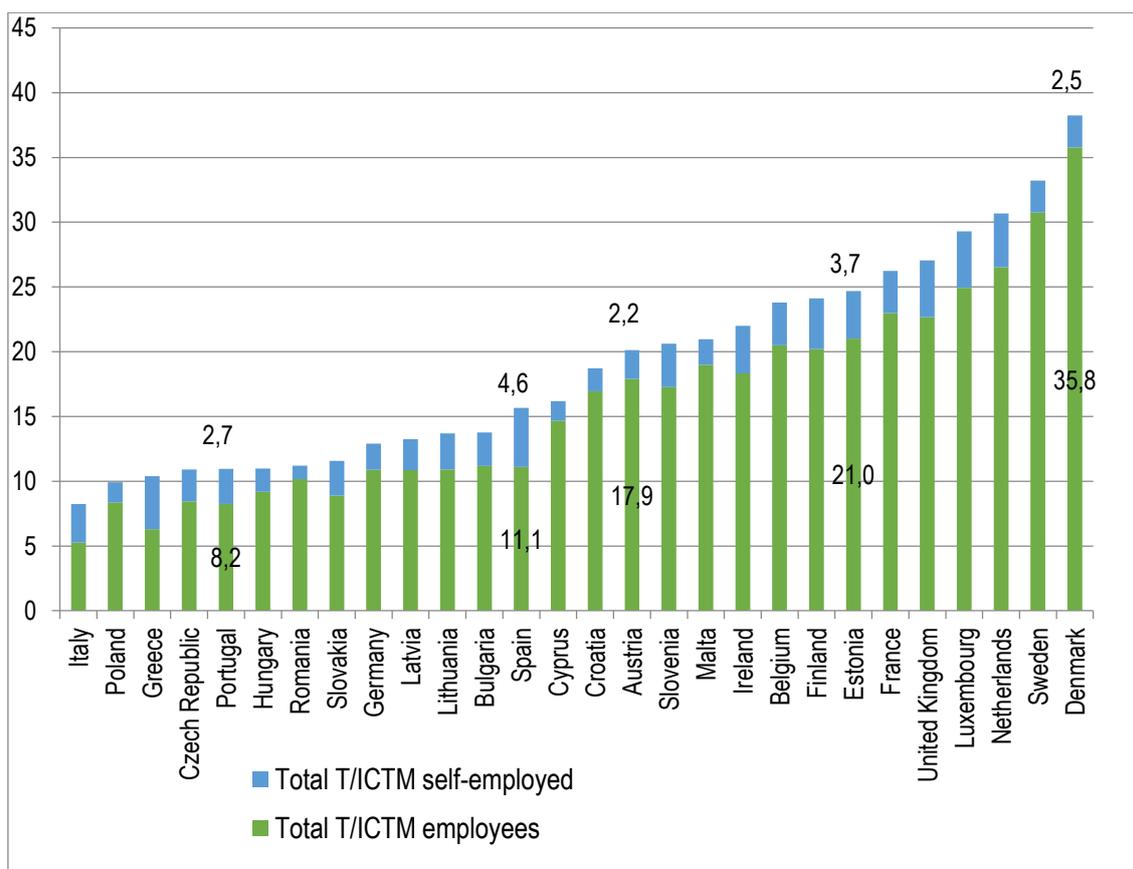
2. Virtual work at cross-sectoral level

This section focuses exclusively on ‘ICT-enabled virtual work’, which includes those work arrangements in which workers who work in traditional stationary jobs get the option to work in a different workplace (home, transport, public spaces, etc.) and with different degrees of working time flexibility. Mobility for operational reasons is only addressed in IT and, in particular, the home healthcare sector, bearing in mind the high proportion of sectoral employees who work in the field.

2.1 Incidence and features

The incidence of ‘ICT-enabled’ virtual work differs across the five countries studied. To ensure comparability, the report uses data from the Sixth European Working Conditions Survey (EWCS) and assumes the definition of telework/ICT-Mobile work (T/ICTM) from Eurofound and ILO (2017) as a proxy for virtual work. T/ICTM is defined as a work arrangement characterised by working with ICTs from more than one place (hotels, cafes, home, etc.) and with different degrees of mobility. Figure 1 below shows the incidence of T/ICTM across the EU 28 countries, distinguishing between T/ICTM employees and T/ICTM self-employed. Data shows that Denmark accounts for the highest share of T/ICTM of the five countries considered (38%), followed by Estonia (25%), Austria (20%) and Spain (17%). At the other end, Portugal (11%) is among the EU countries with the lowest incidence of these forms of employment. By employment status, Spain (5%) and Estonia (4%), are among the EU countries with the highest incidence of self-employed virtual work.

Figure 1. T/ICTM work in EU countries by employment status, (%) 2015

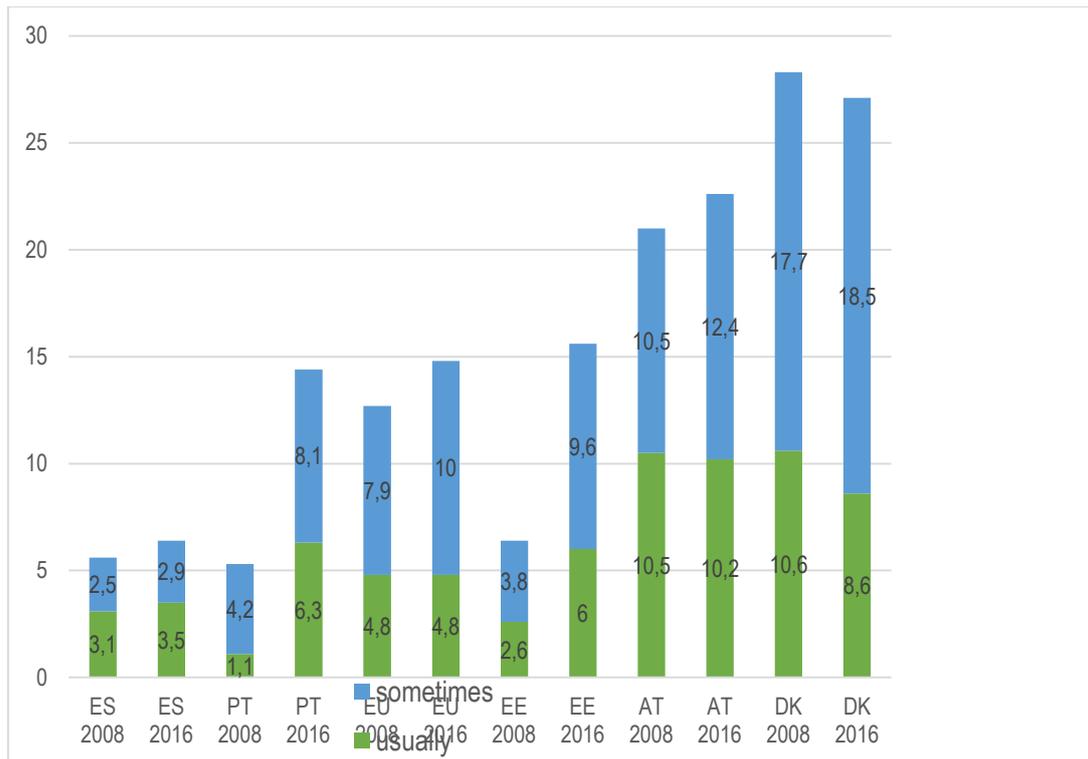


Source: European Working Conditions Survey, 2015.

Another available source for assessing the incidence and trends of mobile virtual work is provided by the EU Labour Force Survey, although it only applies to one specific virtual work arrangement, namely home-based telework. Estimated figures for the period 2008–2016 show a

general trend towards the expansion of this work arrangement, which is especially marked in the cases of Estonia and Portugal, the countries with the lowest initial figures. In both cases, the share of employees working from home sometimes/usually over total employment almost tripled from 2008 to 2016 (from 5% to 15% in Portugal; from 6 to 16% in Estonia). Austria (22.6%) and Denmark (27.1%) stand out as the cases where these work arrangements are more prevalent. Moreover, the share of teleworkers among employees has remained stable throughout the period in both countries. Conversely, Spain is the country with the lowest share of teleworkers, either occasionally or on a regular basis (6% in both years, 2008 and 2016).

Figure 2. Employed persons working from home sometimes/usually as a percentage of the total employment, (%) 2008 and 2016



Source: EU Labour Force Survey, *Employment and Social developments in Europe, 2018*.

The incidence of virtual work can also be estimated through different national sources. In Austria, the most recent statistics available are based on an ad-hoc module on ‘Work organisation and working time arrangements’ in the framework of the Labour Force Survey (2015). The ad-hoc module contains three sub-modules on working time, work organisation and ‘main place of work’ by socio-demographic and employment-related groups. The target group of the module consists of all people in employment over 15 years old in private households. The estimates show that most employees work at the employers’ premises (83.5%). Statistics show that: 5.8% of employees work at the clients’ premises; a similar share of workers do it outside the employers’ premises (5.2%); 3.3% in a car or vehicle; and only 1.6% at home. Women work at the employers’ premises more frequently than men (92.2% versus 75.5%). Data from the Austrian LFS also shows that 32.5% of all employees in Austria work both, at the employers’ premises and in alternative locations at least once a week: 10.1% work from home, while 22.4% work at alternative workplaces. The proportion of employees reporting working in at least two different workplaces is larger for men (40.8%) than for women (23.8%). It is also larger among the self-employed (70.9%). With regard to women reporting to work at least occasionally in an alternative workplace, 11.7% work at home, while 12.1% work somewhere else. Male employees more often work at a different place (32.1%) than home (8.7%). One third of employees had another working place, which was used by them at least once a week (63.9%)

(Statistics Austria, 2015). The survey also provides estimates on the intensity of mobility patterns from different data sources. About 64% of the employees who had another working place used this workplace at least once a week (63.9%), 17.9% at least once a month and 18.2% less often (Statistics Austria 2015). Data on trends is missing due to a break in the statistical series.

In Denmark, data sources have been focused on home-based telework. Most recent data on virtual work was published in December 2018. Statistics Denmark published the annual survey on 'IT use in the population 2018' (IT-anvendelse i befolkningen, 2018). In the survey, ICT use is defined either as the use of computers (desktop or portable), smartphone and tablets, or as other mobile devices at work, or as use of computer-controlled systems, machines, etc. ICT for work purposes includes homework and work on the road (in town, at customers, etc). Respondents were also asked about the frequency of work done outside their normal workplace (daily or almost daily, at least once a week but not every day, less than once a week and never). According to the survey, 11% of the employees do regular home-based telework (daily or almost daily), while another 13% do it at least once a week but not every day. Just over every second employee makes use of the opportunity to be able to work from home, while 39% state that they never work from home. The frequency of work done 'on the move', with customers or at an external workplace, resembles the frequency measured for home work: one in two works at an external location at least once a week, and four out of ten never do. Alternative information sources are provided by social partners, but these are only related to home-based telework. According to one of the main unions of ICT professionals in Denmark, PROSA, 51.3% of its members had worked from one to four days at home during January 2018, and 11.1% had worked for more than five days in the same period.

In Estonia, virtual work has been estimated based on the Estonian Work Life survey. The survey defines telework as a '*work arrangement whereby the employees work occasionally outside the regular premises of the employer*'. The Estonian Work Life survey (2015) reveals that 20% of Estonian employees had worked outside of the employer's premises during the four weeks before responding to the survey (not considering client meetings and other work-related trips). The survey shows sex differences: 24% of male compared to 16% of female employees. Those results are in line with EWCS survey estimates and confirm that in Estonia there is a higher proportion of 'virtual employees' who work from different workplaces outside employers' facilities (so-called teleworkers in the survey) than home-based teleworkers, which are estimated at 16% according to EWCS. The Estonian Work Life survey shows that so-called telework is most widespread among top managers and specialists (38%), followed by a high proportion of teleworkers among mid-level specialists, technicians and public servants (17%). Comparison data from Estonian Work Life survey 2015 and 2009 shows that the level of telework employees has remained very stable, but the average time spent in telework outside employers' premises has decreased. In addition, the survey revealed that the share of employees who do not have access to telework arrangements, but who would be interested, had increased from 18% in 2009 to 34% in 2015.

In Portugal, an alternative approach to the EWCS for assessing the incidence and trends of virtual work arrangements is provided by the Quadros de Pessoal (Personnel Records) for the period 2010–2016. This source of administrative information only provides information on country-specific types of legal contracts for home-based telework. The source reveals a declining trend in the use of home-based telework contracts. The total number of these type of contracts reduced from 2,431 to 851 throughout the period considered (2010–2016). These records contrast with evidence from EWCS regarding mobility patterns and ICT usage, that suggest an increase of virtual work arrangements over the same period. It also contrasts with data on home-based telework from the European Labour Force Survey. Therefore, telework contracts do not appear to be a reliable indicator for assessing the actual extent of virtual work,

since most virtual work arrangements can be adopted through other agreements or informal practices.

In Spain, an alternative national data source that provides relevant information is the ‘Survey about ICT and Electronic Commerce use in Companies’, conducted by the National Statistics Institute (INE). However, the survey has frequently modified the questionnaire, in particular those questions through which it is possible to estimate the number of companies having virtual work arrangements. The 2008 survey provided data on the percentage of companies with employees connected to their company ICT system through external telematic networks (14.7%). This has been taken in some publications as an indicator of the spread of telework in Spain (Aragón, 2010). With a view to comparing its evolution over successive years, the closest indicator to the one available for 2008 appears in the 2013 survey. The 2013 survey provides data on the percentage of companies that had employees who worked outside the company premises on a regular basis (at least half a week) and connected to the company ICT system through external telematic networks (27%). Data shows a relevant increase in the percentage of companies with some kind of virtual work arrangement. Since 2013 onwards, this question has not been replicated in the survey.

2.2 Regulation and recent social partner debates at EU level

At EU level, there are no specific directives focused on virtual work. However, several directives have addressed issues which are crucial for workers subject to ‘ICT-enabled’ virtual work. For instance, the EU Working Time Directive (Directive 2003/88) includes provisions aiming to protect the health and safety of workers (maximum of 48 working hours per week, etc.), including those performing virtual work. In addition, the Framework Directive on Safety and Health at work (Directive 89/391), which aims to encourage improvements in the health and safety of workers in the workplace, does not specify the work location when it comes to the application of its provisions.

The main European regulation addressing virtual work focuses on ‘telework’. The regulation was concluded in 2002 through an autonomous agreement between the European social partners. The agreement commits the affiliated national organisations to implementing the agreement according to the ‘procedures and practices’ specific to each Member State. This method of implementation is one of two options for the implementation of EU agreements negotiated by the European social partners provided in the Treaties.² The other option entails that negotiated agreements are incorporated into EU directives, which must be transposed into national law. Contrasting the two options, the first approach (where agreements are implemented according to the ‘procedures and practices’ specific to each Member State) is not legally binding and so greater diversity is expected in its implementation and effectiveness, given the diversity of national contexts of industrial relations.

In this EU framework agreement on telework (2002), telework was defined as a ‘*form of organising and/or performing work, using information technology, in the context of an employment contract/ relationship, where work, which could also be performed at the employers’ premises, is carried out away from those premises on a regular basis*’ (Article 2). The most important elements of this definition, which was considered at that time very broad (ETUC, 2006), were:

- Telework is understood as a work arrangement instead of a labour contract.
- Only employees with an employment contract are covered.

² Currently there are five EU autonomous agreements in total: telework, work related stress, harassment and violence at work, inclusive labour markets, and active ageing.

- Only telework which is carried out on a regular basis is covered (one day/week as well as five days a week). Casual or sporadic telework falls outside the EU framework definition.
- Telework was exclusively understood as ICT-enabled mobility arrangements, covering only those stationary jobs that can also be performed at the employers' premises. Work done using ICT in the case of mobility for operational reasons (i.e. it cannot be performed at these premises of the employer) was excluded.
- Telework may include several alternative workplaces to the employers' premises, such as the home, tele-centres, remote office or mobile work.

With regard to content, the EU framework agreement regulates the following issues:

- Voluntary principle: telework is voluntary for both employees and employers except in those cases where it is required as part of the initial job description.
- Reversibility: when telework is not part of the initial job description, the decision to move to telework is reversible by individual and/or collective agreement. The modalities of this reversibility are established by individual and/or collective agreement.
- Employment conditions, training and collective rights: teleworkers are entitled to the same rights and opportunities granted by legislation, collective bargaining and company rules/policies, as comparable workers at the employers' premises.
- Data protection: the employer is responsible for ensuring the protection of data used and processed by the teleworker.
- Privacy: employers respect privacy of employees and monitoring systems have to be proportionate to the objectives.
- Equipment: issues regarding equipment have to be agreed before starting the telework arrangement. As a general rule, the employer is responsible for providing, installing and maintaining the equipment unless the teleworker uses their own equipment.
- Health and safety: the employer is responsible for the occupational health and safety of the teleworker.
- Organisation of work: the teleworker manages the organisation of their working time under the limits of national legislation and collective bargaining. In principle, the teleworker can decide for themselves when to start work, when to take a break and when to finish work. Although, as noted by the ETUC (European Trade Union Confederation), this is an aspect which clearly needs complementary agreements, bearing in mind that working time autonomy is constrained by different work organisation aspects (work-team, etc.).

In recent years, the topic of virtual work has also been on the agenda of European trade unions at both cross-sectoral and sectoral level. The ETUC has addressed virtual work within the broader debate of digitalisation. In June 2015, the ETUC issued a preliminary assessment regarding the digital agenda of the European Commission. In this assessment, ETUC judges the Commission approach to be too narrow and excessively focused on market issues, such as technical standards and qualifications, and stresses the need to take into account broader aspects of digitalisation. These broader aspects include the protection of personal data, the social impact of digitalisation on working conditions, the risks of developing precarious digital work, and the

anticipation and management of transitions. In June 2016, the ETUC adopted a resolution on digitalisation entitled ‘Towards a fair digital work’. Through this resolution, European Trade Unions argue for an inclusive transition towards fair digital work, digitalisation that does not reinforce inequalities, the need to upskill the workforce and the need to incorporate the gender dimension. In parallel, the ETUC together with some European sectoral federations have held meetings with the European Commission in order to promote policy processes and mobilise sectoral social dialogue. The meetings aimed to promote worker participation in debates on the impact of digitalisation on the economy and working conditions. The debates within the European trade union movement were followed by debates at the level of the European Parliament, including participation from the Foundation for European Progressive Studies (FEPS), all of which resulted in a collective publication (Wobba, 2016). On the employer side, Business Europe has also published several position papers on the topic, requesting, among other things, assessments on how best to adapt labour markets and work organisation in order to maximise benefits from digital transformation. To this end, Business Europe (2015) claims that working time and employment regulations should be sufficiently flexible to support business competitiveness in the digital age, enabling companies to react quickly and flexibly to customer requirements.

2.3 Social partner debates and country approaches to regulate virtual work

2.3.1 Social partner debates and discourses on virtual work

The specific topic of virtual work, as defined in this project, does not constitute the core of social partner debates among those countries examined in this report, and has only been recently addressed in cross-sectoral social dialogue processes in Estonia. In the remaining countries, there have not been specific peak-level social partners’ discussions aimed at furthering virtual work regulation (telework, etc.) in recent years. Generally, the main bipartite and tripartite social dialogue discussions (including joint reports drawn up by tripartite bodies) have been framed within the broader term of digitalisation, being concentrated on topics such as the impact of industry 4.0 on employment (Austria), changes in the content of jobs and related skills requirements (Spain) or impacts of digitalisation on atypical forms of work (Spain and Portugal).

Nevertheless, information gathered in the interviews reveals that trade unions and employer organisations acknowledge the importance of the topic, and have to some extent reflected on the advantages and disadvantages it can bring for companies and employees. In line with recent research (Caspar et al., 2018), the **study finds that peak-level trade unions and employer organisations frame and understand the topic differently in the five countries studied.**

Interviews show that trade unions tend to critically assess recent trends regarding virtual work. In the countries analysed, trade unions stress the drawbacks and, to a lesser extent, the potential of virtual work to improve living and working conditions. The main challenges and drawbacks identified by trade unions are related, first, to negative impacts on several dimensions of working conditions. These include, in particular, working time. Trade unions in some countries (notably Austria and Spain) expressed concern for the growing number of workers who rely on ICT tools such as smartphones, tablets or laptops to supplement office-based work outside employers’ premises. This generally applies to employees working at home or at alternative places (transport, etc.), usually as informal and unpaid overtime. The Austrian Trade Union of Private Sector Employees, Graphical Workers and Journalists (GPA-djp) highlighted in the interviews that so-called ‘casual telework’ (Gelegenheitstelearbeit) is currently the most widespread form of virtual work, and may have detrimental effects on working time and well-being. Furthermore, trade unions expressed concerns about the potential increase in work intensification. This problem was also related to the rise of casual or informal virtual work. Trade unions in Spain and Denmark noted that work intensification can increase due to ICTs, meanwhile the right of virtual workers to ‘disconnect’ is not explicitly regulated. In

addition, trade unions were sceptical about the potential benefits of virtual work for work-life balance. Trade unions in several countries pointed out that home-based telework, which is normally the most common virtual work arrangement, can lead to blurred boundaries and increased interference between work and family demands. In some countries (Austria), trade unions critically pointed out that due to gender inequalities in unpaid care work, promoting telework or similar virtual work arrangements as a way to improve work-life balance can perpetuate the problem of women being subjected to the double burden of work and family responsibilities. Finally, trade unions state that virtual work is also associated with health and safety problems, since a growing number of workers using ICT for work purposes are suffering psychosocial health problems related to overtime and constant availability.

Second, trade unions (particularly in Portugal and Spain) perceive that the increase in the number of workers in distributed workplaces, combined with the breakdown of traditional work schedules, hinders their capacity to recruit, represent and enforce workers' rights. Some trade unions have a more hard-hitting critical discourse, such as the CGTP (General Confederation of the Portuguese Workers, Portugal), which frames virtual work, and in particular home-based telework, as a management approach intended to individualise employment relationships by isolating workers and detaching them from trade unions. In this sense, it was criticised that telework is often used by employers as a tool to send workers home prior to a dismissal.

Third, the extensive forms of monitoring enabled by the use of mobile devices and pervasive connectivity is an issue that worries trade unions in all the countries. Trade unions agree that this is clearly a matter for collective regulation as it may call into question several worker and individual rights (privacy, etc.).

Fourth, trade unions discussed in the interviews the problems of segmentation and inequality. In a general context characterised by a high degree of informality around newly virtual work arrangements beyond 'regular telework', dynamics around segmentation and inequality foster polarised trends. On the one hand, stable employees with reasonable bargaining power in high-responsibility or highly skilled positions are entitled to positive virtual work arrangements which contribute to improving work-life balance. On the other hand, precarious employees (unstable, etc.) with little bargaining power carry out virtual work as informal overtime or are subjected to arrangements with less favourable conditions. Trade unions in all countries stressed the need for collective regulation to handle inequalities. The right to 'voluntary virtual work' (home-based telework, etc.) is demanded for instance in Austria, and this right relates to the inequality problem. As pointed out by the trade union representatives interviewed, the fact that virtual work arrangements are still represented as a 'reward' instead of a right, leads workers to accept arrangements which do not meet health and safety standards, thus working in places with unsatisfactory or worse ergonomic standards.

Fifth, some trade unions are concerned about the need to update management skills to properly engage with virtual workers who have more work autonomy and discretion. This matter was highlighted by the main Danish peak-level trade union representing white collar/academic workers (Akademikerne), given the fact that a relatively high proportion of their members, who enjoy a high degree of work autonomy, complain about managers' abilities to support and guide them.

Trade union discourses on virtual work also show some cross-country variation. Trade unions in Austria, Denmark and Estonia also referred to positive effects of virtual work, mainly the way that virtual work responds to worker demands regarding work-life balance (Denmark and Estonia). Moreover, Estonian peak-level trade unions agree with employers on the need to combat company resistance to virtual work arrangements, with a view to responding to the high proportion of employees who would be interested to have access to virtual work arrangements,

but do not currently have access. In contrast, trade unions in Spain and Portugal³ tend to connect virtual work with precarious working conditions, given a general context of downward pressure on working conditions and a change in the balance of power between social partners in favour of the employers.

The employer organisations offer a more positive discourse on virtual work than trade unions. Under employer organisations' narratives, virtual work is generally represented as a worker demand which, similar to other flexible work arrangements, is intended to improve working conditions and, in particular, employee capacity to combine work and family responsibilities. When asked about trade union demands for the 'right to disconnect', some employer organisations (Austria) argue that companies also complain about workers checking websites for private use and answering private emails during their working time.

One of the matters raised by some employer organisations related to equipment costs. For example, employer organisations point out that IT infrastructure costs have dropped significantly since the EU framework agreement on telework was established. Moreover, employees are opting for more flexible and sporadic arrangements. As a result, the employer responsibility for providing, installing and maintaining work equipment should be revised or adapted to the variety of specific circumstances.

Employer organisations also stress how important it is to find the right balance between workers' privacy rights and employers' needs to check that employees working outside employers' facilities fulfil their work commitments. They also acknowledge the complexity of regulating this aspect at cross-sectoral level, because of the different management approaches that exist across sectors.

Moreover, some employer organisations (particularly in Estonia but also in Denmark) highlighted the challenges companies face in enforcing health and safety standards when employees work in alternative workplaces.⁴

Finally, it should be emphasised that **trade unions and employer organisations tend to also differ on the role that statutory legislation and collective bargaining should play in the regulation of virtual work.** Trade unions claim that in the absence of collective regulation, virtual workers are more likely to be exposed to the risks exposed above. Accordingly, they are in favour of centralised collective bargaining providing general rights for virtual workers, which can be further developed by company agreements. Compared to trade unions, peak-level employer organisations appear to be more reluctant to further regulate virtual work or even demand greater flexibility for the implementation of virtual work arrangements, as in the case of Denmark. They tend to perceive that new potential regulatory tools implemented through state regulation or centralised collective bargaining may add rigidity and complexity and, as result, discourage employers from offering workers the flexible arrangements they are demanding to achieve a better work-life balance. Generally, peak-level employer organisations argue that the company is the most suitable level for discussing the regulation of virtual work arrangements, either through collective bargaining or through individual negotiations.

³ In Portugal, discourse also differs among peak-level trade unions: the General Confederation of the Portuguese Workers (CGTP) offers a more negative and critical discourse than the General Workers Union (UGT).

⁴ The enforcement of health and safety standards associated with virtual work/telework arrangements appears to be problematic in most of the countries. While health and safety standards are also applicable to employees working under virtual work/telework arrangements, there are relevant specificities in some countries. For instance, in Austria the labour inspectorate is not allowed to inspect workers' homes under telework arrangements. Similarly, the constitution prevents the inspection of teleworkers at home in Portugal.

2.3.2 Social dialogue and collective bargaining regulation

In the five countries studied, the EU framework agreement on telework (2002) is still the main reference point for the regulation of virtual work through collective bargaining. Even if trade unions in some countries (particularly in Austria, Denmark and Spain) assess that this framework should be updated to address newly virtual work arrangements and additional challenges from ICTs, no other industrial relations regulation has been discussed at cross-sectoral level.⁵

In Austria, Denmark, Spain and Portugal, the EU framework agreement on telework (2002) was formally adopted in the 2000s, albeit through different approaches. In Austria and Denmark, it was mainly implemented through sectoral collective bargaining. In Austria, peak-level social partners only developed guidelines or draft model agreements aiming to foster and support implementation. Whereas in Denmark, peak-level social partners concluded a so-called ‘cooperation agreement’ in 2006 aiming to implement the agreement in those sectors and workplaces not already covered. It is also worth noting that in Denmark, telework was substantially addressed in several sectoral agreements prior to the conclusion of the European agreements (Prosser, 2012). In Spain, it was implemented through the Cross-sectoral Agreement for Collective Bargaining (30 January 2003) and its successive renewals. This kind of agreement only provides non-binding recommendations and guidelines for lower level collective bargaining. Due to this, it has been labelled an ‘agreement to agree’ (Visser and Ramos Martin, 2008) and is considered a softer form of regulation than sectoral or company collective agreements (Eurofound, 2010). In contrast, peak-level social partners in Portugal could not agree on the implementation of the EU framework agreement. It was the government who took the initiative of implementing the agreement through a labour code reform in 2003 (Visser and Ramos Martin, 2008).

The degree of implementation of the EU framework agreement on telework (2002) through collective bargaining also greatly varies across these four countries. It is implemented in around 90% of sectoral collective agreements in Austria and Denmark through more comprehensive regulation (particularly in Austria) (ETUC et al, 2006; Eurofound, 2010). Whereas in Spain and Portugal, its implementation has been scarce, mainly just applied to a few sectoral and company collective agreements. In Spain, less than 5% of company agreements and 3% of sectoral agreements included a clause on telework, according to the Collective Bargaining Statistics of the Ministry of Employment (data for 2016). In Portugal, the introduction of technology related topics in collective bargaining remained rather stagnant following the crisis (Centro de Relações Laborais, 2018). In 2017, there were only six collective agreements referring to virtual work, with two being multi-employer agreements (Centro de Relações Laborais, 2018). In 2018, there were nine agreements (two multi-employer and seven single-employer). In Spain and Portugal, social partners interviewed stated that virtual mobile work arrangements are implemented through human resource management (HRM) practices or more informal practices.

In the case of Estonia, the EU framework agreement on telework (2002) was implemented in 2017 through a cross-sectoral framework bipartite agreement (Estonian framework agreement on telework). According to peak-level bargaining parties interviewed, the agreement was

⁵ In Spain, an agreement covering several sectors going beyond telework was recently concluded by General Workers Trade Union (UGT) and Trade Union Confederation of Workers (CCOO), on the employee side, and the employer association AMETIC (Association of Electronics, Information and Communications Technologies), representing companies from the digital industry. This agreement established a protocol for the development of pilot projects prior to the introduction of a new technology in order to assess their impact on employment levels, working conditions and skills requirements. It is worth noting that the range of ‘enabling technologies’ covered in the agreement (robotics, artificial intelligence, data analytics, artificial intelligence) apply to different sectors in the economy and extend beyond the use of mobile devices considered in the Deep View project.

concluded with a view to covering regulatory gaps in statutory legislation. Thus, it was intended to offer better protection to the comparatively high and growing proportion of employees opting for (and requesting) ICT-enabled mobile virtual work arrangements. Social partners assess the EU framework agreement on telework (2002) positively and is generally reproduced in the Estonian framework agreement on telework except in the field of health and safety (see box 1). The regulation of health and safety for teleworkers is an issue highly discussed in Estonia. According to the Estonian Employers' Confederation (ETKL), employers have been struggling with teleworkers who do not fulfil the occupational health and safety regulation for years. The ETKL representative interviewed argues that for employers, it is very challenging to enforce health and safety under telework arrangements. Accordingly, ETKL finds it difficult or even impossible for employers to follow the EU framework agreement on telework (2002) provisions that make the employer responsible for protecting the occupational health and safety of teleworkers. In the Estonian framework agreement on telework, social partners agreed that the teleworker is responsible for following the occupational health and safety rules set by the employer. Additionally, it was agreed that employer and employee representatives will have to be able to check whether the employee is following the rules. In April 2018, the Ministry of Finance concluded a telework agreement with the Trade Unions of State and Municipal Agencies Employees (ROTAL), stating that the public sector must develop solutions in relation to telework demands hand in hand with the private sector and be more flexible regarding working conditions. The agreement resembled the Estonian framework agreement on telework and referred to the same principles.

Implementation of the Estonian framework agreement on telework has been scarce. Since the agreement was concluded, no extra steps have been taken regarding regulation or raising awareness about virtual work. The peak-level trade union interviewed (Estonian Trade Union Confederation, EAKL) attributed this to a lack of financial resources.

Box 1. Estonian cross-sectoral agreement on telework

In June 2017, social partners concluded a framework agreement on telework. The agreement was required due to several reasons. Firstly, around 20% of employees worked remotely in Estonia in 2015 (Work Life Survey data), and this number is expected to rise in the future due to technological developments and new forms of work that depend less on a specific workplace, but rather on internet availability. Secondly, the pre-existing legislation did not provide enough regulation related to teleworking. Thirdly, the aim was to implement the EU framework agreement on telework (2002). Overall, the agreement intends to mitigate the risks and fears related to teleworking among employers and employees, and to promote this form of work. Offering opportunities to work outside employers' premises is expected to increase employers' competitiveness for employees, and employees' motivation and ability to balance work and life, which is especially important for parents with small children, people living in rural areas and disabled people. As Estonia is facing challenges related to demographic changes and ageing, employers are increasingly facing the problem of finding skilled workers. Therefore, offering flexible working conditions such as teleworking, is one way to be competitive and find employees. The aim of the agreement was to set standards and be the foundations on which good practices are built and based.

The agreement includes several 'rules' for teleworking, stating that: teleworking is voluntary and based on a mutual agreement that can be cancelled; that all employees with similar responsibilities should have equal opportunities to telework; and that teleworking employees have the same rights as other comparable employees. Also, that teleworkers get their working equipment from the employer and they have to use it in accordance with the rules and guidelines set by the employer. In addition, that the employee should not experience any decrease in their income due to teleworking, meaning for example that any increase in expenses related to commuting should be reimbursed by the employer if these are done to fulfil work assignments. Another rule is related to working time, stating that in accordance with the assignments, the employee should be free to choose their working hours. Furthermore, that teleworkers have the same rights to participate in work-related education and training, have access to information regarding assignments and should have the potential to have regular meetings, elect employee representatives, be nominated at elections, and be treated as a regular colleague and not feel isolated from other employees.

For employers, the most troublesome part of telework is related to health and safety issues, and more specifically, how to ensure employee health and safety when employees are working outside employers' premises. To address that, social partners agreed that teleworkers have to follow the information on health and safety rules set by the employer, and that the teleworker is always responsible for following the health and safety rules set by the employer. Finally, that the employer and employees' representative will have to be able to check whether the employee is following the rules.

Source: Estonian fieldwork report, Masso, M., Kadarik, I., Tammsaar, H., Michelson, A., Nuiamäe, M. and Osila, L. (2019).

2.3.3 Statutory regulation

The role played by statutory regulation greatly varies in the five countries studied. In Austria and Denmark there is no statutory regulation of ICT-enabled mobile virtual work. Rather, these arrangements are dealt with in different laws related to data protection, and health and safety. In Austria, attention should be given to the provisions of the Data Protection Act 2018 (in particular, Sect. 96a) within the Labour Constitution Act (ArbVG). This provision established that the works council (and also the employer) has the right to demand a company collective agreement for the introduction or implementation of the following data processing projects: projects related to the installation of any technological facilities at work, which are (potentially) likely to monitor employees and affect human dignity (Sect. 96 (1) Nr. 3 ArbVG); any system for the computerised collection, handling and processing of employees' personal data, which exceeds the collection of the general data of the person and their qualifications (Sect. 96a (1) Nr. 1 ArbVG); and any system for the evaluation of employees, if data is collected, which is not justified by operational needs (Sect. 96a (1) Nr. 2 ArbVG). The regulation of working time or desk-sharing, which are also relevant issues for virtual work, are also subject to enforceable collective company agreements. In terms of health and safety, there is no specific regulation for virtual workers. Thus, virtual workers are covered by the Workers' Protection Act (AschG), which regulates health and safety provisions, and is applicable to all employees regardless of their place of work and mobility patterns. However, the practical applicability of worker protection regulations is unclear and problematic for virtual workers. Thus, there is an attempt by works councils to specify health and safety standards for virtual workers in company agreements. At the same time, there are some unresolved issues. For instance, the Austrian labour inspectorate does not have a permit to inspect a 'home office' working place. In Denmark, there are only 'Guidelines for telework or homebased work' (WEA 2014) under the Act on the Working Environment, which regulates health and safety issues for all workers. Legislation requires employers to provide proper health and safety conditions (desk, chair, etc.) to those employees working from home more than one day per week.

In Estonia, Spain and Portugal, there is specific statutory regulation. In Estonia, telework was regulated in 2009 under the Employment Contracts Act. This act provides a broad definition of telework which does not specifically mention the use of ICT, and only establishes a company obligation to implement the arrangement through a written agreement. In addition, it is worth noting recent legislative changes focused on health and safety. In May 2018, an amendment of the Occupational Health and Safety Act was approved (in force as of 1 January 2019), which stipulates the right to make an agreement between the employer and employee doing telework, where that agreement contains a contractual penalty in case the employee does not fulfil the occupational health and safety regulation. Thus, the aim of this stipulation is to act as a deterrent and guide for employees to comply with occupational health and safety regulation. In this way, Estonia has conferred this responsibility mainly on employees, while employers will still have to arrange instruction and training for employees. In addition, the Ministry of Social Affairs developed an explanatory guideline for the Occupational Health and Safety Act in 2019, that provides guidance to employees and employers using teleworking/virtual work.

In Spain, so-called 'distance work' was regulated (in Article 13 of the Workers' Statute in 2012) as a work arrangement (Law 3/2012) which has to be formalised through a written agreement. As in Estonia, the 'distance work' definition does not specifically mention the use of ICT. However, in contrast to Estonia, there is broader regulation in Spain, which addresses equal rights between teleworkers and traditional workers, health and safety protection, and representation rights. Labour rights and employer obligations were established, although in a less developed form than the 2002 EU framework agreement in some respects (Lousada and Ron, 2015). Moreover, a recent law was passed in 2018 which regulates new rights related to the use of ICT in the workplace, namely privacy and intimacy rights, and the 'right to disconnect' (see box 2).

With regards to Portugal, the government regulated telework in the 2003 Labour Code and its successive reforms. According to Article 165 of the 2009 Labour Code, ‘telework shall mean work rendered under legal subordination (labour contract), usually outside the employer’s premises and with ICT resources’. Portuguese statutory regulation deals with several of the topics addressed in the EU framework agreement on telework (2002), such as the treatment of teleworkers in relation to comparable workers at the employer’s premises, data protection, privacy, training, collective rights, and health and safety of the teleworker. Legislation also sets a fixed-term contract for the so-called ‘subordinated telework’, the duration of which cannot exceed three years. The contract must contain the duration of the work under a telework regime, the ownership of the work instruments to be used by the teleworker, as well as indicating who is responsible for the installation, maintenance and payment of the costs incurred in the provision of telework. More recently, the labour code has extended this type of employment contract by enshrining a right to virtual work (Article 166 (3) of the Labour Code, as amended by the Law 120/2015 of 1 September): workers with children up to the age of three have the right to move from the common labour regime to teleworking (home-based virtual work), on a temporary basis, and on the condition that this change is compatible with the activity carried out and with the employer’s resources (Ramalho, 2019). However, this contract has been barely used: there were only 850 telework contracts in 2016 according to the Quadros de Pessoal administrative source.

Box 2. Digital rights through statutory regulation in Spain

The passing of the new **Law 3/2018, of December 5, on the Protection of Personal Data and the Guarantee of Digital Rights** is seen as a positive development recognising new rights related to the use of new technologies in the workplace, namely privacy and intimacy rights, and the ‘right to disconnect’.

The Law provides for the recognition of the following rights:

- **Right to privacy** in relation to the use of digital devices at the employees’ disposal (Art. 87), and also related to the use of video-surveillance and sound recording devices in the workplace (Art. 89), as well as geolocation systems (Art. 90). The Law acknowledges the employers’ right to access and use information gathered from digital devices for the purpose of monitoring the fulfilment of job assignments. However, the company shall develop a policy regarding the use of this information which observes ‘minimum privacy standards’, and must inform employees on the characteristics of these devices and the criteria for the use of the information gathered. As a new development, the Law states the employee representatives must be involved in the establishment of these criteria (which until now were included in internal policies or codes of conduct). However, the Law does not determine the extent of their involvement.
- **Article 88 on the new ‘right to disconnect’ from work-related communications.** It is possibly the most striking development introduced by the Law, since it recognises the right of private and public employees to disconnect outside working hours in order to guarantee employee work-life balance and preserve the privacy of their private life. Particularly, the Law states that the ‘right to disconnect’ shall be preserved in the event of total or partial performance of remote work. In this regard, the employer must draw up an internal policy setting out the ways of exercising this right, as well as training actions aimed at making staff aware of the reasonable use of ICT tools. This policy shall be drafted jointly with employee representatives. Therefore, it is a right whose implementation is contingent on its development through collective bargaining.
- **Article 91 on digital rights in collective bargaining.** According to the text: ‘Collective bargaining may provide additional safeguards for the rights and freedoms associated with the processing of employees’ personal data, and the protection of digital rights in the workplace’

Source: Spanish fieldwork report, Arasanz, J., Frías, J. and Sanz de Miguel, P. (2019).

2.3.4 Social partners' views on statutory regulation

Statutory regulation on virtual work has been a topic of discussion for the social partners in all the countries studied. Although in some countries, namely Spain and to a lesser extent Portugal, this form of regulation has generated greater controversy among trade unions.

In Austria, trade unions assess statutory legislation positively, because the legislation reinforces the capacity of works councils to regulate virtual work at company level through enforceable company agreements, in the case of digital projects which are likely to be used for performance assessment. There is a general consensus in support of the governance approach towards virtual work, which mainly relies on sectoral and company collective agreements and, to a lesser extent, on statutory regulation. At the same time, trade unions have sought to include encompassing rights of teleworkers in the Labour Constitution Act (*Arbeitsverfassungsgesetz*, *ArbVG*), similar to the legal provision in Article 97/1 of the *ArbVG* on temporary agency work. Since the Austrian Chamber of Commerce (WKO) strictly opposed any legally binding regulations laid down by national law, this initiative has failed so far.

In Denmark and Estonia, the main social partner discussions have concentrated on health and safety legislation directly or indirectly affecting virtual workers. In Estonia, employer organisations welcomed the 2018 amendment of the Occupational Health and Safety Act which confers more responsibility on teleworkers. According to Estonian employers, previous regulation increased the workload of the Labour Inspectorate which, as one of the interviewees claimed, has to focus on more urgent issues like preventing injuries and fatal accidents at work, and recently more pressing mental health issues (including stress and depression at work). In Denmark, trade unions complain about Work Environmental Act, which provides general provisions on health and safety within the mandatory workplace assessment (APV). Since the APV mainly focuses on physical factors, trade unions argue for a new executive order on social and organisational work environments, which should include psychosocial risks associated with more flexible work arrangements such as virtual work. In contrast, the main peak-level employer organisation opposes stricter and more comprehensive regulation. Going further, the organisation holds that the Work Environmental Act is a rigid regulation which inhibits virtual work, by requiring employers to provide proper health and safety conditions (desk, chair, etc.) to those employees working from home more than one day per week. They argue that this regulation leads employers to deny a second work day at home in many cases. Accordingly, they are lobbying to amend it.

In Portugal and Spain, a conflict between state regulation and governance through collective bargaining is identified. This occurs in a general context marked by radical structural reforms unilaterally imposed by governments (and EU/international institutions), which have altered the balance of power between bargaining parties by strengthening the employer's ability to unilaterally regulate working conditions (Fernández Rodríguez et al, 2016; Eurofound, 2018). In Spain, trade unions critically reacted to 'distance work' regulation introduced in 2012, stressing the need to both maintain the approach of the 2002 EU framework agreement on telework (particularly regarding the definition of telework), as well as rely on collective bargaining for its implementation. In contrast, the employer organisation did not have any specific position on this regulation, the content of which is considered to be broadly in line with the EU framework agreement on telework (2002). Recent statutory legislation conferring new digital rights on workers is assessed positively by trade unions, although they are concerned about the difficulties in enforcing those rights, particularly among small and medium-sized enterprises (SMEs) which generally lack works councils.

In Portugal, where the state plays the most prominent role in the regulation of telework, there have been recent policy debates on existing legislation. The lack of collective agreements regulated telework prompted the Christian-democrats (CDS) to present three proposals in parliament during the last legislature to stimulate virtual work. However, all proposals were

rejected by the left-coalition that supported the Socialist government in parliament. The socialist government stated that virtual work is a topic for collective bargaining, not government regulation. The trade unions agreed on this position, as they disapprove of government interference in the regulation of virtual work. Nevertheless, they stress that to achieve balanced agreements regulating virtual work, the government should amend legislation reinforcing trade unions' bargaining power (particularly the rules regarding expiry of collective agreements). Employer organisations also agree that the statutory regulations that exist are enough and do not require further developments. However, in contrast with the trade unions, the employer organisations find that virtual work agreements should be reached by direct individual agreements between the manager and the employee.

2.3.5 Recent peak-level social partner initiatives

In a general context marked by the absence of social dialogue discussions and pacts on virtual work, trade unions have developed initiatives aiming to support the regulation of virtual work at sectoral or company level, and also extend or improve statutory legislation.

In Austria, it is worth noting the role played by the Advisory Board for Work and Technology (BAT), which is a body within the Union of Private Sector Employees, Graphical Workers and Journalists (GPA-djp), in charge of providing knowledge and proposals regarding the topic of how technology shapes the world of work. BAT is discussing and elaborating regulatory proposals for sectoral and company collective bargaining on: better data protection; data security and protection against digital surveillance; and co-determination when new technologies are introduced. Recently, BAT published two brochures entitled: 'Working environment 4.1 – Aspects of digitisation: What works council members should pay attention to and how they can help shape digitisation in their firms' (GPA-djp, 2018a); and 'Anyhow, anywhere, at any time. A new brochure about "anywhere working"' (GPA-djp, 2018b). Both are available for union members only. The brochures stress the demand for workers' effective co-determination when it comes to more flexible work organisation and work processes in general, as well as digitally shaped work organisation and work processes.

In Denmark, peak-level trade unions (Confederation of Danish Trade Unions, FH, and Akademikerne) have agreed on the need to updated state health and safety regulation (known as working environment regulation in Denmark) by including social and organisational work matters recognising the impact of ICT on working conditions. In addition, the Danish trade union Akademikerne is addressing working time and organisational challenges triggered by virtual work (the 'right to disconnect', etc.) within the main information and consultation bodies at company level (Cooperation Committees).

In Spain, most peak-level trade unions submitted proposals to the government with a view to regulating the 'right to disconnect' (General Workers Trade Union, UGT), and have attempted unsuccessfully to regulate different aspects of virtual work through cross-sectoral bipartite agreements, which would provide a common framework to be adapted at sectoral and company level (Trade Union Confederation of Workers, CCOO, and UGT). Moreover, the trade union foundation 'La Fundación 1º de Mayo' published a study which analyses the role of tripartite social dialogue institutions in the face of digitalisation challenges, concluding that they have been almost irrelevant (Rocha and De la Fuente, 2018).

In Portugal, the trade union UGT provides a template book named 'Agreement-type for Collective Bargaining', which proposes negotiation through collective bargaining and goes beyond statutory legislation in several aspects. The document specifies the following: it establishes a minimum six months time-limit for telework; it clarifies a digital code of conduct for employees; it attributes responsibility to the employer for hardware and digital security; it improves workers' rights by stating that the activity which the worker will exercise when the teleworking scheme is terminated must be agreed immediately; and it establishes that workers

with disabilities or with family responsibilities should have preference for accessing teleworking.

Compared to trade unions, employer organisations have only commissioned studies aimed at enhancing knowledge on the state of the art of virtual work. In many cases, those studies focus on digitalisation. For instance, the major employer's confederation in Portugal, the Confederation of Portuguese Industry (CIP) commissioned a consultation report published in January 2019 entitled 'Automation and the future of work in Portugal'.

3. Virtual work in the financial sector

3.1 Incidence and features of virtual work in the financial sector

Financial activities is one of the sectors most affected by recent technological transformation, and these developments have been framed as the so-called FinTech industry. The FinTech industry is defined as ‘*a variety of innovative business models and emerging technologies that have the potential to transform the financial services industry*’, including technological innovations such as digital and mobile payments, as well as new business models, such as peer-to-peer platforms (OECD, 2018, p. 9). According to ILO (2016), the FinTech industry shows the great potential for ICT-enabled work to fundamentally alter the way the financial business operates (ILO, 2016).

Financial activities is one of the sectors where virtual work (namely ICT-based mobile work) is more prominent, according to data from the EWCS 2015 (Eurofound and ILO, 2017). However, this source cannot be used to estimate sectoral data at national level, given the small size of the sample. Thus, the study has only relied on the fieldwork information provided by sectoral social partners for analysing the incidence of virtual work at national sectoral level.

Information gathered in the interviews conducted with sectoral social partners reveal cross-country differences with regard to the incidence of virtual work. In Estonia, Spain and Portugal, social partners stated that virtual work arrangements are scarce, and tend to be concentrated among highly qualified employees and managers. Virtual work (mainly casual or sporadic home-based telework) also exists among certain groups of workers in central offices, and specific business areas such as sales departments, insurance and human resource management departments (generally those in the most technological areas of the business and in job positions not involving direct customer service). The low incidence of virtual work in the sector in these countries is not explained by a lack of technical means. Rather, it is related to concerns such as cyber security, data protection and management resistance.

In contrast, in Austria and Denmark, virtual work arrangements seem to be more widespread and have increased in recent years, according to the social partners interviewed. In Austria, the first wave of telework started in the early 1990s and did not have much impact on the financial sector. However, social partners interviewed indicate a significant change in recent years. This is attributed to the increasing prevalence of groupware and the advancement of data security for sharing and transferring (potentially sensitive) data online. In Denmark, the banking sector has had long traditions of relatively flexible working conditions. In this context, a relatively high proportion of employees have had the opportunity to work at home or other places. At the same time, trade unions stressed that very few employees carry out ‘regular telework’. Employees generally opt for more flexible and occasionally flexible work arrangements. It is also worth noting that in Austria and Denmark, the expansion of virtual work arrangements is driven by new work organisation practices transforming the classical office into open-plan or activity-based offices in which employees no longer have fixed chairs and desks.

3.2 EU social dialogue recommendations

Telework has been recently discussed at EU level within the European Sectoral Social Dialogue Committee (ESSD) of the banking sector. The ESSD Committee comprises the trade union Uni Europa and several employer organisations: European Banking Federation-Banking Committee for European Social Affairs (EBF-BCESA), European Saving Banks Groups (ESBG) and European Association of Cooperative Banks (EACB).

EU sectoral social partners agreed on a joint declaration on telework in the European Banking sector in November 2017. In contrast with European agreements, a declaration is a non-legally binding text in which the social partners set themselves rules, objectives or guidelines. The declaration aims to reflect the effects of digitalisation on the banking sector related to telework. In line with ILO Global Dialogue Teleworking, EU social partners stress in the preamble the social advantages of teleworking related to the decrease in pollution, plus the creation of

employment opportunities in remote areas and for persons with disabilities. The declaration also notes that telework is a widespread phenomenon in the banking sector.

According to the declaration, telework *'is a form of organising work where tasks are performed with the support and the use of secure ICT devices and ICT-infrastructure outside a locally fixed employer environment'*. The most important elements of this definition are:

- Telework can be performed as an employment contract or as an autonomous para-employment contract.
- Workplaces outside employers' offices include: workers' homes, satellite offices or any other fixed location. 'Working while mobile' is excluded.
- Only telework which is carried out on a continuous/regular basis is covered.
- Alternative forms of work organisation such as smart work⁶ are not covered.

With regard to the content, the EU declaration regulates the following issues:

- Terms and conditions:
 - Teleworkers are entitled to the same rights and opportunities granted by legislation, collective bargaining and company rules/policies, as comparable workers at the employers' premises.
 - Workload and performance standards should be equivalent to those that apply to comparable workers at the employers' premises.
 - Teleworkers have to be available within the time period predetermined by the employer in agreement with the employee.
 - Teleworkers can be given opportunity to communicate with colleagues.
- Health and safety: the employer needs the ongoing support of the teleworker to fulfil health and safety duties. In order to verify health and safety, and data protection provisions, the employer, employers' representatives and relevant authorities need access to the telework place. However, where it is the employee's home, access may be subjected to prior notification and agreement.
- Data protection: it is the employers' responsibility to take measures to ensure data protection.
- Equipment use: the employer is responsible for providing, installing and maintaining equipment necessary for telework. Where the teleworker uses their own equipment, usage is subject to cybersecurity, data protection and other relevant rules.
- Training: the declaration recognises the equal rights of teleworkers and introduces provisions for teleworker training related to this specific mode of working, new tasks and roles (how to deal with online social contact, cybersecurity issues, etc.).

As shown, the agreement mainly reproduces the EU framework agreement on telework (2002) and does not include new provisions beyond some nuances. It is also worth noting that the declaration stresses the important role of social dialogue in the joint shaping of the future world of work.

⁶ The text does not specifically define smart work. This term is defined in the literature as flexible working systems that allow work in a convenient and efficient manner free from time and place constraints (anytime, anywhere) using ICT on a network (Lee, 2016).

More recently (November 2018), social partners in the financial sector agreed on a Joint Declaration on the Impact of Digitalisation on Employment. The declaration addressed the broader topic of digitalisation and considers new forms of work beyond telework. With a view to dealing with the effects of digitalisation, the declaration makes specific recommendations on data protection and privacy, training and competence development, and health and safety. Moreover, it states that all these issues should be addressed through European, national and company social dialogue.

3.3 Industrial relations context at national sectoral level

Sectoral industrial relations in the financial sector present similarities in Austria, Denmark, Spain and Portugal. In contrast, the system of industrial relations in the financial sector is markedly different in Estonia.

In Austria, Denmark, Spain and Portugal, collective bargaining coverage is very high, within a relatively centralised collective bargaining system. In Austria, Spain and Portugal, there is also a high level of fragmentation in collective bargaining, since sectoral collective agreements are conducted separately for most of the subsectors (commercial banking, savings banks, mortgage banks, cooperative banks, etc.). It is also worth noting that in Austria and Denmark, a multi-tier bargaining system exists which includes second-level negotiations at company level aiming to improve or develop provisions established at sectoral level (flexibilisation of working time, etc.). In Spain and Portugal, collective bargaining at company level also takes place and has negotiated most of the employment restructuring plans in recent years. Nevertheless, most of the innovations in work organisation, such as the adoption of flexible working schemes, tend to be unilaterally implemented by management without any consultation or bargaining with union representatives in both countries. With regard to the actors, employer organisation density in terms of employees is higher in Austria and Denmark (higher than 90%) than in Spain (44%) and Portugal (64%). Trade union density is high in Denmark (85%), compared with Austria, Spain and Portugal, where trade unions are weaker (Eurofound, 2018).

Estonia presents a highly different industrial relations system in the financial sector. Collective bargaining in the Estonian financial sector is non-existent at both sectoral and company levels. This is despite the recent establishment of a sectoral union in 2013 (Union of Estonian Financial Sector Employees, EFL). The foundation of a new trade union in the financial sector was surprising, considering the declining trend of union membership in the country. At the same time, there is also no employer association in the sector, which would identify itself as a social partner in order to negotiate and conclude collective agreements. Furthermore, it should be noted that the relationship between trade unions and employers has been difficult for several years. For example, as reported in the media, it was challenging for a trade union to negotiate a collective agreement with an employer – it resulted in unlawful dismissals, protest actions and numerous conflicts for a couple of years until it was settled with a goodwill agreement. On the basis of media coverage and announcements by EFL, it could be concluded that, overall, social dialogue has been difficult in the sector.⁷ This was confirmed by the trade union representative interviewed, who also stated that employees in the sector do not feel comfortable publicly stating their membership of trade unions.

3.4 Social partner debates and discourses on virtual work

The extent to which the topic of virtual work has been discussed by financial sector social partners greatly varies among the five countries studied. In Austria and Denmark, debates on

⁷ See, for example, the following articles: [Nordea töötajad jätkavad võitlust](#), *Äripäev*, 28.10.2016; [Eesti finantstöötajad hoiavad ametiühingust eemale](#), *Postimees*, 23.11.2016; [Euroopa finantstöötajad: Nordea Eesti peab lõpetama ametiühingu kiusamise](#), *Postimees*, 11.05.2017; [Luminor alustab inetu sisetülga](#), *Äripäev*, 28.09.2017; [Luminor ja töötajad leppisid ära](#), *Äripäev*, 28.01.2018. All articles were accessed on 19.12.2019.

telework took place already in the 1990s. In recent years, there have not been sectoral level bargaining processes focused on further regulation of virtual work (including discussions of EU level sectoral joint declarations). However, social partners in both countries accept that virtual work arrangements are becoming an integral part of work organisation and management policies, as part of broader changes in work organisation. In Denmark, virtual work arrangements are negotiated on an individual basis. In comparison, Austrian social partners agree that new and more flexible virtual work arrangements require new company level regulatory approaches, which aim to update traditional telework regulation.

In Spain and Portugal, the EU framework agreement on telework (2002) was never discussed at sectoral bargaining level. In recent years, social dialogue at company level in both countries has been particularly focused on mitigating the impact of company restructuring (mergers and acquisitions) and mass dismissals. In Portugal, the effects of the economic crisis seem to have indeed hindered the negotiation of new topics such as virtual work. According to the major Portuguese trade union of the sector, the Banking Trade Union of the South and Islands (SBSI), the financial sector will not discuss the topic of virtual work in the coming period, as there are layoffs and many other problems to overcome. In addition, the SBSI indicated that it has no experience with virtual work and is not aware of its existence in the sector. Therefore, the main approach to deal with virtual work is left to HRM practices. In contrast, Spanish social partners, who have been subject to a similar economic context, have entered the debate of virtual work recently in some subsectors and at company level.

In Estonia, where there are neither sector-related employer organisations nor sectoral collective bargaining, the topic is only addressed through HRM policies. Trade unions have not managed to enter into negotiations or discussions at company level about virtual work, in a context of highly individualised employment relationships and the difficulties trade unions encounter in representing and recruiting workers. In this context, the sectoral trade unions approached have not elaborated a discourse yet. Since they have not problematised the topic, they could barely discuss potentialities and drawbacks during the interviews.

As virtual work is not equally widespread among the five countries studied, and social partners' experiences in discussing and bargaining the topic greatly varies across them, it is not surprising to find some cross-country variation on the main topics highlighted by social partners during the interviews. The key features of cross-country variation are outlined in the remainder of this section.

Austria and Denmark: virtual work as a part of broader transformations in work organisation

In the Austrian and Danish financial sectors, the main debates stem from the observed linkage between: the increasing offer of virtual work arrangements; and the shift towards 'desk-sharing' and 'activity-based' offices which provide fewer individual workplaces than the company has employees. Employers in Austria and Denmark see similar advantages to virtual work in terms of reduced real estate and energy expenditures. Trade unions and works council members seem to accept these management approaches, although they stress the need to strengthen the role of collective regulation where the extension of virtual arrangements is driven by management strategies for activity-based offices (particularly in Austria). In Denmark, concerns about existing health and safety regulation were also raised by employers. As explained in a previous section, Danish statutory regulation obliges employers to implement a health and safety assessment, and install a fully equipped home office where the employee does home-based telework for more than one day per week. According to a sectoral employer organisation (Danish Employers' Association for the Financial Sector, FA) this leads employers to either refrain from allowing employees to work from home more than one day per week, or implement telework informally. The high degree of informality around virtual work was also confirmed by trade unions' representatives, who stated that it is done informally with no use of collective bargaining mechanisms related to the EU framework agreement on telework (2002). Surprisingly, trade

unions seem to tacitly accept these practices, as they are normally oriented towards improving employee work-life balance. A trade union representative from the financial sector (Financial Services Union, FF) was interviewed and pointed out that virtual work is not a conflictive issue in the sector, as it is not having negative effects on health and safety linked to higher work intensity or overtime. This is also confirmed by the lack of cases brought to the Labour Court or the Danish Working Environment Authority on the topic.

Spain and Portugal: unregulated virtual work negatively impacting working conditions

In Spain and Portugal, trade unions are particularly concerned about the spread of unregulated occasional telework among managers and professional staff, which results in unrecognised overtime. In Portugal, the main sectoral trade unions have not even contemplated discussing the topic, given the urgency of alternative problems (lay-offs, cuts in pay and health benefits, etc.). In contrast, Spanish trade unions attempted to regulate this issue through sectoral collective bargaining in different subsectors in the last bargaining round (2019). However, it is worth noting that in the Spanish case, the relationship between unrecognised overtime and ICT is not straightforward. Trade unions in the banking sector have been long concerned with the problem of time pressure and the extension of working hours since the 1990s. Indeed, the recent obligation for companies to register the start and the end of effective working time, has coincided with the publication of the European Court of Justice ruling requesting Spanish companies to establish just such a registration system. Significantly, this European decision was the result of a labour conflict originating in the Spanish financial sector.⁸

Further debates beyond virtual work

Finally, it is worth noting that the debate and/or social partners' interest in some countries goes beyond virtual work, focusing rather on the broader concept of digitalisation. In Austria, the Austrian Chamber of Labour commissioned a study on the impact of digitalisation on Austrian banks. The study was carried out by a company belonging to the international consulting group KPMG. The report, mainly based on a literature review, deals with the impact of digitalisation on the technical and labour processes in banking. It also includes a section on remote working (working anywhere), which is described as one of several new forms of employment that are likely to grow in banks in the future.

In Spain, trade unions argue that digitalisation is driving employment restructuring through the development of new relationship channels with clients that reduce the need for face-to-face interactions and allow for massive cost-reduction strategies. According to a recent trade union publication, the impacts of digitalisation are deepening the reduction of the Spanish financial sector. This reduction has been fostered by the Spanish government and EU institutions through the broader financial assistance programme, which translated into mergers and acquisitions, and subsequent office closures and downsizing (Rocha, 2019).

3.5 Sectoral collective bargaining

Sectoral/multi-employer collective bargaining has only regulated some forms or aspects of virtual work in Austria, Denmark and Spain. The 2017 joint declaration on telework agreed in the ESSD of the banking sector has not had any impact on sectoral collective bargaining in the five countries studied.

In Austria, the six sectoral collective agreements for the financial sector include a more or less identical passage on telework that was introduced in the 1990s. The passage is very short and

⁸ The Spanish Supreme Court had ruled that companies were not obliged by law to set up a system to verify whether workers worked overtime and whether the employer complied with working time limitations. However, the CCOO services federation (which includes financial activities) appealed to the European courts, arguing that this obligation derives not only from the Spanish legislation but also from European Law, in particular from the EU Directives on working time, and on the health and safety of workers.

only defines the main aspects that a company collective agreement on telework has to address. The following five points are mentioned: requirements for working outside the company premises; allocation of working time between work at the employer's premises and the external workplace; provision of work equipment and reimbursement of expenses; liability for specific health and safety risks resulting from telework; and conditions for ending telework.

In Denmark, sectoral social partners concluded a framework agreement on telework which is included as a standard protocol in collective agreements. The agreement explicitly excludes mobile work, that is, the tasks of sales persons and work performed at changing locations, as well as work carried out at a remote posting or during business travel. The framework agreement specifies that teleworking may only be part of the total working time, so that workers' relations to the company are maintained, both workwise and socially. In addition, the employee may request a teleworking maximum of 50% of working time, calculated over a period of 13 weeks. It is also underlined that the teleworker must have access to a workplace on the company premises (ILO, 2016). However, this provision is barely used in the sector.

In Spain, telework or similar arrangements were never regulated at sectoral level. However, interesting developments have taken place in 2019 during the bargaining rounds of the collective agreements for the commercial banking sector. During this bargaining process, trade unions have struggled to collectively regulate some of the most problematic issues associated with virtual work, namely, its negative impact on working time and work intensity. One of the trade union organisations bargaining the agreement (CCOO) has advanced the following proposals for the next stage of the agreement: the implementation of a system to record effective daily working time, thereby allowing the employees' workday to be tracked '*either inside or outside of the workplace*'; the implementation of the 'right to disconnect', by establishing clear limits to work activities outside the agreed working time; and the regulation of 'distance work' (telework) within financial companies, as set out in the Law 3/2012. The agreement is still being negotiated.

In addition, attention should be drawn to the recent agreement concluded in the Spanish savings banks subsector regarding the implementation of a records system for effective working time at company level. The agreement was concluded by trade unions UGT, CCOO, FINE (Force, Independence and Employment) and employer organisation CECA (Spanish Savings Banks Confederation). It states that in order to ensure daily records of working time, an online application shall be installed in: all the technological devices owned by the company which are made available to the employees (desktop and laptop computers, mobile phones and tablets); and any other mobile device that can be used for work purposes, with the aim of enabling every employee to record working time by themselves (Art. 1). Additionally, the agreement recognises the 'right to disconnect', and the parties are committed to addressing its implementation in the current bargaining rounds for the renewal of the national sectoral collective agreement of the savings bank subsector.

3.6 Collective bargaining at company level: good practices

Sectoral bargaining only provides a very general and limited regulation of virtual work in Austria and Denmark. In Spain, virtual work is only recently and partly regulated. Meanwhile, in Estonia and Portugal, virtual work is not regulated at all. Bearing this in mind, it is particularly relevant to analyse the role played by company collective bargaining. Of the five countries studied, only in Austria does company collective bargaining regulate virtual work, through the introduction of new virtual work arrangements enabling employees to work outside employers' facilities under more flexible conditions (alternating telework, etc.). In the remaining countries, virtual work is mainly dealt with through HRM practices, individual negotiations or informal/verbal agreements.

In this context, it has been particularly challenging to identify good practices meeting the qualitative criteria established. Indeed, there are doubts regarding the extent to which some

practices identified by country experts (notably Denmark, Estonia and Portugal) should be considered as positive examples in terms of social dialogue.

The five practices selected concern global multinational bank corporations which operate within the financial sector, offering a great range of financial products and services. All are private entities except the Portuguese company, which is a state-owned company. The five companies studied have faced technological transformation processes which are to some extent common in the financial sector (digitalisation, FinTech industry, etc.). Those transformations have produced changes in the jobs and skills that are required (an aspect discussed in Portuguese case) and have partly favoured the development of new work organisation approaches relying on flexible work arrangements. However, new work organisation approaches do not seem to apply to all the workers and departments, at least in some of the companies studied. Cases from Spain and Portugal reveal that a higher proportion of the workforce (branch offices, etc.) are still subject to more traditional work organisation styles. Technological transformation has also been behind the emergence of new business models in the financial sector which, in some cases, derive from mergers and restructuring processes (OCDE, 2018). Restructuring processes have been experienced in all the five companies studied. In Austria, the company has outsourced some services and reduced staff. In companies from Spain and Portugal, mergers (Spain only) and dramatic employment adjustments were implemented in recent years. The Spanish and Portuguese cases were influenced by both technological transformation and the economic crisis which deeply affected the sector (Rocha and De la Fuente, 2018).

Practices studied are firstly described, highlighting their contribution to improving working conditions for virtual workers and/or through virtual work. Then, the participation schemes/regulatory mechanisms put in place and the different negotiation processes are analysed. Finally, their impact on the improvement of working conditions is discussed.

Topics addressed: description of the practice

All the cases were selected because they address aspects of virtual work which are particularly significant at national-sectoral level. They also aim to favour better working conditions (particularly work-life balance), except in the case of Portugal, where the main focus was to avoid dismissals and maintain employment.

In Austria, Denmark and Estonia, the cases studied deal with a highly significant topic in the financial sector: the implementation of new work organisation principles which combine the ‘project-based office’ or ‘open office’ intended to save costs, with flexible virtual work arrangements. In Austria, the company studied has offered regular telework arrangements since the 1990s. However, only a low proportion of employees were using the organisation’s telework option. Change came when the company decided to relocate their facilities to a new office space which was set up according to the open-plan concept. This office space offered less workplaces than the bank had employees – there were workplaces for about 80% of total employee numbers. It became clear that telework and alternative virtual work arrangements needed to be taken up by a higher proportion of employees. In this context, joint discussions between employers and the works council were oriented towards implementing virtual work arrangements which satisfied the employees’ actual demands, thereby improve the attractiveness of the arrangements. Compared to previous telework arrangements, the new virtual work arrangements enabled employees to not only work remotely from home but also from alternative places, and also on occasional/flexible days (rather than on a regular basis), all depending on notification and agreement with the head of unit. Under this new arrangement, employees cannot work remotely more than one day per week. For some departments working with sensitive data, there are also limits to virtual work outside the company premises due to compliance. The main advantage of the new arrangement in terms of improved working conditions lies in its potential contribution to combining employment and family responsibilities, and attending to unexpected care needs. This is because it is the employee who

generally decides in a flexible way the day they work outside the employers' facilities, although the exact timing of virtual work has to be agreed with a superior.

In Denmark, the process and context concerning virtual work was different compared to the Austrian case. Here, the company was aware that many offices were not in use every day because of the different mobility patterns employees already had: some employees were working while travelling, others were taking training outside employers' facilities, others worked some days at home or at alternative places, etc. With regard to ICT-enabled virtual work arrangements, occasional home-based telework (without fixed days) was the most common and widespread arrangement. In this context, the company decided to measure how much office space was being used in existing buildings. In all four headquarters, it was found that a maximum of 75–80% of the office space was in use at any given time. As a result, it was deemed necessary to optimise space and save facility costs by reducing office space and moving towards a so-called 'activity-based office' which, as in the Austrian case, does not provide chairs and desks for all the workforce and encourages internal mobility (different spaces for different tasks, etc.). As opposed to the Austrian case, new virtual work arrangements were not introduced. Occasional home-based telework is still the most common arrangement, which is implemented informally, through ad-hoc communication between the employee and head of unit. This arrangement is not written in any company document (collective agreement, etc.). As in the Austrian case, the main advantage of the virtual work arrangement lies in its contribution to work-life balance.

In Estonia, virtual work was only partly driven by management strategies for activity-based offices. There was a transition towards activity-based offices and a promotion/offer of different flexible work arrangements providing space and working time flexibility. This transition was part of a broader plan launched in 2017, the so-called 'New Ways of Working'. The transformation in work organisation was mainly designed to enhance employee engagement and improve company performance, bearing in mind that the main goals were to increase productivity and the employer's attractiveness in the job market. At the same time, it also aimed to promote better working conditions, and was explicitly oriented towards fostering a better work-life balance for employees.

In Spain and Portugal, the case studies deal with different topics. The Spanish practice addresses the 'right to disconnect'. As discussed under section 3.4, debates on the 'right to disconnect' are particularly relevant in the Spanish financial sector, bearing in mind trade unions' long-standing complaints about overtime. It is also worth noting that the bank studied initiated the so-called 'flex working' scheme in 2015. A hallmark of this approach, which was unilaterally designed and implemented by management, is a set of virtual work arrangements that offer employees greater time and space flexibility, with a view to 'supporting work-life balance and improving efficiency'. However, the trade unions interviewed stated that those arrangements are mainly used by highly qualified staff from the corporation's central office. In contrast, the 'flex working' approach has barely affected management culture and policies in the branch offices. Branch office directors do not allow employees to enjoy virtual work arrangements. Although virtual work arrangements as such are not implemented in the branch offices, ICT devices (smartphones and laptops) provided by the bank are increasingly used for work purposes. In the view of trade unions, the eruption of ICT is entailing an increase in unpaid overtime. Instead of using these devices to promote a more rational organisation of working time, the branch directors mainly use them to push employees to work harder and attend to demands outside their regular working time. In this context, the discussion of the 'right to disconnect' was highly relevant to improving working conditions. The regulation of this right is oriented towards preventing overtime and excessive work intensity.

Finally, the Portuguese practice deals with the negative effects of ongoing work digitalisation processes. The case shows how the technology-obsolescence of credit workers was addressed by reconverting their roles and moving them to 'remote virtual workplaces' inside the new

employer's premises. In this case, the focus was more on avoiding dismissals than improving working conditions of virtual workers. The workers concerned were affected by the digitisation of credit concession operations and bank credit control. In light of those changes, they were relocated to new workplaces (inside employers' premises) which required simple routine cognitive tasks and the use of ICT for simple operations correcting information on the bank's credit operations, rectification of data and updates on credit holders. Workers' tasks are supervised remotely at headquarters by a line manager. In addition, a monthly supervision is done by the operations manager through a videoconference meeting with the various groups. Once a year, the supervision is done by the credit director personally visiting each group so that they do not feel lost or isolated. The supervision focuses on the final correction and data entry service delivered by the workers, who mostly work in teams in the capitals of their districts.

Participation schemes/regulatory mechanisms and negotiation processes

The schemes through which virtual work arrangements were designed and implemented differ in the five cases studied. Only in Austria, Spain and to a lesser extent Denmark, were changes introduced through genuine social dialogue mechanisms. In Estonia, HRM mechanisms were put in place, while in Portugal changes were unilaterally implemented.

The comparison of case studies from Austria, Denmark and Estonia is particularly interesting, as they show how a similar topic (new work organisation principles which combine the 'project-based office' with flexible virtual work arrangements), is addressed through different participation schemes and regulatory mechanisms. In Austria, new virtual work arrangements were regulated in a company collective agreement. The agreement was facilitated by the specific statutory framework where the works council has the right to demand collective bargaining in order to regulate organisational changes related to desk-sharing. Under this legal framework, the relocation to the new building had to be accompanied by the development of a new company agreement regulating virtual work arrangements. As pointed out by a works councillor interviewed: *'We were in the happy situation of saying: "We're moving in now. Friends, if we don't have an agreement soon, we have a problem, because we can't do without one."'* The agreement's basic principle was that in exchange for being entitled to work from home (or an alternative place), employees choosing this option would no longer have a fixed permanent workplace at the company premises, rather only for meetings and special events. Interestingly, negotiations are still active with a view to improving and continuously updating the company agreement. A works councillor stated that they are currently discussing enabling the official declaration of commuting time as working time, a development that even the works council representative would not have thought realistic not long ago. It is also expected that the maximum weekly percentage of virtual work will be adjusted in the future and will likely be increased.

Compared to Austria, the Danish case offers less powerful participatory mechanisms. In this case, the company only informed the Health and Safety Committee, and the Cooperation Committee (Danish equivalent to works council) on the new management approach associated with the transition towards activity-based offices. There was no consultation or negotiation. In this context, virtual work arrangements continue to be implemented informally, through ad-hoc communication between employees and heads of unit. This is the most common and widespread approach to virtual work in the financial sector in Denmark.

With regard to Estonia, only direct voice mechanisms driven by HRM departments were put in place. In the absence of independent employee representative structures (works councils, trade unions, etc.), the company implemented information and consultation procedures through working groups led by the HRM department. In relation to the discussion of virtual work arrangements, a specific working group was created, made up by an officer from the Human Resource department, two representatives from Risk Management and two Group Managers. This group implemented direct/individual consultation mechanisms to analyse workers' views and demands on flexible work arrangements. The main tool was an online survey mapping

employees' work arrangements and wishes. The results of the survey revealed that a substantial number of employees (79%) were already using some form of flexible work arrangements, in terms of time or space. However, only 39% were able to work from home, the main reasons being not owning a laptop or not having access to the company IT-systems. One of the main conclusions of the group was that availability of virtual work arrangements depended on the managers and the internal culture of departments. This created inequality among the employees and caused dissatisfaction. Therefore, the working group's task was to prepare the transfer to flexible working conditions for the whole organisation, so that it would be available for all employees, and the framework and rules would be known for all. In relation to this, the main agreement with the governing board was the conclusion of some general rules on flexible work principles that apply to all the company departments. However, the concrete implementation of those general rules still has to be addressed within each team, with the discussion led by the manager.

In Spain, the 'right to disconnect' was regulated in a company collective agreement. The agreement was concluded in the context of wider negotiations on working conditions harmonisation for staff incorporated following the acquisition of two banks in 2017. The 'right to disconnect' was negotiated and agreed with some of the main union representatives in the company (CCOO). However, other important trade union within the bank (UGT) did not sign the agreement. The 'right to disconnect' is defined in the agreement as *'the right for employees to not respond to emails or work-related messages outside of working hours, or during rest times, leave or holidays, except in cases of force majeure or exceptional circumstances.'* Beyond the regulation of the 'right to disconnect', in the text of the agreement, the parties commit to promoting a rational and efficient use of new technologies through the issuing and distribution of guides and recommendations for avoiding unnecessary or excessive use of emails outside normal working hours.

With regard to the Portuguese practice, it was unilaterally implemented by the bank. Trade unions were not involved at all. The participation in this programme was on an individual basis and involved around 30 workers. According to the works council members interviewed, they have monthly meetings with management, where implementation of this initiative could have been discussed. However, the company did not do so and works council members did not explicitly ask for it. As stated, social dialogue at company level is mostly exclusively focused on wages and related benefits (particularly pensions). Moreover, current relationships between works councils and management are not particularly cooperative.

Impact of the practices

The information gathered allows for a limited analysis on the impact of the transformations discussed. Some tentative conclusions can be drawn, particularly when comparing the cases of Austria, Denmark and Estonia. Comparison confirms the significance of independent/indirect participation mechanisms and collective bargaining regulation to ensure decent working conditions for virtual workers. Generally, it appears that the Austrian case offers better working conditions under a more transparent regulatory framework. For instance, compared to the Austrian company, the Danish company does not accept arrangements in which employees work outside the employers' facilities on fixed days. It also refuses to make home-based telework arrangements in order to avoid health and safety regulation. The Austrian case also offers a more convincing approach for dealing with a problem discussed in the Estonian case study, namely, the inequality in employees' access to flexible/virtual work arrangements. Rather than establishing non-binding common rules where virtual work arrangements can still be implemented according to each department's rules and managerial decisions, the Austrian case study established a transparent norm through which all workers can get access: access to virtual work in exchange for desk-sharing. In addition, it is worth noting that the regulatory approach followed in the Austrian case facilitates the introduction of new and more ambitious topics (recognising commuting as working time, etc.) in the bargaining agenda.

As far as the Spanish case is concerned, it is not possible to evaluate the impact of the new ‘right to disconnect’, principally due to the lack of available information on the evolution of working time infringements or work intensity. Although the new right generates positive expectations among the bargaining parties, two main weaknesses can be highlighted. First, trade unions are not involved in the commission in charge of evaluating the implementation of the ‘right to disconnect’. Thus, they cannot assess how it is working with a view to discussing potential adjustments and improvements aimed at properly implementing and enforcing the agreement. Second, a relevant trade union who did not sign the agreement (UGT) criticises the high degree of ambiguity or lack of clarity in the new ‘right to disconnect’. According to the UGT, it is not clearly specified what the bank means by ‘exceptional circumstances’, and this may entail problems in effectively enforcing this right. Indeed, they have recently criticised online that most of the campaigns launched by the bank (new credits, mortgages, etc.) are considered as ‘exceptional circumstances.’

With regard to the Portuguese initiative, its main impact was to avoid dismissals. In this sense, it also contributed to maintaining social peace.

Box 3. Austrian good social dialogue practice at company level

The company studied is an Austrian bank organised as a multicorporate enterprise. It is present in seven countries and with currently over 2,000 subsidiaries is one of the larger bank groups in Central and Eastern Europe. Confronted with declining profitability, the Austrian banks have started to outsource various operations inside and outside Austria, while at the same time promoting internet and video banking as an alternative to using local branches. In line with this, outsourcing and staff reduction have become major issues in the sector at both industry and individual company level.

The company had offered telework arrangements since the 1990s. However, only a low proportion of employees were using the organisation’s first telework option. Apart from special areas like IT that may have been more inclined to do telework, the bank’s corporate culture has largely remained an example of classic presenteeism and regular working hours. However, this started to change in 2016, when the company started to move the headquarters and Vienna-based premises into a new office building. The new office space was set up according to the open-plan (or open-space) concept. This means that employees no longer have fixed workplaces, rather they place their work materials, including their office laptop, into a locker each night and then each morning choose a workplace in the so-called Homebase of their department (or somewhere else if needed). Since the new office building offered less workplaces than the bank had employees (about 80%), it was no surprise but rather a necessity that the relocation to the new building was accompanied by the development of a new company agreement regulating virtual work arrangements. This is explained by the legal framework in Austria, which established that the works council (and also the employer) has the right to demand a company agreement regulating organisational changes related to desk-sharing. As stated by the works councillor interviewed: *‘We were in the happy situation of saying: “We’re moving in now. Friends, if we don’t have an agreement soon, we have a problem, because we can’t do without one.” Yes, so they were in a tight spot, right? And that was good for us, because we also had to deal with it’* (AT Works council). In this context, the works council negotiated and agreed the new virtual work arrangements to be introduced.

The basic principle was that in exchange for being entitled to work outside employers’ facilities, employees choosing this option would no longer have a fixed workplace at the company premises, rather only for meetings and special events. Bearing this in mind, the agreement defined virtual work broadly, covering arrangements where employees work in different places outside company facilities (not only the home). It established a maximum percentage of working time that may be carried out outside the company building, whether at home or elsewhere (20% of weekly working time). The agreement also established that the exact timing of virtual work has to be agreed with a superior. However, in the new office culture, the ‘burden of proof’ is supposed to have shifted from the employee having to explain why he wants to work outside the office on a particular day, to the superior having to explain why this should not be possible. The agreement on virtual work is currently in its third round of internal evaluation and has the status of a ‘temporary agreement’. The works council has so far insisted on the temporary status of the agreement with a view to continuous future adaptations according to potential new changes: *‘And we’ll probably make it temporary again, because regarding mobile work, this one I’ll keep from becoming permanent for a long time yet. Because I have the feeling, something’s still moving and*

evolving (AT Works council). For example, a potential adjustment currently under negotiation is the official declaration of commuting time as working time, a development that even the works council representative would not have thought realistic not long ago. It is also expected that the maximum weekly percentage of virtual work will be adjusted in the future and will likely be increased.

Source: Austrian fieldwork report, Haidinger, B., Papouschek, U. and Saupe, B. (2019).

4. Virtual work in the IT sector

4.1 Incidence and features of virtual work in the IT sector

IT is a complex and fragmented sector which embraces a range of occupations (developers/programmers, IT support workers, etc.) with different working conditions and mobility patterns. Most of the workers in the sector make intense use of ICT for work purposes. However, mobility or space flexibility is not a choice for all IT workers. This is particularly the case for IT support workers who ensure availability of IT services by maintaining systems and fixing incidents, whose work content reflects what some scholars have conceptualised as the ‘servitisation of the IT sector’. This expression denotes ‘*the trend towards emphasising customer-oriented service in the delivery of business IT solutions*’ (Trusson et al, 2018, p. 150). Under this sectoral segment, which accounts for a high proportion of total employment in the five countries studied, workers may carry out tasks which involve visiting client workplaces. Moreover, they develop tasks which have to be done at a certain time and/or require a certain working time availability. Thus, their job entails mobility for operational reasons (mobility which is not a choice) and also time constraints.

At the same time, the sector presents a high incidence of ‘ICT-enabled mobility’ arrangements (Eurofound and ILO, 2017).⁹ Compared to other sectors, some workforce segments of IT activities (programmers, software developers, etc.) work under more innovative forms of work organisation relying on autonomy of work, decentralised structures, and high involvement and responsibility of employees. This kind of management approach is highly compatible with virtual work arrangements providing employees with working time and space flexibility. Moreover, many of those occupations (IT programmers, etc.) do tasks which can be potentially carried out at different places (workers’ homes, co-working spaces, etc.) and ‘anytime’. However, it is worth noting that information gathered in the interviews and case studies reveal that not all tasks are truly ‘anywhere’ due to technological and security constraints. In this sense, it was found that many companies in some of the countries studied (e.g. Austria) limit the range of workplaces outside companies’ facilities to the home or remote offices. This is because IT infrastructure has to be absolutely secure and this cannot be guaranteed in public spaces.

‘ICT-enabled mobility’ arrangements appear to be relatively widespread in the sector in the five countries studied. In Austria, the IT sector was the pioneering sector in introducing forms of mobile work organisation using digital communication tools. Already in the 1990s, IT corporations started to test telework arrangements in their branches. This trend continued, and different flexible time arrangements, including teleworking and mobile work, have become the state of the art in this sector.

In Denmark, social partners stated that the prevalence of virtual work is considerable, and is mainly implemented through informal arrangements rather than ‘regular telework’ arrangements.

In Estonia, the IT sector is believed to be the forerunner of virtual work and flexible working conditions. Virtual work is informally regulated in most of the companies. At the same time, there are big companies like Telia Eesti AS (a subsidiary of one of Europe’s largest telecommunications companies), where virtual work falls within the framework of the company’s flexible working offer to employees.

In Spain, the adoption of traditional home-based telework and other flexible work arrangements is not so widespread as one could expect, according to the social partners’ assessment. Adoption mainly takes place among certain categories of workers (principally managers and very highly qualified employees), reflecting companies’ strategies to ‘attract and retain talent’.

⁹ As noted for the financial sector, data from EWCS 2015 cannot be used to estimate sectoral data at national level, given the small size of the sample.

In Portugal, social partners pointed out that virtual work is widespread, mainly through informal practices.

4.2 EU social dialogue recommendations

The issue of telework has been addressed by EU social partners in the context of the ESSD for Telecommunications, where the Uni Global trade union section of Information and Communications, Technology and Services (UNI-ICTS) is represented along with the European Telecommunications Operators' Associations (ETNO) on the employer side.

In June 2016, just fifteen years after an earlier publication of guidelines for the adoption of telework arrangements in Europe by the telecommunications companies (2001), the parties concluded a Joint Declaration on Telework in the Telecom Sector. As in the financial sector, EU social partners opted for a non-legally binding text. The declaration acknowledges the expansion of telework and mobile work arrangements, and its potential contribution to improving working conditions in the sector, particularly regarding work-life balance and motivation at work. In turn, this also has a positive impact on management strategies and performance in terms of increased productivity, less absenteeism and reduced sick leave.

On the one hand, the text builds on the EU framework agreement on telework (2002) and applies to 'in-house employees who regularly work outside company premises on the basis of a mutual agreement'. On the other hand, the term 'mobile working' is also used in the text as an alternative to telework. The text also highlights the voluntary character of telework for the employee and the employer concerned, as well as recognising that not all job positions are suitable for mobile forms of working. Therefore, the conditions and procedures for benefiting from these work arrangements should be clearly established beforehand.

In the text, the European social partners invite national affiliates to consider making a complementary collective agreement addressing specific issues related to working conditions:

- Terms and conditions: teleworkers are granted the same rights and conditions stemming from applicable legislation and collective agreements (workload, salary, career opportunities), as comparable workers at the employers' premises. Additionally, teleworkers shall be informed of any performance monitoring arrangements adopted to monitor their work.
- Frequency and reachability: the (individual) written agreement shall establish the days on which mobile work is performed, along with the periods during which the teleworker must be reachable for the employer, all in line with the company and country's rules and laws. Importantly, the agreements should respect the right of employees to disconnect and not be available outside working hours.
- Health and safety: the employer is responsible for enforcement of occupational health standards, but needs the ongoing support of teleworkers to fulfil their commitments.
- Data protection is also the employers' responsibility, and they shall inform and train employees about the relevant legislation and company procedures.
- In order to verify that health and safety, and data provisions are applied, the text incorporates the right for the employer and workers' representatives to access telework places.
- In the event of an accident in the mobile work environment, social partners recognise the risk of employees not being properly covered and recommend their members to consider the need for additional insurance coverage suited to teleworkers.
- With regard to collective rights, the same conditions apply to teleworkers for participating in and standing for election to representative bodies, as comparable workers at the

employers' premises. Also, these bodies shall be informed of and consulted on the introduction of mobile work arrangements.

In 2017, social partners signed a new Joint Declaration on ICT-based mobile work, which shows a follow-up on the declaration agreed in 2016.

4.3 Industrial relations context at national sectoral level

Industrial relations patterns present important differences across the five countries studied. Moreover, sectoral industrial relations models present different features compared to national industrial relations model in some countries (Denmark and to a lesser extent Portugal).

Industrial relations in the IT sector in Austria and Spain are characterised by the prevalence of national sectoral levels of bargaining ensuring high coverage rates.

In Denmark, the IT sector is quite atypical within national industrial relations models. Sectoral collective bargaining is very fragmented at sub-sectoral level, and collective bargaining coverage rates and social partners' organisational densities are much lower than national average. This landscape is partly explained by the professional associations of university graduates, such as the Danish Society of Engineers (IDA), which do not make collective agreements in the private sector due to an old tradition. Besides, many of the union members are covered by the collective agreements in the finance sector.

In the case of Portugal, coverage rates in the IT sector are significantly lower than the national average (65% and 88% respectively). This is mostly due to the fragmentation of sectoral bargaining conducted between different employers and trade union organisations.

As far as Estonia is concerned, the sectoral industrial relations landscape is in line with national patterns. Collective bargaining is fully decentralised and collective bargaining coverage rates are very low (around 16%), as is trade union density. In this context, the main sectoral employer organisation, the Estonian Association of Information Technology and Telecommunications (ITL), currently rejects getting involved in bargaining rounds at sectoral level.

4.4 Social partner debates and discourses on virtual work

Sectoral social partners in all the countries except Estonia have bargained virtual work arrangements in the case of mobility and/or working time flexibility as a choice (which can be constrained by certain circumstances such as time pressure). This is because a relatively high proportion of workers in this sector are requesting or using these arrangements. Compared to the financial sector, there is a less clear-cut cross-country division in the topics discussed by social partners during the interviews. At the same time, some common problems discussed in the interviews seem to be particularly mediated by some national institutional factors.

Overall, **trade unions have a more negative discourse than employer organisations, tending to stress some of the drawbacks identified in the literature.** It is worth noting that the main concerns are related to more flexible and sporadic forms of virtual work than regular telework (casual telework, alternate telework, etc.). In relation to those forms of virtual work, the problems of working time and work intensity were highlighted by trade unions in most of the countries studied (Austria, Denmark, Spain and Portugal). Several trade unionists interviewed connected overtime and work intensity to the problem of 'self-exploitation', which generally affects highly qualified employees working within autonomous labour processes. Some scholars have conceptualised this problem as the 'paradox of autonomy': the perception of higher autonomy in virtual work (both in terms of time and place) goes hand in hand with higher intensity of work and overtime (Boell, et al, 2016).

Overtime and work intensity in the sector also seem to be explained due to some institutional/national factors. In Spain and Portugal, fears and criticisms of work intensity

appear to be related to the high degree of informality around virtual work, which is related to trade unions' difficulties in regulating this work through company collective bargaining, and enforcing working time regulation when workers are geographically dispersed. In this context, a Spanish trade unionist interviewed even pointed out that telework or similar arrangements are in many cases self-defeating because when workers develop their tasks from home or alternative workplaces, they feel more pressure to take on more work and to meet targets in exchange for the flexibility that they have been granted by management. In Austria, the problem of overtime was connected to the use of an 'all-in employment contract', which is particularly widespread in this sector. Under this contract, payment for extra work or overtime is covered by a lump sum included in the negotiated salary, which covers any and all additional performance. Some years ago, the trade union white-collar Union of Salaried Employees, Graphical Workers and Journalists (GPA-djp) gathered evidence that these contracts were blurring the boundaries between work and free time. Accordingly, they argued to make these contracts only available for executives (Allinger, 2013).

To counteract the problems of work intensity and overtime linked to virtual work, trade unions demand: mechanisms and procedures to accurately record working time (Austria and Spain); the recognition of the 'right to disconnect' (Spain and Denmark); and new leadership skills for managers aimed at ensuring a clearer balance of expectations between employees' work and company objectives (Denmark).

In Estonia, the main sectoral trade union approached recognised some of the problems generally discussed in relation to virtual work, but also pointed to some advantages. These were related to the potential it may bring for: employing disabled people and people living outside the city centres where most of the ICT companies are based; and transforming self-employment relationships into labour contracts, where companies sometimes rely on hiring employees for specific projects.

As far as the employer organisations are concerned, they mostly perceive advantages. As discussed for the financial sector in some countries, these advantages particularly relate to the employer's opportunity to save facility costs. Reflecting this, the transition towards desk-sharing or similar work organisation forms is happening Austria, Denmark in several big IT companies in Spain and Estonia.

However, the generally favourable employer position towards desk-sharing and virtual work is not shared by middle managers and small and medium enterprises (SMEs) in some countries such as Austria. According to Austrian sectoral employer organisations, some middle managers show resistance to virtual work as they are more interested in maintaining direct and face-to-face communications with their employees. This position is at odds with executive board preferences for encouraging virtual work as part of the transition towards work organisation approaches relying on project-based offices. An Austrian employer organisation also stated that SMEs in the IT sector are restricting virtual work practices because they are perceived as reducing bonds and loyalty of employees towards employers. This occurs in a context characterised by high job rotation and shortage of some professionals. To combat those resistances, the chamber of commerce has elaborated a brochure targeted at small and medium companies, which emphasises the advantages of 'Bring your own device' policies such as saving equipment costs and also reaching the employees outside their working time. In other countries (Denmark), employers also pointed to different challenges related to the new skills required for virtual work (more self-discipline, self-management skills, etc.).

Finally, it is worth paying attention to those debates related to 'mobility for operational reasons', which affect those occupations such as IT support workers, who carry out tasks that entail intense use of ICT, visiting client workplaces and/or specific time availability (for emergency repair and IT support, etc.). **These work arrangements appear to be very conflictual in Spain.** According to trade unions approached (sectoral federations of CCOO and

UGT) many ICT companies providing 24/7 services do so in a way that allow them to circumvent statutory regulations on working time. According to the Workers Statute (Art. 36), every company operating 24 hours a day should organise its activity through working shifts. Work shifts can be carried out at company premises, at client facilities and even at employees' homes. In the case of employees' homes, the legal provisions on telework shall apply. However, it is common practice that companies require their workers to be available (by phone or email) beyond their agreed working schedule in case there is any request by a client company regarding the operation of the service. Moreover, there is no collective regulation on the issue of 'availability' or 'on-call work' in the sector. Neither is it specified in the employment contracts. Ultimately, it is up to the individual companies to decide how to compensate for this extra working time on the basis of individual bargaining with the employee. As pointed out by a trade unionist, *'even in the same company, there may be some people that are not paid at all, others may be compensated with time off, while others get paid for it'* (CCOO). For the employer organisation, further regulation cannot limit the flexibility required for the 24/7 services provided by many firms in the ICT consulting sector. An employer organisation approached even criticised legislation that recently came into force (May 2019), which obliges companies to guarantee daily records of working time. The obligation requires records of both the beginning and the end of the working day, and this information shall be recorded individually for every worker. While many companies are still considering how to effectively implement this obligation, an employer organisation approached raised some doubts about its effective implementation in the case of mobile employees, as they are often working at client premises on the basis of performance-related targets and are not subject to particular working schedules.

In other countries (notably Austria and Denmark), mobility for operational reasons has been successfully regulated through sectoral collective bargaining (see next section below) and is not a conflictual topic.

4.5 Sectoral collective bargaining

The 2016 Declaration on Telework agreed in the ESSD of the IT sector has not had any impact on sectoral collective bargaining in the five countries studied.

Sectoral collective agreements have regulated 'ICT-enabled' virtual work arrangements through traditional telework provisions in Austria, Denmark and Portugal. Thus, collective agreements are not addressing some of the recent challenges brought by ICT and more flexible virtual work arrangements (casual telework, etc.) discussed in the previous section. In Austria, social partners acknowledged that further and detailed regulation takes (or should take) place at company level (see 4.6 section). In Spain, social partners negotiated the implementation of the EU framework agreement of telework (2002) in the last bargaining round, but they could not reach an agreement. In Estonia, ICT-enabled virtual work arrangements are only negotiated on an individual basis or implemented informally, despite trade union attempts to regulate them through (company) collective bargaining.

In Austria, sectoral bargaining in the IT sector provides one of the most comprehensive telework regulations. The agreement established (Article 9) that telework is voluntary and based on a written agreement between the employer and the employee. It also establishes that teleworkers are entitled to the same rights and opportunities granted by legislation and company rules/policies, as comparable workers at the employers' premises. Regarding working time, the agreement specifies that the distribution of working hours between the company and the teleworkers' home should be set out in a written agreement, and that all the working hours exceeding the prevailing normal working hours must be previously notified by the employer in order to be recognised as such, regardless of the workplace location. Concerning the operational costs stemming from the adoption of this work arrangement, the agreement states that all the necessary computing and communication equipment for the telework place outside the employers' premises shall be borne by the employer. Finally, the agreement establishes the right

of the works council to be informed about all employed teleworkers working outside the employers' premises. The works council also has the right to access the electronic communication equipment. The works council shall be reimbursed for incurring costs in connection with the extraordinary support of teleworkers. The collective agreement also includes a model working contract (Arbeitsvertrag) for telework between employee and employer.

In Denmark, the EU social partners' framework agreement on telework from 2002 forms part of the main collective agreements in the sector. In most cases, it is attached as a protocol to the main agreement. Since then, no other provisions have been agreed or discussed.

In Portugal, the IT sector was the first to address virtual work in a sectoral collective agreement. The sectoral agreement, republished in March 2019, included developed regulations regarding virtual work. In fact, compared with the existing labour law, the agreement provides a more detailed regulation of working time, which establishes, among other issues, that the teleworker's daily schedule cannot be higher than that practiced in the company and that the provision of additional work is not allowed unless the respective conditions of execution are previously and expressly agreed with the employer. The agreement also extends the experimental period of teleworking from 30 to 90 days and gives 15 days to cancel the contract. It also clarifies the duties of the employee in terms of not disclosing any information, data, access, passwords, hardware, software or anything else that could impact the interests of the employer. Finally, it recognises teleworkers have the same rights to collective representation as comparable workers in the employers' premises.

In Spain, trade unions made the most significant attempt to regulate virtual work arrangements in the sector during the bargaining rounds of the last national sectoral collective agreement in 2017. The trade union proposal was to include the provisions of the 2002 EU framework agreement on telework with a view to fostering the adoption of telework arrangements at company level. However, this proposal was finally abandoned due to refusals from employers' representatives and in order to ease agreements on more conflictive issues at stake in the bargaining agenda, namely the adoption of the new professional classification system. The parties still differ in their approach to both the regulation of many aspects of virtual work, as well as the bargaining level at which these issues should be dealt with.

Finally, it is worth analysing how virtual work arrangements based on 'mobility for operational reasons' are collectively regulated in the sector. From the countries studied, **only Austria and Denmark have regulated on-call work through sectoral collective bargaining provisions.**

In Austria, collective agreements defined on-call duty as encompassing those situations when the employee is available outside normal working hours in order to start work immediately upon request. It then defines the maximum number of on-call days per month/year (10 on-call standbys are permitted per month totalling no more than 168 hours) and the relevant compensation.

In Denmark, agreements regulating working conditions of IT workers are found in different sectors. Indeed, the most comprehensive agreement regarding on-call duty for IT workers is the agreement in the financial sector that employs a substantial number of IT experts at a high level, who are in charge of maintaining online banking systems, among other matters. In this agreement, on-call duty for IT workers is understood as working hours outside the regular/normal schedule, within a specified period, where the employee is available to answer enquiries and, if needed, can be called in to perform work assignments at the clients' company. The agreement sets the maximum number of on-call days on a yearly basis (40 days a year at most, subject to a maximum of 480 hours a year for each individual employee). It also establishes the implementation framework, specifying that notice for an on-call duty must be given as early as possible and at least 24 hours beforehand, and that on-call duties must be distributed equally among the individual employees wherever possible. If these specifications

are not met, the employee can reject the on-call duty. Bearing this general framework in mind, it is mostly up to the local social partners to agree on terms related to on-call work outside the premises of the company. Similar agreements regulating on-call duty for IT workers are found in the commercial sector and in the computer-programming sector, but they are less developed and mostly refer to the local level for negotiating 'decent' on-call duty agreements.

4.6 Collective bargaining at company level: good practices

The role played by company collective bargaining in the regulation of virtual work greatly varies across the countries studied. In Austria, bargaining at the company level implements more detailed regulations on arrangements for both ICT-enabled mobility and mobility for operational reasons (on-call work). However, attention should be drawn to the fact that not many companies explicitly regulate telework in company agreements, since the coverage of works councils is relatively low in the IT industry. Social partners estimate that less than 50% of all IT employees covered by the sectoral collective agreement work in companies with works councils and therefore company agreements. In the majority of SMEs, agreements are made between employee and employer on an individual basis.

In Denmark, company level agreements mainly implement more detailed regulation for on-call work. In contrast, ICT-enabled mobility is mostly discussed individually. As in Austria, company collective bargaining coverage is low. In Denmark, this is mainly because academic staff are affiliated to trade union federations (such as IDA), which are themselves members of a cross-sectoral trade union Akademikerne. Akademikerne accounts for a high proportion of the total workforce in the sector and they are not covered by company agreements.

In Spain, Estonia and Portugal, 'voluntary' virtual work arrangements and on-call work arrangements are mainly negotiated on an individual basis or implemented informally.

In this highly differentiated landscape showing diverse approaches to the collective regulation of virtual work, the study has found interesting initiatives which reflect, in each country, innovative social dialogue experiences especially when taking into account the national background for each country and the different starting points for each sector in each country.

The five cases selected are companies specialising in the provision of IT activities and related consulting services. They all are big companies employing more than 1,000 workers. All the companies selected (except the Danish enterprises) are multinational companies which operate in more than one country. Regarding workforce characteristics, the five companies employ mainly highly qualified staff. Moreover, they all follow work organisation principles relying on work autonomy and desk-sharing principles (although the latter does not apply to the Portuguese case).

As carried out for the financial sector, the practices studied are firstly described, highlighting their contribution to improved working conditions for virtual workers and/or through virtual work. Then, the participation schemes/regulatory mechanisms and the different negotiation processes are described. Finally, their impact on the improvement of working conditions is discussed.

Topics addressed: description of the practice

All selected cases address aspects of virtual work which are particularly significant at national-sectoral level. Overall, they can be categorised as good practices in terms of implementing virtual work arrangements which balance the needs and objectives of the companies with worker demands for better working conditions. Cases from Austria, Denmark, Estonia and Portugal deal with 'ICT-enabled virtual work arrangements', while the Spanish case addresses 'mobility for operational reasons' in the form of on-call work.

The case of Austria focuses on a company which regulated regular telework in the 1990s through a company collective agreement, establishing similar rights and obligations as those

considered in the EU framework agreement (voluntary principle, need for written agreement, employer responsibility concerning health and safety, equipment costs, etc.). However, ICT evolution, the company's progressive transition towards desk-sharing, and new employer demands and preferences, have fostered the introduction of new and more flexible virtual work arrangements. Alongside regular telework, the company regulated in a collective agreement concluded in 2009, new 'ICT-enabled' virtual work arrangements. The new arrangements allow employees to work from home on occasional fixed days, or on certain flexible days chosen by the employee, depending on prior agreement from the head of unit. Alternative workplaces beyond the company's premises are limited to employee's homes due to data security reasons. Currently, the vast majority of employees work under so-called 'alternate telework' (alternierende Telearbeit), which enable employees to work at home certain flexible days. As opposed to regular telework, this arrangement does not need to be formalised through a contract or written agreement. Regulation of new virtual work arrangements ensures decent working conditions for virtual workers for several reasons. First, overtime is prevented by the employee obligation to record working time and location of work, and by establishing a maximum home working time per day (10 hours). Second, it does not entail additional costs for employees since the equipment is owned and maintained by the company, and energy and internet costs are reimbursed with a monthly lump sum. Third, regulation also contributes to better health and safety enforcement for virtual workers, because it allows the labour inspectorate to inspect the 'home office' working place (where this is permitted by law). However, according to study informants, the labour inspectorate does not have this permission yet.

The Danish case analyses a company which has offered diverse flexible virtual work arrangements for years. All employees, from the directors to the IT assistants, have the possibility to work from home when they wish and there are no direct obstacles for staying at home as long as it is convenient, for example, except in the case of an important meeting. The most common arrangement is 'occasional home-based telework'. Indeed, most of the employees work under this arrangement in the company, working from home 4–5 days a month on average. In addition, there are employees whose work requires 'mobility for operational reasons' so they have to work at different branch offices (for work meetings, etc.) and at client premises. Manager and employee representatives interviewed could not even specify the date when ICT-enabled virtual work arrangements were implemented, since they are such an integral part of their work organisation. Here, the main goal of ICT-enabled virtual work arrangements has been to facilitate employee work-life balance.

As far as Estonia is concerned, the practice selected combines open office design and different flexible arrangements which provide employees with space and working time flexibility. Virtual work arrangements are not specifically defined in any company document (agreement, internal rules, etc.). Rather, they are based on each department's internal agreements and rules. Overall, virtual work arrangements allow workers to work remotely from home and from alternative locations, including branch offices that the company has all over Estonia, with different degrees of working time flexibility. This is connected to a managerial approach which gives workers considerable freedom to choose how and where they work. In this framework, the employee's personal goals and tasks are clearly defined, and where and when these are carried out, is not so relevant. The primary goal of these work organisation principles is to enhance productivity by fostering employees' motivation and satisfaction. To that end, the main advantage of such work arrangements is the guarantee of more freedom for employees to decide when and where to work, which can contribute to improving their work-life balance. In addition, the employer also aims to save facility costs, since the company now offers less workplaces (desk, chairs, etc.) than the company has employees.

With regard to Portugal, the case study analyses new company rules regulating rights and duties associated with the use of ICTs for employees carrying out ICT-enabled virtual work. These rules establish a more secure and transparent framework for the high proportion of employees

who carry out virtual work. In this sense, it is worth noting that, similar to the Estonian case, virtual work arrangements are not specifically defined in any company document, being implemented through informal negotiations between employees and line managers/heads of unit. Only in 2017, an explicit so-called ‘distance work’ arrangement’ (trabalho à distância) was introduced within a broader work-life balance programme. This arrangement is limited to employees with care responsibilities and may not exceed 15 business days per year. The most important aspect of the rules for improving working conditions of virtual workers is that they limit company digital control and surveillance. Rules prohibit the company from monitoring employees’ internet access and prohibit any performance assessment which takes into consideration internet usage.

Finally, the Spanish case deals with a highly conflictual topic: the regulation of IT support on-call work. In the company studied, work organisation practices are organised around projects and services. Projects are built on specific client demands that require the design, development and implementation of ICT solutions. Services are provided to client companies on a long-term basis (such as the network maintenance for large companies and public entities) and may require the employees’ presence at client facilities on a regular basis. The provision of IT services often requires the presence of IT consultants on client premises on a regular basis and permanent availability in order to deal with incidents that may arise at any time. Regulations set in the last company agreement establish different compensation mechanisms for the employees that voluntarily agree to be available during ‘on-call time’, during which the employee needs to be reachable by the company in order to intervene in the event of any incident. While some of these incidences may require the employee to go to the client’s facilities, most of the cases can be solved remotely from home. On-call employees are therefore compensated for two distinct concepts: first, an ‘availability’ pay supplement, which varies depending on the days of the week (higher for weekends), and the ‘intervention hours’, which correspond to the effective working time that has been employed in attending to the incidents. Intervention hours are considered as extra working time that can be compensated either economically or with an equivalent time off, or even with a mix of time and pay. Intervention hours are paid at 1.75 price/hour of normal weekly working hours, 1.9 on weekends and 2.5 on special days such as Christmas or New Year’s Eve.

Participation schemes/regulatory mechanisms put in place and negotiation processes

The schemes through which virtual work arrangements were designed and implemented differ in the five cases studied. From the cases studied which deal with ‘ICT-enabled virtual work arrangements’ (Austria, Denmark, Estonia and Portugal), only Austria offers an example of joint regulation through company collective bargaining. In the Portuguese case, there was a consultation process which was useful in terms of modifying the initial employer proposal, which was assessed by company trade unions and works council as harmful for employees’ interests. The cases from Denmark and Estonia did not rely on social dialogue mechanisms.

In the case of Austria, the company collective agreement had already regulated regular telework in the 1990s, being one of the pioneers of telework in this country. Although the order to introduce home-based telework came from the US headquarters, it was jointly designed and implemented in cooperation with works councils. At the beginning, the project was regarded critically, especially by local management and the works council. However, balanced and transparent norms, alongside trainings for superiors and employees about how to handle telework, removed the initial resistance. In this context, there was not any discussion or conflict when the company decided to implement new virtual work arrangements, and the only alternative contemplated was the decision-making approach (joint negotiation and collective bargaining were suggested instead). Virtual work arrangements are not established as an employee’s right. However, the agreement established that in exchange for employees voluntarily accepting desk-sharing, they obtained the right to work at home.

The Danish case illustrates the most common sectoral approach to dealing with ‘ICT-enabled virtual work arrangements’, which relies on informal negotiation and communication between individual employees and line-managers. Employer and employee representatives interviewed pointed out that company social dialogue provides room for working time flexibility and, accordingly, virtual work arrangements. However, it does not regulate any concrete arrangements or specify alternative workplaces outside company facilities. Interviewees stated that the most important regulation of virtual work is ‘freedom with responsibility’. This expression means self-regulation under no particular managerial constraints. Trust between the two sides of industry (employers and employees) is a key factor. Company trade unions accept this approach and have not considered addressing the topic through company collective bargaining.

Similar to the Danish case, the company studied in Estonia has not relied on social dialogue mechanisms to implement virtual work arrangements, even if this company has trade union representatives and a works council, which makes it an exception within the Estonian industrial relations context. Virtual work arrangements are implemented informally, being based on each department’s internal agreements and rules. Interestingly, the company has negotiated working time flexibility measures with the labour inspectorate. The Estonian labour inspectorate has given formal warning to the company arguing that their internal rules and regulations are not in accordance with the legislation. For example, it has been demanded that a workday must be expressed in terms of specific times of day – what time it starts and what time it ends. They argued that it is insufficient to state that the average working time per week is 40 hours. A further warning demanded that a specific time should be introduced for lunchtime. Company managers argued that ‘outdated legislation’ is challenging their attempts to offer flexible working conditions.

As far as the Portuguese case is concerned, ICT rules were discussed in a long process of social dialogue which lasted almost one year. The dialogue included both the works councils and trade union delegates in the company. They were invited to comment and make suggestions on the internal documents being prepared by the management and the human resources department of the company in 2018. Consultation was mainly focused on topics related to the organisation of data, use of information to account for individual productivity and professional qualifications for ICT. The most interesting lesson of this process is that workers’ representatives could modify the initial employer proposal in relation to digital surveillance. The company wanted to introduce procedures aiming to monitor employees’ internet access. They also contemplated monitoring employees’ internet access as an indicator of employees’ performance and productivity. In the end, the company was forced to eliminate this proposal thanks to trade union and works council pressure and arguments.

Finally, the Spanish case is particularly interesting due to being the only company in the Spanish IT sector which has regulated on-call work through collective bargaining. This outcome is understood by paying attention to the bargaining processes associated with the mergers and acquisitions that the company implemented in recent years. In this period, on-call regulation was introduced in the framework of a merger process. The merger concerned an IT company within a car manufacturing group, which had already regulated on-call work in its company collective agreement. In the merger process, trade unions from the different companies negotiated the conclusion of a new company agreement to overcome regulatory fragmentation of working conditions stemming from the application of different sectoral and company collective agreements. That is, the ‘harmonisation agreement’ included regulation of on-call work similar to that in force in the acquired company. The trade unionists interviewed stressed that without this merger it could have been difficult to regulate on-call work in the company. When asked about the different (and better) regulation that IT workers had within the car manufacturing company, they stressed the different culture and attitudes towards collective

action and unionism that exist in the manufacturing sector compared to IT, where in the latter more individualised employment relationships prevail.

Impact of the practices

The information gathered allows for a limited analysis on the impact of the regulation discussed in terms of the improvement of working conditions.

When comparing cases from Austria, Denmark and Estonia, which deal with the implementation of flexible virtual work arrangements through different participation schemes and regulatory mechanisms, limited conclusions can be drawn. Evaluations or assessments on the impact of virtual work on working conditions were not carried out in any of the companies studied. Generally, the employer and employee representatives interviewed from the three companies assessed existing working conditions positively. In some cases (Austria), works council members offered a more critical perspective which, in line with sectoral trade union discourse, warned against the problem of self-exploitation through virtual work. Thus, even though the company has actively regulated this aspect (obligation to record working time, etc.), fear of this problem still persists in a context of demanding work objectives and highly autonomous working processes. In this sense, a common argument among the three cases was that: the different impacts on working conditions is not only conditioned by existing regulation, but also determined by different management and labour process factors.

With regard to the Portuguese case, the effects or impacts cannot be evaluated because the case deals with a preventive action: the monitoring of employees' internet access was prohibited, as was its use as an indicator for employees' performance.

Finally, the Spanish case clearly illustrates how company collective bargaining regulation indeed improves the working conditions of IT workers subject to on-call work. Compared to the general sectoral working conditions of this workforce described by sectoral trade unions, IT support workers from this company work under a more transparent and safe framework. It also establishes better working conditions which ensure fair compensation for on-call work and restrict employers' discretion in the application of working time flexibility (availability, etc.).

Box 4. Portuguese good social dialogue practice at company level

The company studied is the biggest energy utility in Portugal, with 11,631 workers and 10 million clients around the world. It is also the biggest conglomerate in Portugal, usually taken into consideration in the Portuguese IT sector as there is optical fibre in their high and medium tension aerial cables. In 2014, the company had 6,700 workers in Portugal.

The case addressed the development of guidelines and regulations to deal with ICTs. The main motivation for producing these internal rules for virtual work was the systematic introduction of new technology and the threats virtual work can present to the company. The use of ICT requires responsibility, access security and prevention of attacks. There needs to be clear rules to prevent damage to the company and to the clients.

During almost one year, there was a long process of social dialogue in the company about the rules for using ICTs. The dialogue included both the works councils and trade union delegates in the company. They were invited to comment and make suggestions to the internal documents being prepared by the management and the human resources department of the company in 2018. The workers' representatives were particularly keen to discuss topics related to the organisation of data, use of information to monitor individual productivity and professional qualifications for ICT.

The works councils and trade union delegates were able to lead the company towards changing the initial draft ICT rules. In particular, they contested the 'generic control and monitoring of internet access', in terms of the weak link between productivity and internet usage.

Thus, the monitoring of internet access was avoided, and the analysis of individual worker productivity was not based on the quality of internet time.

Source: Portuguese fieldwork report, Boavida, N. and Moniz, A. (2019).

5. Virtual work in the home healthcare sector

5.1 Incidence and features of virtual work in the home healthcare sector

Home healthcare is a sector where mobility is essential for the workers' main tasks. Although most of the sectoral workers are 'mobile for operational reasons', the 'virtualisation' or 'digitalisation' of home health services is a relatively recent phenomenon in comparison to other industries. This may be the reason for the limited attention devoted to the impact of digitalisation on these types of services (Peña Casas et al, 2018).

However, the sector has progressively adopted different digital tools and mobile devices which are increasingly used by home-care assistants and nurses. The literature describes how ICT is used by mobile home-care workers, principally for communication purposes, centralisation of information and improving management monitoring of working time and workers' performance (Lindberg et al, 2017; Peña Casas et al, 2018; la Cour et al, 2016; Rosengren, 2018). Technological innovation debates also refer to the so-called 'telehealth' service, which is defined as remote patient monitoring consisting of two integrated parts. First, the technological dimension which gathers patient data sent by telephone, email or videoconference. Second, the care delivery processes where technological intervention is complemented by nurses' case management or medical support through call centre assistance (Sharma and Clarke, 2014). Compared to ICT mobile devices, telehealth can reduce mobility among home health workers or even replace part of their work by 'stationary jobs' in call centres.

In line with literature findings, the study has found that sectoral workers have progressively adopted several ICT devices in all the countries studied, although to a lesser extent in Estonia. In all the countries, home-care workers started using personal digital assistants (PDAs), which were then replaced by tablets, smartphones or laptops, which are used in combination with different systems and apps for storage and management of data. ICT is mainly used in the five countries studied for: internal (work-team) communication purposes; working time management, registration and estimation; electronic documentation/registration of working activities; and work confirmation by clients (this aims to demonstrate that work has been done in accordance with the service the elderly person is entitled to). Telehealth is reported in some countries, whether through 'screen visit' videoconferences which replace physical visits (Denmark) or by means of call centre assistance (Portugal). In Denmark, social partners stated that telehealth (screen visits) had reduced the number of visits to patients and care receivers.

The Estonian situation is interesting because, although this is one of the most digitalised countries, technological transformation has barely affected the home health sector. According to the sectoral trade union approached, the impact of ICT and digitalisation could be much higher than it currently is. The current state of the art is that the main tools used by the home healthcare specialists (nurses) are phones and fixed computers. While there are information systems and databases available for their work, some nurses still use paper and pen to fill in relevant paperwork during home visits due to a lack of laptops or tablets. There have been only a few projects related to remote monitoring of patients or similar solutions. It seems that technological changes have only affected a very low proportion of private sector organisations, which in the Estonian context refers to those organisations independent of public funds.

5.2 EU social dialogue recommendations

EU level social partners have not specifically addressed this topic within the ESSD Committee for hospitals and healthcare. Social partners EPSU (European Public Service Union) and HOSPEEM (European Hospital and Healthcare Employers' Association) have only superficially addressed this topic. For instance, they have stressed the need to update training on scientific and educational developments that reflect current advancements in nursing, including eHealth and ICT developments (EPSU-HOSPEEM, 2011)

5.3 Industrial relations context at national sectoral level

The collective regulation of employment relations in the home-care services sector tends to differ depending on the role played by public and private providers. However, overall, it is characterised by a general predominance of national sectoral collective bargaining and high coverage rates, even in the most decentralised countries, such as in Estonia.

In Denmark, collective bargaining coverage is close to 100% because it is a public sector area and all the municipalities are members of the public sector organisation signing the national sectoral collective agreement.

In Austria, Estonia, Spain and Portugal, the role of the private sector is much more prominent compared to Denmark, either through non-profit organisations (Austria and Portugal) or different formulas of public-private partnerships (Estonia). In Spain, the role of the private sector in the provision of home-care services through different formulas of public-private partnerships has been on the rise due to the impact of retrenchment measures adopted by successive governments under the pressure of austerity policies. In this context, social economy organisations (cooperatives, non-profit organisations) and small companies that were traditionally active in the sector become displaced by competition from large companies in sectors such as construction and cleaning attracted by new business opportunities (Eurofound, 2015). In these four countries, sectoral collective bargaining is predominant, and covers most of the companies and workers. In Austria, national sectoral agreements reach up to 90–100% of total workforce. Moreover, company collective bargaining complements the sectoral bargaining level. In Spain, the national sectoral collective agreement covers all the companies providing care services to dependent people in different institutions. In addition, specific sectoral collective agreements on homecare services are also in force at regional level. In Estonia, the sectoral collective agreement currently in force was concluded in 2018, and was subsequently extended to all employers in the sector who met the following conditions: providing healthcare services by the activity license issued by the Estonian Health Board; and whose activities are financed by a financing agreement with the Estonian Health Insurance Fund or from the state budget. In Portugal, sectoral bargaining coverage is estimated at 77%.

5.4 Social partner debates and discourses on virtual work

In line with previous studies (Peña Casas et al, 2018), information provided by sectoral social partners reveal that the introduction of ICT in the home healthcare sector has not had a great impact on the core tasks of the job. However, ICT developments described under section 5.1 do seem to have impacted other aspects of work organisation which, as social partners discussed in the interviews, are producing both positive and negative effects on working conditions.

Relevant cross-country differences are found regarding the social partners' discourses on ICT changes, which are partly explained by the different roles played by collective bargaining in the regulation of technological transformation. It appears that social partners' perceptions of the impact of digitalisation on working conditions are much more polarised in Spain and Portugal, where social partners have not bargained any aspect of the recent technological transformations affecting the sector. In this framework, the Portuguese Union of Superior Technicians in Diagnostics and Therapy (SINDITE) have argued that employers are mainly using technological transformation to increase work intensity. In contrast, Austrian and Danish trade unions have an overall positive view on the effects of digitalisation and technological transformation (Denmark) or, at least, find that it has not deeply impacted work organisation and working conditions (Austria). This occurs in a context where social partners have jointly regulated or implemented some elements related to digital transformation. Finally, the Estonian trade union approached has a very optimistic narrative on the potential effects that ICT may bring in a sectoral context where digitalisation is an early stage.

Spain and Portugal: polarised debate within unregulated technological transformation processes

In Spain and Portugal, the study identifies that one of the main contested areas between trade unions and employer organisations relates to employers' use of new digital options for worker-surveillance, particularly for estimating working time. Trade unions in both countries stressed that this is currently one of the main challenges brought by ICT, as in the way it is designed and implemented by employers it is leading to an increase in work intensification. While trade unions agree in both countries that it is clearly a matter for collective bargaining, they have not been able to introduce the topic into the bargaining agenda. In one Spanish region, namely Catalonia, the conflict on estimating commuting time led a trade union to appeal to the Labour Court, which is a bipartite body in charge of Extrajudicial Resolution of Labour Conflicts. In Catalonia, the sectoral collective agreement establishes that commuting times between two services, along with the time spent in coordination and break times, shall be considered as effective working time and be rewarded accordingly. However, the main reference for establishing the time required to reach the care recipient's home from a previous service is the Google Maps application. Trade unions in Catalonia complain extensively about the lack of accuracy of the system, since it does not take into account other factors that may result in extra time, such as the unevenness of the streets in many city areas and the effect of cumulative fatigue in home-care assistants. Bearing this in mind, trade unions appealed to the Labour Court and, as a result of the arbitration award, secured that an extra 11% of time should be added to the working time estimated by the web-based service. Nevertheless, this was perceived as a compromise solution since the companies in the sector did not agree to undertake more comprehensive research on commuting times. Union representatives see a clear link between working time estimation through the Google Maps application and the intensification of work pace, as shown in the following quote from a fieldwork interview.

Previously, we used to carry out four services in a morning, now they give you up to six services in one morning and we get exhausted [...] We have detected that many mates get so stressed by commuting times that they do not take breaks to ensure they meet the daily scheduled services.

(Catalan CCOO representatives)

In Spain and Portugal, trade unions also argue that work intensity and unrecognised overtime also partly relate to employers using new ICTs to register working time and document working activities 'anywhere'. In Spain, trade unions stated that care assistants do not have a specific time regulated in their contracts for the documentation/registration of their working activities. For the employers, these records are very important because they are used to demonstrate compliance with the terms of their contracts with local administrations. Since workers cannot do those reporting tasks at patients' homes, they tend to do it 'on the move', on the way from home to home. Some trade unions (CCOO) argue that this is a stressful situation for most care workers and puts an additional pressure on tight commuting times. In Portugal, documentation/registration work is often done from workers' homes outside their regular working time. To prevent this, SINDITE suggests that extra time should be included at the end of each shift to properly register working times and allow for an adequate transfer of information to the worker on the next shift.

Interestingly, some Spanish trade unionists interviewed (CCOO) also linked ICT developments to a decrease in their capacity to control some aspects of the work process. This is related to email reporting replacing coordination meetings where care assistants used to discuss changes in work planning with the heads of unit. The email approach entails that work planning may be changed without any participation by the employee.

Other concerns raised by trade unions in these two countries are about training (Portugal) and the emergence of platform work in the sector (Spain). In Portugal, trade unions note that the introduction of ICT increases skills requirements. However, skills upgrades are rarely contemplated by the employers. In Spain, trade unions stated that a major challenge to regulation of working conditions in the sector relates to the emergence of online platforms acting as direct intermediaries between users and care professionals (often self-employed), where trade unions have little influence to prevent wage and social dumping.

In contrast, employer organisations (particularly in Spain) stress the contribution of ICT to improving the quality of home-care services. According to Spanish sectoral employers, ICT gives security not only to the families and to the medical teams (because they can all see how a patient/user has been treated), but also to the employees, since they can document their performance throughout the working day.

Austria and Denmark: receptive (but not enthusiastic) discourses on digital transformation within a workplace partnership context

In both Austria and Denmark, social partners have jointly negotiated some elements of digital transformation in the workplace. In Austria, some key aspects related to digitalisation, such as employer surveillance, have been addressed through social dialogue and collective bargaining at company level. In Denmark, trade unions have been highly involved in the ICT implementation process at local/company level (section 5.6). This appears to be a key factor in understanding why social partner and particularly trade union discourses, differ from those identified in Spain and Portugal.

Compared with Spain and Portugal, trade unions in Austria and Denmark perceive less actual negative effects of technological change, partly as a result of the regulatory responses adopted. In this sense, it is worth noting that in Austria, trade unions do not see ICT technologies as a neutral tool. Rather, they stress its potential to increase employers' surveillance capacity, particularly in relation to employees' performance, and have worked to ensure there is effective regulation to mitigate this potential problem. Along these lines, regulating surveillance is currently their main focus in the collective bargaining negotiations at company level, facilitated by a statutory framework which entitles works councils to negotiate on these issues. Beyond the topic of digital surveillance, which seems to be successfully regulated in company collective bargaining, both the trade union and employer organisations approached agree that the introduction of ICT devices has hardly changed work organisation (neither the workflow nor the place of activity of the home healthcare workers). The same holds true for working time and working time patterns. In relation to work intensity, both trade union and employer organisations find that it has increased, but due to alternative factors rather than ICT introduction. According to the sector-related level organisations (trade unions as well as employer associations), this increased work intensity is due to increasing cost pressures (based on public cost-cutting measures) and is not an impact of ICT.

In Denmark, the social partners approached (the Danish Trade and Labour Union, FOA, and the Local Government Denmark, KL) agree that in general terms, employees in the home healthcare sector are very satisfied with the introduction of ICT tools in their daily work. This was confirmed by a survey of FOA union members regarding their views on 'welfare technology' (FOA: Velfærdsteknologi – 20 December 2017). The main advantage highlighted by both trade union and employer organisations related to how ICT developments have made the management of all the documentation/registration work easier.

The main disadvantages referred to by both Danish trade union and employer representatives are the risks of employee isolation and overtime. Regarding isolation, currently care assistants receive on a daily basis all their task information on a tablet. Once they finish their tasks, they do not have to come back to the office, if agreed with the group leader. Thus, with new ICTs,

workers can spend days without visiting the offices. This generates a lack of social contact and, in particular, a lack of knowledge and experience sharing, which is very important for the employees and for the development of the department. Interestingly, this problem has been raised by scholars studying the potentially harmful impact of telework in sectors in which ICT-enabled mobility prevail. For instance, Taskin and Bridoux (2010) found that telework is linked to a decrease in the transmission of so-called tacit knowledge, which refers to cognitive and relational factors involved in organisational socialisation, such as the existence of shared mental schemes, language and narratives, and the quality of relationships between co-workers. Regarding the risk of overtime, this relates to the fact that ICT tools allow employees to check or document issues ‘anywhere and anytime’, which means that there are no strict borders defining when the job is finished for the day. Both FOA and KL (independently of each other) expressed that this challenge requires ‘good management’ of the virtual workers by the group leaders. They agree that it is ‘healthy’ for both the individual employee and the employer, that employees meet together in the morning, have lunch at the workplace and come in to finalise documentation before stopping work for the day.

Estonia: an optimistic narrative on ICT potentialities

Finally, trade unions in Estonia offer a very optimistic discourse. According to the Estonian Nurses Union (EÕL), virtual work developments only bring advantages for specialists in the home healthcare sector. They could not point out any negative challenges or disadvantages. Some of the aspects affecting working conditions in the sector are by default always present, regardless of the work form or virtual work developments. For example, work related stress, direct contact with the patients and home visits, and data protection rules, to name a few. However, according to EÕL, the advantages of virtual work could include: reduced workload (for instance, by recording patient information in a common national information system); better time management (for instance, enabling patient contact through video and promoting e-consultations); and overall, from the point of view of patients, improved access to services.

EÕL indicated some factors which hinder development of virtual work in the home healthcare sector: data protection regulation and the need for confidentiality, which restrict the use of video consultations; and budget restrictions, which lead the government to prioritise other investments in the healthcare sector. Nevertheless, EÕL found that in a small country like Estonia, launching and testing new solutions as soon as possible is rather easy and should be used more.

5.5 Sectoral collective bargaining

Sectoral collective bargaining has not specifically addressed the topic of technological change or ICT introduction in any of the five countries studied (ICT mobile devices, telehealth, etc.). Moreover, relevant sectoral initiatives launched by social partners were only found in Austria. In this country, the trade union advises works councils on the negotiation of company agreements regulating digital transformation. To this aim, the sectoral trade union has developed a company agreement model for the use of digital devices, which is made available to works councils. This model agreement is the basis for the development of actual company agreements and includes: the description of the device/technological system to be used; the definition of employers’ responsibilities regarding costs and equipment; working time regulation (restrictions to permanent availability); rights related to training; and works council rights.

5.6 Collective bargaining at company level: good practices

As found for the financial and IT sector, Austria is also the country where company collective bargaining is playing the most prominent role in addressing challenges brought by ICT. This is clearly facilitated by a statutory regulation which establishes that works councils (and employers) have the right to demand a company collective agreement for the introduction or implementation of data processing projects which can be used for surveillance or performance

monitoring. In Denmark, municipalities have involved trade unions in the ICT implementation process at local/company level through information and consultation processes. In contrast, in Estonia, Spain and Portugal, ICT technological changes have been unilaterally implemented by employers and research could not find any case involving joint regulation.

In this highly diverse context concerning the collective regulation of technological transition, it was complex to identify good practices meeting the qualitative criteria. While in three cases (Austria, Denmark and to a lesser extent Spain), good practices meet qualitative criteria, some methodological adaptations had to be made regarding Estonia and Portugal, bearing in mind the lack of social partner involvement in shaping digital transformation. This means that cases from Estonia and Portugal should not be considered as good practices in relation to the improvement of working conditions specifically through social dialogue shaping digital transformation.

Also, cases differ in relation to their relevance for the main research topic in this section on home healthcare (technological transformation affecting workers who are mobile for operational reasons). Companies from Austria, Denmark and Spain are very relevant because they all have adopted several ICT mobile devices (smartphones, tablet and laptops) and technological solutions (applications, web services, etc.) which directly affect home health workers. New technologies are used for: internal (work-team) communication purposes (Austria, Spain, Denmark); digital communication between home-care worker and patient through so-called screen visits (Denmark); working time management (Austria, Denmark and Spain); working time registration and estimation (Spain); electronic documentation of working activities (Austria, Spain, Denmark); and work confirmation by clients (Austria, Spain, Denmark).

The relevance of the cases for the research topic is less clear for Estonia and Portugal. With regard to Estonia, it represents an example of a company in which ICT devices and applications have not been introduced at all, reflecting the national sectoral reality. The company does not provide workers with ICT mobile devices and has only recently digitalised information recording. The Portuguese case addresses a company implementing ‘telehealth’ through a call centre system. It provides services to users/patients, such as an emergency 24h contact, loneliness support, medical phone, pill alerts, 24h home assistance, T-Care 24 (remote bio sensors) and TeleAcesso (mobile and fixed phones and panic buttons). However, it does not offer home healthcare mobile services (visiting patients at home in person). Thus, employees work under stationary jobs.

Companies studied are generally representative of the type of organisation providing home health services in each country. In Austria, the company studied is a non-profit association whose funds depend almost entirely on the state. In Denmark, the case study focuses on a ‘Local Home-Care Centre’ under the Health and Care Service Section of the City of Copenhagen. The Spanish case focuses on a cooperative, an organisation which used to play an active role in the sector, particularly in some regions such as Catalonia. In Estonia and Portugal, they are private sector companies. In terms of company size, the companies from Austria, Denmark and Spain are big companies, employing more than 250 workers. In contrast, the Estonian and Portuguese organisations are small enterprises which employ around 50 employees. Finally, it is worth mentioning that all the companies mainly employ female employees (the norm in the sector) and medium qualified staff (care assistants, nurses, etc.). In the Estonian case, only nurses are employed.

As carried out for the financial and IT sectors, practices studied are firstly described, highlighting when possible their contribution to preventing potential negative effects linked to the introduction of ICT. Then, the participation schemes/regulatory mechanisms put in place and the different negotiation processes are described. Finally, their impact on the improvement of working conditions is discussed.

Topics addressed: description of the practice

As noted above, only cases from Austria, Denmark and Spain deal with practices which are relevant for mitigating some of the negative effects that ICT can produce for sectoral mobile employees.

The Austrian case deals with the company collective regulation of a communication system and digital reporting through ICT mobile devices. This regulation can contribute to preventing several of the negative effects associated with these technologies on home-care employees' working conditions. The most important elements to be highlighted are, first, that it clearly establishes employer and employee responsibilities and liabilities in relation to the use of ICT mobile devices. The employer is responsible for paying all costs related to operational use and maintenance, while the employees' liability for damage or loss of the company's mobile devices is limited to intent and gross negligence. Second, and more important, regulation limits the employer's surveillance options, specifying that digital mobile reporting systems cannot be used to carry out control measures that violate human dignity, to record performance, to monitor behaviour, or to increase the work and performance pressure of employees. In addition, it specifies that information obtained through digital mobile devices cannot be used as evidence to justify personnel measures. Third, regulation provides a specific monthly working time devoted to administrative activities, an aspect which contributes to limiting work intensity. Fourth, it recognises the 'right to disconnect' for employees, establishing that employees are not obliged to have the mobile device switched on outside working hours or their agreed on-call duty time. It is also established that data transmissions (through email, messages, etc.) sent outside working hours or an agreed on-call service, are not considered to have been received by the employee until the beginning of the next work period. Fifth, it limits employer-oriented working time flexibility by establishing that short-term changes in workers' schedules and shift plans have to be clarified by the superior with the employee by phone rather than through mobile devices, and that it is the superior's task to contact the employee by phone. This aspect could mitigate the unilateral discretion of managers and superiors to change work plans. Sixth, it is stated clearly that training is offered for the use of mobile devices, and that the training time as well as the travel time to the training are to be remunerated as working time.

In the Danish case, its potential for improving working conditions lies in the positive role that special training on ICT played in favouring workers' adaptation and transition towards new work methods. The company introduction of new ICT devices and the care system application was accompanied by a good quality training programme aimed at enhancing workers' technological skills. In addition, the company has positive work organisation principles intended to prevent some of the negative effects associated with ICTs highlighted by Danish sectoral social partners. That is, the risk of isolation of the employee, the loss of social contact, and lack of knowledge and experience sharing. With this aim, management and the employee representative agreed to introduce a policy that home-care employees working in the field meet at the office in the morning to pick up the tablet with the daily work plan, and then come back at lunch time and the end of the day after finalising the last client visit. This is to prevent that some workers never meet, because with the tablets and application used for work communication purposes, they are able to stay in the field all day long without necessarily passing by the office.

Regarding the Spanish case, the good practice deals with the introduction of the possibility for area coordinators to work from home during on-call services through the use of tablets and laptops provided by the company. This measure positively favours work-life balance, bearing in mind that on-call service demands working time availability, which does not always translate into effective work time.

The Estonian case does not represent a good practice, rather a common situation in relation to technological transformation at national sectoral level. In this company, the only technological change recently introduced concerns the digitalisation of patient information records. Employees are now required to insert all data related to home visits into a digital database. In

the absence of mobile ICT devices, nurses use their home personal computers (outside of visitation hours). Moreover, a small number of workers go to the office to use workstations that have been put up for this purpose. Some younger employees have raised the question of introducing tablets with a view to inserting patients' data on site (during the home visits), but this proposal has not been considered by the company.

Finally, the Portuguese case offers a good practice concerning integration of people with functional diversity (disability). In 2009, the company started incorporating a project to integrate people with physical disabilities (about 4–5 workers initially). By 2019, the company had 15 to 17 employees with disabilities, and planned to keep most of these workers in the workforce.

Participation schemes/regulatory mechanisms put in place and negotiation processes

Only the cases from Austria, Denmark and Spain dealt with the practices described above through social dialogue mechanisms.

In Austria, regulation was set up through a company collective agreement which was concluded in 2009. The negotiation lasted about half a year. In a first step, company representatives and trade union/employee representatives (works council) developed proposals for the company agreement based on the Labour Constitution Act and the Data Protection Act. The negotiation involved the management, the personnel department and the works council (supported by trade unionists). According to the works council and the management, there were hardly any problems in the negotiations, partly due to a pronounced social partnership culture between the employer and the works council.

In the Danish case, all work organisation aspects are discussed in the company studied within the so-called MED-committee, if needed. This is a committee that was introduced in the public sector by merging the Cooperation Committee (Danish equivalent to works council), and the Health and Safety Committee into one, the aim being to obtain synergy effects (one forum for all discussions). However, cases regarding work organisation and ICT have never been brought forward to be dealt with in the MED-committee, meaning that the current use of ICT does not constitute a problem. The main contribution of social dialogue lies in how management and the local section trade union FOA (which also represents the union at the workplace studied), supported by the digitalisation department of the City of Copenhagen, introduced a mutually agreed strategy to help and support employees step by step during the technological transition. This strategy included high quality training programmes which enhanced workers' digital skills (see box 5).

In Spain, the possibility for coordinators to work from home during on-call services was agreed with the company works council. The company's initial proposal was to extend on-call service hours from 20h to 22h for technical coordinators in order to attend to any incident that may affect the service. This proposal faced the opposition of the works council, which requested the hiring of new employees, or alternatively, that the employees concerned could work from home during the on-call period. The company finally agreed to the latter possibility. In addition, it was agreed that on-call hours are compensated with equivalent free time.

The cases from Estonia and Portugal do not offer any example of social dialogue mechanisms in relation to the practices described.

Impact of the practices

The main conclusions can be drawn from the Austrian and Danish practices, as social dialogue in both is clearly related to positive impacts. Moreover, both cases offer interesting and potentially transferable lessons.

The case from Austria offers a positive example of how social dialogue can effectively contribute to mitigating negative effects linked to technological transformation. Under the existing jointly agreed regulatory framework, both employer and works council agree that technological changes have not negatively affected the working conditions of home-care workers. Interestingly, the Austrian case addresses some of the problems stressed by the trade unions in Portugal and Spain, such as work intensity, overtime or loss of control over work planning and, therefore, it appears to be a case with transferability potential.

With regard to Denmark, the case illustrates how social dialogue can ease technological change by supporting workers' adaptability. As found in the fieldwork, the reason why ICT tools are currently positively viewed by workers is mainly because the social partners at local level supported them to understand how to use and benefit from the tools. In this way, workers' initial discontent and resistance was avoided. This case also deals with concerns raised by a trade union in another country (Portugal) and, accordingly, also offers some transferability lessons related to processes of technological change.

Box 5. Danish good social dialogue practice at company level

The organisation studied is a Local Home-Care Centre under the Health and Care Service Section of the City of Copenhagen. In Denmark, the 98 municipalities administer local social and healthcare activities. The number of employees in the centre amounts to 325, of which most work either 32, 35 or 37 hours a week. There are six groups that each contain a group manager, a work planner and a number of virtual workers. Those working nights work 28 hours a week.

In this organisation, home health mobile workers are equipped with tablets and smartphones using the care system application CURA to document patient care. In CURA, the employee can see their daily tasks and document issues connected to the well-being of the patient. CURA also contains the calendar for each patient so that the home-care helper can see when the patient is going to see a specialist or have a visit from the hairdresser, for example. Another example is screen visits. If needed, the patient receives a screen through which the home-care worker can get in contact with the patient or user from the office in the morning, for instance to remind the patient or user to take the morning medicine. In short, everything that is not physical work in the patient's home is ICT supported work.

The initiative to use ICT tools extensively in home-care came in the first place from the state and municipalities. The drivers were to make home-care more efficient and digital. In the early stage of the process, home health workers feared that the introduction of ICT in home-care would increase employer surveillance because they had to register all the working times and work locations throughout the day. Furthermore, they believed that quality time with the elderly people would be disturbed by the work with the ICT tools.

With a view to overcoming workers' resistance and fears, management and the trade union at local/municipality level, supported by the digitalisation department of the municipality of Copenhagen, introduced a mutually agreed strategy to help and support the employees step by step during the technological transition. This strategy included good quality training programmes.

Once the employees learnt to use the new equipment through mutual cooperation – special training and user surveys among the members of FOA – workers have been very positive about it. The ICT tools and the introduction of CURA, replacing older systems, have provided better working conditions and better work organisation. This is documented in a survey conducted by the trade union FOA. The fieldwork interview conducted in the company also confirmed this conclusion.

In conclusion, this is an example of how social dialogue played an active and positive role supporting workers' adaptation and transition towards new work methods entailing technological transformation.

Source: Danish fieldwork report, Jørgensen, C. and Navrbjerg, S.E. (2019).

Conclusions

The report has analysed how social partners perceive and regulate challenges brought by virtual work at both cross-sectoral and sectoral level. With this aim, it has focused on five countries representing different industrial relations models (AT, DK, EE, ES and PT), and three sectors which present highly diverse workforce characteristics, employment and working conditions, and working mobility types (ICT-enabled versus mobility for operational reasons).

At **cross-sectoral level**, the study has found that the specific topic of ICT-enabled mobility through virtual work does not constitute the core of social partners' recent debates. The main bipartite and tripartite social dialogue discussions (including joint reports drawn up by tripartite bodies) have been framed under the broader term of digitalisation. Accordingly, the EU framework agreement on telework (2002) still constitutes the main reference point for the regulation of virtual work through collective bargaining and state regulation. At the same time, the role played by statutory legislation and collective bargaining in the implementation agreement greatly varies across the five countries studied. In Austria and Denmark, the EU framework agreement on telework (2002) has been mainly implemented through sectoral collective bargaining. In both countries, there is no statutory regulation. Rather, telework arrangements are dealt with through different laws related to data protection (Austria), and health and safety (Denmark). However, in the case of Austria, it is worth noting that statutory legislation greatly supports collective bargaining regulation on virtual work by entitling works councils to ask for an enforceable company agreement regulating the company's digital systems, where those digital systems can be used to monitor employee performance or working time, and/or implement desk-sharing. In line with state-centred industrial relations patterns (Visser, 2009; Eurofound, 2018), statutory legislation has played a more prominent role in Spain and Portugal where there is specific statutory legislation, which mainly reproduces the EU framework agreement on telework (2002). In Portugal, social partners did not implement the EU framework agreement on telework (2002) at all, while in Spain, implementation has been scarce. In Estonia, telework was broadly regulated through statutory legislation in 2009 under the Employment Contracts Act. In addition, a cross-sectoral agreement aiming to implement the EU framework agreement was concluded in 2017.

Other forms of virtual work beyond 'regular telework' have not been discussed or regulated at cross-sectoral level, neither through statutory legislation nor collective bargaining. Only in Spain, recent statutory legislation has addressed some of the risks linked to virtual work, establishing new rights for virtual workers such as the 'right to disconnect'. Regarding collective bargaining, the study found that only in Austria, do collective agreements play an active role in the regulation of new forms of virtual work at sectoral and particularly company level. In the remaining countries, it is found that only a minority of companies within particular sectors have regulated their approach to virtual work through company collective agreements (the case of Denmark and Spain), and others have just implemented virtual work through individual and/or informal negotiations (Estonia and Portugal). Interestingly, this occurs in a context where peak-level social partners from the five countries recognise that so-called casual or informal virtual work arrangements rather than 'regular telework' are the most widespread arrangements. Thus, it appears that workers under newly virtual work arrangements may be exposed to unbalanced agreements in favour of the employers. Trade unions in the five countries studied are aware of this situation and claim that, in the absence of collective regulation, virtual workers are more likely to be negatively impacted by several risks such as work intensity, overtime or digital surveillance. Accordingly, they are in favour of centralised collective bargaining providing general rights for virtual workers, which can be further developed by company agreements, as it indeed happens in Austria. Trade union discourse on virtual work is more critical in Spain and Portugal, where trade unions tend to connect virtual work with precarious working conditions. This discourse is conditioned by a lack of collective

regulation within a national context of downward pressures on working conditions and a change in the balance of power between social partners in favour of the employers.

Compared to trade unions, peak-level employer organisations offer a more positive discourse on virtual work. In employer organisations' narratives, virtual work is generally represented as a worker demand which, similar to other flexible work arrangements, aims to improve working conditions and, in particular, employees' capacity to combine work and family responsibilities. No significant cross-country differences appear regarding employer discourses.

In this context, it generally appears that more updated and comprehensive regulation of virtual work is not on the agenda of the countries studied due to employers' resistance. In the countries studied, employers tend to perceive that new potential regulatory tools implemented through state regulation or centralised collective bargaining may add rigidity and complexity. Employers go on to argue that such rigid and complex tools may discourage employers from offering workers the flexible arrangements they are demanding in order to achieve a better work-life balance. Generally, peak-level employer organisations argue that the company is the most suitable level for discussing the regulation of virtual work arrangements, either through collective bargaining or through individual negotiations.

In the **financial sector**, cross-country differences with regard to the incidence of virtual work have been found. In Estonia, Spain and Portugal, social partners stated that virtual work arrangements are scarce and tend to be concentrated among highly qualified employees and managers. The low incidence of virtual work in the sector is not explained by a lack of technical means. Rather, it is related to issues such as cyber security, data protection and management resistance. In contrast, in Austria and Denmark, virtual work arrangements seem to be more widespread and have increased in recent years, according to the social partners interviewed.

The extent to which the topic of virtual work has been discussed by social partners in the financial sector also varies greatly among the five countries studied. In Austria and Denmark, debates on telework already took place in the 1990s. In both countries, social partners implemented the EU framework agreement on telework (2002) through sectoral collective bargaining. Although in recent years, there have not been bargaining processes at sectoral level aiming to further regulate virtual work, social partners in both countries accept that virtual work arrangements are becoming an integral part of management policies, as part of broader changes in work organisation. The main debates in both countries stem from the observed link in the financial sector between the increasing offer of virtual work arrangements, and the shift towards 'desk-sharing' and 'activity-based' offices which provide fewer individual workplaces than the company has employees. The main difference between Austria and Denmark is related to the role played by company collective bargaining. While in Austria, company collective bargaining is playing a prominent role in the regulation of newly virtual work arrangements, Danish companies are implementing virtual work through informal arrangements. Surprisingly, Danish trade unions seem to tacitly accept these practices, as they are normally assessed positively by individual workers, who use them for work-life balance purposes.

In Spain and Portugal, the EU framework agreement was never discussed at sectoral bargaining level. While in Portugal the topic still remains outside the social partners' agenda, in Spain social partners have entered into the debate of virtual work recently in some subsectors and at company level. Interestingly, the study found that trade unions from these two countries, where virtual work remains largely unregulated, are particularly concerned with the spread of unregulated occasional telework among managers and professional staff, which results in unrecognised overtime.

In Estonia, where there are neither sector-related employer organisations nor sectoral collective bargaining, the topic is only addressed through HRM policies. Trade unions have not managed to enter into negotiations or discussions at company level about virtual work, given the context

of highly individualised employment relationships and the difficulties that trade unions encounter in representing and recruiting workers. In this context, the sectoral trade union approached does not have an elaborated discourse yet.

With regard to the **IT sector**, the study first shows the internal variety concerning mobility patterns. On the one hand, some occupations such as IT support workers, which account for a high proportion of sectoral employment, carry out tasks that entail mobility for operational reasons as well as working time constraints (time availability, etc.). On the other hand, the sector also presents a high incidence of ‘ICT-enabled mobility’ arrangements in the five countries studied, because some workforce segments of IT activities (programmers, software developers, etc.) work under more innovative forms of work organisation relying on autonomy of work, decentralised structures, and high involvement and responsibility of employees.

Sectoral social partners in all the countries studied except Estonia have bargained on virtual work arrangements which entail mobility and/or working time flexibility as a choice (which can be constrained by certain circumstances such as time pressure). This is because a relatively high proportion of workers in this sector are requesting or using these arrangements. In Austria, Denmark and Portugal, sectoral bargaining regulated ‘regular telework’. In Spain, trade unions proposed to implement the EU framework agreement on telework (2002) in the sectoral collective bargaining, but the proposal was finally rejected by the employer organisation. Compared to the financial sector, a less clear-cut cross-country division is found in the topics discussed by social partners during the interviews. Overall, trade unions have a more negative discourse than employer organisations, tending to stress some of the drawbacks identified in the literature. It is worth noting that the main concerns are related to more flexible and sporadic forms of virtual work than regular telework (casual telework, alternate telework, etc.). As far as the employer organisations are concerned, they perceive mostly advantages, which are particularly related to employer opportunities to save facility costs.

Regarding the topic of on-call work related to IT support workers, this entails discussions about its definition, procedures for working time registration and remuneration. From the countries studied, only Austria and Denmark have regulated on-call work through sectoral collective bargaining provisions, defining the maximum number of ‘on-call’ days per month/year and the relevant compensation. In Spain, on-call work appears to be a very conflictual topic. Trade unions criticise the high degree of informality and irregularity around these arrangements, and regret that the employer organisation rejected regulation through collective bargaining for these arrangements. In this country, the study identified only one company collective agreement regulating on-call work.

As far as the **home healthcare** sector is concerned, the study has shown that in all the countries studied (although to a lesser extent in Estonia), sectoral workers have progressively adopted several ICT devices which are mainly used for: internal (work-team) communication purposes; working time management, registration and estimation; electronic documentation/registration of working activities; and work confirmation by clients (this aims to demonstrate that work has been done in accordance with the service the elderly person is entitled to). The Estonian situation is interesting because, although this is one of the most digitalised countries, technological transformation has barely affected the home health sector.

Significant cross-country differences are found regarding the social partners’ discourses on ICT changes, which are partly explained by the different roles played by collective bargaining in the regulation of technological transformation. It appears that the social partners’ perception of the impact of digitalisation on working conditions are much more polarised in Spain and Portugal, where social partners have not bargained any aspect of the recent technological transformations affecting the sector. In contrast, in Austria and Denmark, trade unions have an overall positive view on the effects of digitalisation and technological transformation (Denmark) or, at least, find that inevitable digitalisation needs to be accompanied by regulatory and social dialogue

arrangements that can successfully mitigate the negative effects of digital transformation on work organisation and working conditions (Austria). Finally, the Estonian trade union approach shows a very optimistic narrative on the potential effects that ICT may bring in a sectoral context where digitalisation is at an early stage.

In conclusion, the study has identified some **social dialogue good practices at company level**. The following findings emerge from the comparative review of good practices identified:

- **Complementarity of statutory legislation and company collective bargaining:** the Austrian case clearly illustrates how statutory legislation can complement and reinforce collective regulation. That is, statutory legislation can establish those elements associated with technological transformation that works councils are entitled to deal with through company collective bargaining.
- **The role of trade unions/work councils and collective bargaining regulation in ensuring decent working conditions for virtual workers:** HRM policies, mainly designed to enhance employee engagement and improve company performance, do not seem the most effective way to prevent negative effects on working conditions associated with virtual work. Compared to HRM actions, participatory mechanisms through trade unions/work councils and collective bargaining appear to offer better working conditions under a more transparent regulatory framework. They also establish the framework for ongoing negotiations to keep regulations up to date with new challenges.
- **Regulation of new forms of virtual work and rights for virtual workers beyond regular telework:** the good practices reviewed addressed the regulation of new arrangements beyond regular telework (alternate telework, casual telework, etc.) and also new rights, such as the ‘right to disconnect’, which can prevent negative effects related to overtime and increased work intensification.
- **Regulation of surveillance:** some good practices in Austria and Portugal show how digital managerial surveillance can be effectively regulated by prohibiting performance assessment through digital devices. This regulation also positively contributes towards preventing problems related to work intensity.
- **Involving trade unions in ICT implementation:** workers’ perceptions of the impact of technological change can be positively modified by involving trade unions in the implementation process, as was the case in the Danish case study on the home healthcare sector. In this case, technological change was accompanied by additional measures such as training, which supported workers’ transition. Moreover, trade unions ensure that transformation does not have unbalanced impacts on employees and employers, and does not contribute to increased work intensity for employees.

References

- Allen, T.D., Golden, T.D. and Shockley, K.M. (2015), 'How Effective Is Telecommuting? Assessing the Status of Our Scientific Findings', *Psychological Science in the Public Interest*, 16 (2), pp. 40-68.
- Allinger, B. (2013), *Unions call for limit 'all-in employment contract'*, Eurofound, available at: <https://www.eurofound.europa.eu/publications/article/2013/union-calls-for-limit-on-all-in-employment-contracts>
- Almeida, P.A.F.S., (2006), *A Integração de Serviços de Comunicação e Gestão Para o Fomento de Práticas de Teletrabalho*. Universidade de Aveiro.
- Arbeiterkammer Oberösterreich (2013) *Arbeitsbedingungen in der Pflege und Betreuung. Daten, Fakten und Forderungen der Arbeiterkammer Oberösterreich*.Linz, AK OÖ. Arbeitsbedingungen
- Belzunegui, A. (2002) *Teletrabajo: Estrategias de flexibilidad*, Consejo Económico y Social, Colección Estudios, Madrid.
- BFA Finans (2018) *Hvordan samarbejder vi med virtuelle kolleger?* in BFA Finans: Sæt fremtidens arbejdsmiljø til debat.
- Boell, S. K., Cecez-Kecmanovic, D. and Campbell, J. (2016), 'Telework paradoxes and practices: the importance of the nature of work', *New Technology, Work and Employment* 31(2), pp. 114-131.
- Business Europe (2015), *Grasping the opportunities of digital / Europe's digital economy - a Business Europe position paper*, available at: <https://www.buinessurope.eu/publications/grasping-opportunities-digital-europes-digital-economy-buinessurope-position-paper>
- Caspar, S., Jaksic, K. and Roelen, E. (2018), 'Social dialogue for a changing world of work', in European Commission, *Employment and Social Developments in Europe Annual Review 2018*, Luxembourg: Publications Office of the European Union, 2018, pp. 154-175.
- Centro de Relações Laborais (2018), *Relatório Anual Sobre a Evolução Da Negociação Coletiva Em 2017*, Lisboa.
- CES (2018), *Informe sobre el futuro del trabajo*, Consejo Económico y Social, Madrid.
- Chung, H. (2018) *Future of work and flexible working in Estonia. The case of employee-friendly flexibility*. Available at: <https://www.riigikogu.ee/wpcms/wp-content/uploads/2017/09/Employee-friendly-flexibility.pdf>.
- Cohen, R.L. (2010), 'Rethinking 'mobile work': boundaries of space, time and social relation in the working lives of mobile hairstylists', *Work, employment and society*, 24(1), pp. 65-84
- Crueira, M.P. (2015), *Trabalhar a Partir de Casa: Stressores e Estratégias de Coping Na Conciliação Do Trabalho e Da Família*, ISCTE-IUL. <https://doi.org/10.1017/CBO9781107415324.004>.
- Danish Working Environment Authority, AT (2014) *At-vejledning D.2.9-2 om hjemmearbejde*.
- Danmarks Statistik (2017) *It-anvendelse i virksomheder 2017 - Virksomhedernes digitalisering*
- Denton, M.A.; Zeyinoglu, I. and Davies, S. (2002), 'Working in Clients' Homes: The Impact on the Mental Health and Well-Being of Visiting Home Care Workers', *Home Health Care Services Quarterly*, 21(1), pp. 1-27.

- Dén-Nagy, I. (2014), 'A double-edged sword?: a critical evaluation of the mobile phone in creating work–life balance', *New Technology, Work and Employment*, 29(2), pp. 193-211.
- EBF-BCESA, ESBG, EACB and Uni Global Union, (2017), *Joint declaration. Telework in the European Union Banking sector*, available at: <https://www.ebf.eu/wp-content/uploads/2017/11/Joint-Declaration-Telework-in-the-European-Banking-Sector-Final-version-signed.pdf>.
- EBF-BCESA, ESBG, EACB and Uni Global Union (2018), *Joint Declaration on the Impact of Digitalisation on Employment*, available at: http://www.uni-europa.org/wp-content/uploads/2018/11/20181130_SSDC_Bank_Digitalisation_joint_dec.pdf.
- EPSU and HOSPEEM (2011), *Response to the European Commissions' green paper on reviewing the directive on the recognition of professional qualifications 2005/36/EC Brussels*, available at: <https://www.epsu.org/article/epsu-response-consultation-green-paper-modernisation-professional-qualifications-directive>
- ETUC (2003), *Voluntary Agreement on Telework*, Brussels, ETUC, 2003.
- ETUC (2016), *Resolution on digitalisation: 'towards fair digital work'*, Adopted by the Executive Committee on 8-9 June 2016. Available at: <https://www.etuc.org/en/document/etuc-resolution-digitalisation-towards-fair-digital-work>.
- ETUC, UNICE-UEAPME and CEEP (2002), *Framework Agreement on Telework*, Brussels, 16 July 2002.
- ETUC, UNICE-UEAPME and CEEP (2006), *Implementation of the European Framework Agreement on Telework – Report by the European social partners*, Adopted by the Social Dialogue Committee on 28 June 2006, ETUC, September 2006.
- European Commission Digital Economy and Society Index (2018), Country report Denmark European Commission (2010). *The increasing use of portable computing and communication devices and its impact on the health of EU workers*. Luxembourg: Publications Office of the European Union.
- Eurofound (2020), *Telework and ICT-based mobile work. Flexible working in the digital age*, Publications Office of the European Union, Luxembourg, and the International Labour Office, Geneva
- Eurofound (2018), *Measuring varieties of industrial relations in Europe: A quantitative analysis*, Publications Office of the European Union, Luxembourg, and the International Labour Office, Geneva.
- Eurofound. (2017) Sixth European Working Conditions Survey - Overview report. Publication Office of the European Union
- Eurofound (2015), *Delivering public services: A greater role for the private sector? An exploratory study in four countries*, Publications Office of the European Union, Luxembourg.
- Eurofound (2012), *Trends in job quality in Europe*, Publications Office of the European Union, Luxembourg.
- Eurofound (2011), *Employment and industrial relations in the health care sector*, Publications Office of the European Union, Luxembourg.
- Eurofound (2010), *Telework in the European Union*, Publications Office of the European Union, Luxembourg.
- Eurofound and the International Labour Office (2017), *Working anytime, anywhere: The effects on the world of work*, Publications Office of the European Union, Luxembourg, and the

- International Labour Office, Geneva.
- Fernández Rodríguez, C., Ibáñez Rojo, M. and Martínez Lucio, M. (2016), 'Austerity and collective bargaining in Spain: The political and dysfunctional nature of neoliberal deregulation', *European Journal of Industrial Relations*, 22(3), pp 267–280.
- Ferreiro, C. (2015), 'La conformación del teletrabajo en la negociación colectiva', in Mella, L. and Villalba, A. (eds.), *Trabajo a distancia y teletrabajo. Estudios sobre su régimen jurídico en el derecho español y comparado*, Thomsom Reuters Arazandi, Pamplona, pp. 47-60.
- FTF (2017), Kortlægning af det grænseløse arbejde blandt FTF jobgrupper FTF dokumentation nr. 1 – 2017 (en. Mapping of the borderless work among FTF job groups)
- Flecker, J, Papouschek, U, and Bernhard, S. (2013), *Beschäftigungspotenziale und –bedingungen im Bereich der Altenpflege*, Forschungsbericht Wien.
- Gajendran, R. and Harrison, D. (2007), 'The Good, the Bad, and the Unknown About Telecommuting: Meta-Analysis of Psychological Mediators and Individual Consequences', *Journal of Applied Psychology*, 92(6), pp. 1524-1541.
- Gil, S.D.S.(2015), *As Perspetivas Civis Do Contrato de Trabalho - o Teletrabalho Subordinado: Seu Estudo Nos Ordenamentos Jurídicos Portugueses e Espanhol*, Universidade da Coruna.
- Gorfinkiel, M.D and San Miguel, B. (2015) 'Desprofesionalizando el servicio público de asistencia a domicilio en los cuidados de larga duración: análisis de la reconfiguración del sector', *Zerbitzuak*, 60, pp. 131-141.
- GPA-djp. (2018a). *Arbeitswelt 4.1 - Aspekte der Digitalisierung*, Wien: GPA-djp. Retrieved from https://www.gpa-djp.at/cms/A03/A03_3.10.3.a/1342591984387/ueber-uns/arbeit-technik-gute-arbeit/broschueren-betriebsvereinbarungen/arbeitswelt-4-1-aspekte-der-digitalisierung
- GPA-djp. (2018b). *Irgendwie - Irgendwo - Irgendwann. Zur Gestaltung mobiler Arbeit*, Wien: GPA-djp. Retrieved from https://www.gpa-djp.at/cms/A03/A03_3.10.3.a/1342596902411/ueber-uns/arbeit-technik-gute-arbeit/broschueren-betriebsvereinbarungen/irgendwie-irgendwo-irgendwann
- Holts, K. (2018) 'Understanding Virtual Work. Prospects for Estonia in the Digital Economy', Foresight Centre at the Riigikogu. Available at: https://www.riigikogu.ee/wpcms/wp-content/uploads/2017/09/Virtual-work-size-and-trends_final1.pdf
- Holtgrewe, U. (2014), 'New new technologies: The future and the present of work information and communication technology', *New Technology Work and Employment*, 29 (1), pp. 9–24.
- Holtgrewe, U. and Haider, W. (2018), *Shaping industrial relations in a digitalizing services industry – Workshop 3: company strategies and work organisation*, ZSI – Centre for Social Innovation, available at: <http://unieuropaprojects.org/content/uploads/2018-05-ws3-report-on-work-organisation.pdf>
- Huws, U., Spencer, N.H. and Joyce, S. (2016), *Crowd Work in Europe. Preliminary results from a Survey in the UK, Sweden, Germany, Austria and the Netherlands*, Foundation for European Progressive Studies, available at: <http://www.feps-europe.eu/assets/39aad271-85ff-457c-8b23-b30d82bb808f/crowd-work-in-europe-draft-report-last-versionpdf.pdf>
- ILO (2016), *Challenges and Opportunities of Teleworking for Workers and Employers in the ICTS and Financial Services Sectors*. Sectoral Policies Department, Geneva.
- Jeddi, S. (2014), 'Social Capital of Mobile Workers: An Emerging Risk Factor?', *Procedia - Social and Behavioral Sciences*, 109, pp. 536 – 540.

- Jelenko, M., Kaupa, I., Kien, C. and Mosberger, B. (2007), *Erwerbsbiographien und Qualifikationsprofile von Diplomierten Pflegebediensteten*. Wien.
- Kesselring, S. (2014), 'Corporate Mobilities Regimes. Mobility, Power and the Socio-geographical Structurations of Mobile Work', *Mobilities*, 10(4), pp. 571-591.
- Koslowski, N.C. (2016), 'My Company is Invisible – Generating Trust in the Context of Placelessness, Precarity and Invisibility in Virtual Work', in Flecker, J. (Ed.) *Space, Place and Global Digital Work*, Palgrave Macmillan, London, 171-199.
- Krenn, M., Flecker, J., Eichmann, H., Papouschek, U. and Hermann, C. (2010), '... was willst du viel mitbestimmen?' Flexible Arbeit und Partizipationschancen in IT-Dienstleistungen und mobiler Pflege, edition sigma, Berlin.
- La Cour, A., Hecht, J. and Kirstine, M.S. (2016) 'A vanishing act: The magical technologies of invisibility in care work', *Ephemera. Theory & politics in organization*, 16(2), pp. 77-96.
- Lapao, L.V. and Dussault, G. (2017) 'The contribution of eHealth and mHealth to improving performance of the health workforce: a review', *Public Health Panorama*, 3(3), pp. 357-536.
- Larsen, H. H., Kjær, S., Hjalager, A. M. (2016) *Virtual ledelse og arbejdsmiljø*, vol I-II. CBS Copenhagen Business School, COWI A/S, SDU Syddansk Universitet
- Larsen, T. P., Andersen, S. K. (2007) A New Mode of European Regulation? - The Implementation of the Autonomous Framework Agreement on Telework in Five Countries
- Lee, J. (2016), 'Drivers and Consequences in Transforming Work Practices', in Lee, J. (Ed.) *The Impact of ICT on Work*, Springer, Singapore, pp. 71-92.
- Lindberg, B.; Nilsson, C.; Zotterman, D.; Söderberg, S.; Skär, L. (2013) 'Using Information and Communication Technology in Home Care for Communication between Patients, Family Members, and Healthcare Professionals: A Systematic Review', *International Journal of Telemedicine and Applications*, available at: <https://www.ncbi.nlm.nih.gov/pubmed/23690763>
- Lousada, J.F. and Ron, R.P. (2015), 'Una mirada periférica al teletrabajo, el trabajo a domicilio y el trabajo a distancia en el derecho español', in Mella, L. and Villalba, A. (eds.), *Trabajo a distancia y teletrabajo. Estudios sobre su régimen jurídico en el derecho español y comparado*, Thomson Reuters Arazandi, Pamplona, pp. 31-45.
- Meil, P. and Kirov, V. (2017) 'Introduction: The Policy Implications of Virtual Work', in Meil, P.; Kirov, V. (Eds.) *Policy Implications of Virtual Work*, Palgrave Macmillan, pp. 3-29.
- Messenger, J.C. and Gschwind, L. (2016), 'Three generations of Telework: New ICTs and the (R)evolution from Home Office to Virtual Office', *New Technology, Work and Employment*, 31(3), pp. 195-208.
- Nicklin, J.M., Cerasoli, C.P. and Dydyn, K. (2016), 'Telecommuting: What? Why? and How?', in Lee, J. (Ed.) *The Impact of ICT on Work*, Springer, Singapore, pp. 41-71.
- Nielsen, H. O., Larsen, S. H., and Oxford Research (2015) Newforms of employment - ICT based mobile work, Denmark. Eurofound
- Nilles, J.M. (1975), 'Telecommunications and Organizational Decentralization', *IEEE Transactions on Communications*, 23(10), pp.1142-1147.
- Nilles, J.M. (1988), 'Traffic Reduction by Telecommuting: A Status Reviewed and Selected Bibliography', *Transportation Research Part A: General*, 22(4), pp. 301-317.

- Ninuas, K., Diehl, S., Terlutter, R., Chan, K. and Huang, A. (2015), 'Benefits and stressors. Perceived effects of ICT use on employee health and work stress: An exploratory study from Austria and Hong Kong', *Qualitative studies on health and well-being*, 10, pp. 1-15.
- Nunes, F. (2007). "TIC's, Espaço e Novos Modos de Trabalho Em Portugal : Usos Do Espaço e Do Tempo Em Contextos de Teletrabalho." *ICT's, Space and New Working Methods in Portugal : Uses of Space and Time in Telework Contexts*. Universidade do Minho. <http://widgets.ebscohost.com/prod/customerspecific/ns000558/fakeproxy/index.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=edsrca&AN=rcaap.doctoralthesis.1822.6904&lang=pt-br&site=eds-live>.
- OECD (2018), *Financial Markets, Insurance and Private Pensions: Digitalisation and Finance*, <https://www.oecd.org/finance/private-pensions/Financial-markets-insurance-pensions-digitalisation-and-finance.pdf>
- Ojala, S. and Pyöriä, P. (2018), 'Mobile knowledge workers and traditional mobile workers: Assessing the prevalence of multi-locational work in Europe', *Acta Sociologica*, 61(4), pp. 402-418.
- Pesole, A., Urzi Brancati, M.C, Fernández-Macías, E., Biagi, F., González Vázquez, I. (2018) *Platform Workers in Europe. Evidence from the COLLEM Survey*, Publications Office of the European Union, Luxembourg, 2018
- Peña-Casas, R.; Ghaliani, D.; Coster, S. (2018) *The impact of digitalization on job quality in European public services. The case of homecare and employment service workers*, European Social Observatory, European Public Service Union. Available at: <https://www.epsu.org/sites/default/files/article/files/FINAL%20REPORT%20EPSU%20DIGITALISATION%20-%20OSE%20June%202018.pdf>
- Popma, J., (2013), *The Janus face of the 'New Ways of Work' Rise, risks and regulation of nomadic work*, Working Paper 2013.07, ETUI Printshop, Brussels.
- Prosser, T. (2012), 'Europeanization through 'procedures and practices'? The implementation of the telework and work-related stress agreements in the UK and Denmark', *Transfer*, 18(4), pp. 447-460
- Raffaele, C. and Connell, J. (2016), 'Telecommuting and Co-Working Communities: What Are the Implications for Individual and Organizational Flexibility?', in Sushil, Connell, J.; Burgess, J. (eds.) *Flexible Work Organizations. The Challenges of Capacity Building in Asia*, Springer India, pp. 21-37
- Ramalho, R. P. (2019), *A Economia Digital e a Negociação Coletiva*, Lisbon, MTSSS
- Rodríguez-Piñero, M. (Coord.) (2006), *Las nuevas tecnologías en la empresa*, Consejo Andaluz de Relaciones Laborales, Sevilla.
- Rodríguez-Piñero, M. (2018), 'El papel de la negociación colectiva. Contenidos a afrontar, aparición de nuevas actividades y nuevas formas de trabajo', XXX Jornadas de Estudio sobre Negociación Colectiva (Madrid, 27 de octubre de 2017). Available at: www.empleo.gob.es/es/sec.../cncc/G.../Jornadas/2017_Miguel_RodriguezPinero.pdf
- Rocha, F. (2017), *La digitalización y el empleo decente en España. Retos y propuestas de actuación*, International Labour Organisation – Madrid Office. Available at: https://iniciativaoitinteruniversitariafuturodeltrabajo.com/ver-articulos/item/la-digitalizacion-y-el-empleo-decente-en-espana-retos-y-propuestas-de-actuacion?category_id=13.
- Rocha, F. and de la Fuente, L. (2018), 'El Diálogo Social ante la digitalización en España. Un paisaje emergente y fragmentado. Principales conclusiones', Fundación Primero de Mayo. Available at: <http://www.1mayo.ccoo.es/d43419f7ed1da89ef72d2a35f5031825000001.pdf>

- Rosengren, C. (2018), 'Adapting Reality to the Matrix: Digital Technology in Social Home Care'. In Schaefer, S., Andersson, M., Bjarnason, E. and Hansson, K. (eds.), *Working and organizing in the digital age*, The Pufendorf Institute for Advanced Studies Lund University, pp. 43-50.
- Rubery, J.; Grimshaw, D. (2001), 'ICTs and Employment: The Problem of Job Quality', *International Labour Review*, 140(2), pp. 165-192.
- Sharma, U. and Clarke, M. (2014), 'Nurses' and community support workers' experience of telehealth: a longitudinal case study', *BMC Health Services Research*, 14(1), pp. 1-14.
- Statistik Austria (2015): *Arbeitsorganisation und Arbeitszeitgestaltung, Modul der Arbeitskräfteerhebung 2015*, Wien (Statistics Austria (2015): "Work organisation and working time arrangements", ad-hoc module of the Austrian Labour Force Survey 2015)
- Taskin, L. and Bridoux, F. (2010), 'Telework: a challenge to knowledge transfer in organizations', *The International Journal of Human Resource Management*, 21(13), pp. 2503-2520.
- Tavares, A. I. (2015), *Telework and health effects review, and a research framework proposal*, Munich Personal RePEc Archive Paper No. 71648.
- Ticona, J. (2015), 'Strategies of control: workers' use of ICTs to shape knowledge and service work', *Information, Communication & Society*, 18(5), pp. 509-523.
- Todolí, A.; Hernández, M. (Dir.) (2018) *Trabajo en Plataformas Digitales: innovación, Derecho y mercado*. Aranzad, Thosmon Reuters, Madrid.
- Toffler, A. (1980) *The Third Wave*, New York, Bantam Books.
- Trusson, C., Hislop, D. and Doherty, N. (2018), 'The role of ICTs in the servitisation and degradation of IT professional work', *New Technology, Work and Employment* 33(2), pp. 149-170.
- Uni Europa and ETNO (2016), Joint Declaration on Telework by the European social partners in the telecom sector, available at: https://etno.eu/datas/ETNO%20Documents/Joint_Declaration_telework_UNIeuropa_ETNO.pdf
- Urze, P., Moniz, A. and Barroso, S.G. (2003), 'Practices and Trends of Telework in the Portuguese Industry: The Results of Surveys in the Textile, Metal and Software Sectors', *Enterprise and Work Innovation Studies*, no. 10679.
- Valenduc, G.; Vendramin, P. (2016) *Work in the digital economy: sorting the old from the new*, ETUI, Working Paper 2016.03.
- Valenduc, G. and Vendramin, P. (2017), 'Digitalisation, between disruption and evolution', *Transfer*, 23(2), pp. 121-134
- Vallistu, J., Erikson, M., Eljas- Taal, K., Tappel, R., Ratnik, H., Nausedaite, R., Aksen, M., Pruks, P. (2017) *Future of work – new trends and solutions*, Tehnopolis, Tartu University Centre for Applied Social Sciences (CASS). https://skytte.ut.ee/sites/default/files/skytte/tuleviku_too_lopparuanne.pdf in Estonian
- Vartiainen, M. (2006), 'Mobile Virtual Work - Concepts, Outcomes and Challenges', in Andriessen J. H. and M. Vartiainen (Eds.), *Mobile virtual work: A new paradigm?* Springer, pp. 13-44.
- Vendramin, P. and Valenduc, G. (2016), *Le travail virtuel. Nouvelles formes d'emploi et de travail dans l'économie digitale*, Fondation Travail-Université – CSC.

- Verburg, R., Testa, S., Hyrkkänen, U. and Johansson, N. (2006), ‘Case descriptions of mobile virtual work in practice’, in Andriesen, J.H and Vartiainen, M. C. (ed.), *Mobile virtual work. A new paradigm?* Springer, Berlin, pp. 267-288.
- Visser, J. (2009), ‘The quality of industrial relations and the Lisbon Strategy’, in European Commission, *Industrial relations in Europe 2008*, Publications Office of the European Union, Luxembourg, pp 45–73.
- Visser, J. and Ramos Martin, N. (2008), *Expert report on the implementation of the social partner’s Framework Agreement on Telework*, Amsterdam Institute of Advanced Labour Studies, University of Amsterdam, Amsterdam.
- VVAA (2012), *El libro blanco del teletrabajo en España. Del trabajo a domicilio a los e-workers. Un recorrido por la flexibilidad espacial, la movilidad y el trabajo remoto*, Fundación MásFamilia
<http://ajuntament.barcelona.cat/tempsicures/sites/default/files/libroblancoteletrabajoespana.pdf>
- VVAA (2018), *Social Dialogue for a changing world of work*, in VVAA, *Employment and Social Developments in Europe 2018*.
- Webster, J. and Randle, K. (2016), ‘Positioning Virtual Workers Within Space, Time and Social Dynamics’, in Webster, J.; Randle, K. (Eds.), *Virtual Workers and the Global Labour Market, Dynamics of Virtual Work*, Palgrave Macmillan, London, pp. 3-34.
- Weinert, C., Maier, C. and Laumer, S. (2015) ‘Why are teleworkers stressed? An empirical analysis of the causes of telework-enabled stress’, in Thomas. O. and Teuteberg, F. (Hrsg.) *Proceedings der 12. Internationalen Tagung Wirtschaftsinformatik (WI 2015)*, Osnabrück, S. 1407-1422.
- Wiethoff, M., Meulenbroek, T., Stafleu, H. and van Boxtel, R. (2006), ‘Participative Design for Home Care Nursing’, in Andriesen, J.H and Vartiainen, M. C. (ed.), *Mobile virtual work. A new paradigm?* Springer, Berlin, pp. 203-230.
- Wobbe, W. (2016) (Ed.), *The Digital Economy and the Single Market. Employment Prospects and Working Conditions in Europe*, FEPS – Foundation for European Progressive Studies, Brussels.

Annex: Organisations interviewed in the fieldwork

Austria

- Austrian Chamber of Commerce (Wirtschaftskammer Österreich, WKO)
- Chamber of Labour (Kammer für Arbeiter und Angestellte Wien, AK)
- Austrian Trade Union of Private Sector Employees, Graphical Workers and Journalists (Gewerkschaft der Privatangestellten, Druck, Journalismus, Papier. GPA-djp:)
- Austrian Chamber of Commerce, IT (Wirtschaftskammer Österreich, Sparte Information und Beratung, WKO)

Denmark

- Confederation of Professional Associations (Akademikernes Centralorganisation, AC)
- Confederation of Trade Unions (Fagbevægelsens Hovedorganisation, FH)
- Danish Employers' Association for the Financial Sector (Finanssektorens Arbejdsgiverforening, FA)
- Danish ICT Industry Association (IT-Branchen)
- Danish Chamber of Commerce (Dansk Erhverv, DE)
- The Danish Working Environment Authority (Arbejdstilsynet)
- Financial Services' Union (Finansforbundet)
- Association of Lawyers and Economists (DJØF)
- Confederation of Danish Industry (Dansk Industri, DI)
- Trade and Labour (Fag Og Arbejde, FOA)
- Local Government Denmark (Kommunernes Landsforening, KL)

Estonia

- Estonian Trade Union Confederation (Eesti Ametiühingute Keskliit, EAKL)
- Estonian Employers Confederation (Eesti Tööandjate Keskliit, ETKL)
- Confederation of Trade Union of State and Local Government Employees (Riigi- ja Omavalitsusasutuste Töötajate Ametiühingute Liit, ROTAL)
- Ministry of Finance (Rahandusministeerium)
- Estonian Nurses Union (Eesti Õdede Liit, EÕL)
- Estonian Communication and Service Workers' Trade Union (Eesti Side- ja Teenindustöötajate Ametiühingute Liit, ESTAL)
- Pro Trade Union (Ametiühing Pro)

Spain

- General Workers Trade Union (Unión General de Trabajadores, UGT)
- Federation of services, mobility and consumption of General Workers Trade Union (Federación Servicios, Movilidad y Consumo, Unión General de Trabajadores, FeSMC-UGT)
- Public Services Federation of General Workers Trade Union (Federación de Servicios Públicos de Unión General de Trabajadores, FeSP-UGT)
- Trade Union Confederation of Workers (Comisiones Obreras, CCOO)
- Federation of Services of Trade Union Confederation of Workers (Federación de Servicios Comisiones Obreras, CCOO)
- Federation Citizenship Services of Trade Union Confederation of Workers (Federación de Servicios a la Ciudadanía de Comisiones Obreras, FSC-CCOO)

- Spanish Confederation of Employers' Organisations (Confederación Española de Organizaciones Empresariales, CEOE)
- Banking Spanish Association (Asociación Española de la Banca, AEB)
- Federation of Assistance for Dependent Persons (Federación Empresarial de la Dependencia, FED)
- Spanish Association of Consultancy Firms (Asociación Española de Empresas Consultoras, AEC)

Portugal

- Popular Party (Partido Popular, CDS)
- General Confederation of the Portuguese Workers (Confederação Geral dos Trabalhadores Portugueses - Intersindical Nacional, CGTP)
- General Workers Trade Union (União Geral de Trabalhadores, UGT)
- Confederation of Portuguese Business (Confederação Empresarial de Portugal, CIP)
- Confederation of Portuguese Tourism (Confederação do Turismo Português, CTP)
- National Association of Metallurgical and Electromechanical Companies (Associação Nacional das Empresas Metalúrgicas e Eletromecânica, ANEME)
- Union of Industries, Energy and Waters of Portugal (Sindicato das Industrias, Energia e Águas de Portugal, SIEAP)
- Association of Portuguese Banks (Associação Portuguesa de Bancos, APB)
- Union of Bankers of the South and Islands (Sindicato dos Bancários do Sul e Ilhas, SBSI)
- Union of Portuguese Mercies (União das Misericórdias Portuguesas, UMP)
- Union of Technicians of Diagnosis and Therapy (Sindicato dos Técnicos Superiores de Diagnóstico e Terapêutica, SINDITE)