



DEEPVIEW

Final Report

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Introduction

Research find that an increasing number of employers are using new ways or work and organisation facilitated by New Information and Communication technologies¹ (ICT). According to Popma (2013), 25% of workers in Europe could be described as ‘e-nomads’ or at least having the possibility of mobile working, as a result of the extended availability of internet access and the increase of the number of mobile phones and tablets that enable to work anywhere. More recently, Eurofound and ILO (2017) find that telework and so-called ICT (T/ICT) mobile work is increasing in most of the countries. The study finds, based on data from the European Working Conditions Survey (EWCS), that around 17% of employees in Europe were doing some T/ICT based mobile work 2015. The study also found some variations on the incidence of T/ICT across countries (Nordic countries recording more incidence) sectors and professions, being more 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 individual are associated to increased autonomy and the possibilities to reconcile work commitment 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 been also identified. In this sense, there is a great rang of literature that has identified negative effects on several dimensions such as working time, including working long hours, informal and unpaid work or working-life conflict (Cousins and Robey, 2013; Chelsey, 2014; Dén Nagy, 2014; Eurofound&ILO, 2017); health and safety and well-being (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, although can result in more workers’ autonomy, have been also associated to new forms of control and surveillance (Kesselring, 2014; Koslowski, 2016; Mazmanian et al., 2013). These analyses thus reverse the various positive effects identified by the optimistic analysis on the impact of ICT on work: autonomy becomes dependence and embedded in more surveillance managerial practices, as ICT may permit constant and intrusive supervision, extended to workers’ home; working time flexibility would extend work activities to “social hours”, affecting the real possibility of developing social relations.

In parallel, technological transformation is also affecting traditional 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 increasing monitoring and enhancing control over the workforce (Rosengren, 2018).

The existence of different advantages and drawbacks associated to technological transformation impacting stationary jobs (which become mobile) and traditional mobile occupations (which become digitalised or virtualised), make this a key topic for social dialogue and collective bargain-

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 in the end of the 1990s and early 2000s, was completed by a third ICT generation that include 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).

ing. However, how social dialogue and collective bargaining is addressing digitalisation and virtual work is an issue that remains to some extent unexplored, especially at company level and in relation to traditional mobile occupations.

DEEP VIEW project aims at favouring a deeper understanding on how social dialogue and collective bargaining at European, national, sectoral and company level is addressing the challenges of work transformation due to New ICTs with the aim of promoting productive and decent virtual work. In this study, the concept of virtual work is used to cover those work arrangements in which workers who work in traditional stationary jobs choose 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 require the usages of Internet, computers or other ITC 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/relationship. Thus, those forms of virtual work that entail different employment relationships (crowd work, etc.) are not covered.

The report presents the outcomes of the DEEP VIEW project. It first conceptualises virtual work, provides research questions and explain the methodology followed. The following sections present the outcomes for what concerns 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 or 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 origin of the scientific literature on 'ICT enabled mobility' work arrangements can be tracked in Jacks Nilles' (1975, 1988) and Alvin Toffler's analysis (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', were drawn 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 a vast dispersion of the Internet and the World Wide Web, 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 through which work can be carried out at different workplace (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, 2015) which 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 blurring boundaries between life and work (Dén-Nagy (2014), health and safety (Tavares, 2015), training and knowledge sharing (Taskin and Bridoux, 2010)), overtime, surveillance, etc. (Eurofound, 2018)

As most of the recent studies have focused on ICT enabled mobility, there is a research gap with regard to the impact and implications of ICT on those traditional occupations and industries where mobility is not made possible by ICT but 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 empirically observed; and due to its class and gender biased approach which focus 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). In this sense, it is worth noting that statistical evidence on the prevalence of mobile multi-locational work is far from the alleged potentialities raised in 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, its frequency is much lower than the observed in the traditional mobile occupations and it is systematically related to home-based telework work. This finding would be related to the fact that only a low proportion of tasks are truly 'anytime, anywhere': mainly those requiring little or no direct communication and few lightweight materials. Moreover, additional technological, practical and cultural constraints make complex to carry 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). Typologies have however 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 it is required by the labour process.

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

The focus of DEEP VIEW project is on **mobile virtual work**, covering both ICT-enabled mobility and mobility for operation reasons. It therefore studies: 1) work arrangements in which workers who work in traditional stationary jobs choose to work in a different workplace (home, transport, public spaces, etc.) by using ICT tools; and 2) 1) work arrangements where work is physically mobile due to operational reasons and require the usages of Internet, computers or other ITC tools (tablets, smartphones, etc.). In terms of employment status, the project concentrates on works who have an employment contract/relationship. Thus, those forms of virtual work that entail different employment relationships (crowd work, etc.) are not covered.

At cross-sectoral level, the project focuses on 'ICT enabled virtual work'. With a view to study virtual work requiring mobility for operational reasons, the study selected some sectors in which at least some occupations work in the field, as described under 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 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 'social partnership' model (Visser, 2009), with relatively weak trade union organisation (27% of density rate in 2013 according to ICTWSS data) but centralised levels of collective bargaining ensuring high coverage (98% in 2013 according to ICTWSS data), and highly institutionalized forms of employee representation at the firm level (Eurofound, 2018). Denmark, as the remaining Nordic countries, is defined as a model of 'organized 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 Portugal have been generally classified under so-called state-centre 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, last year available), within centralized 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 matched in these two countries with low trade union densities (Eurofound, 2018). Finally, Estonia has been classified

within a residual, less clearly defined 'Mixed' or 'Transitional' model in 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 according to ICTWSS data) and rare or absent concertation. At institutional level, Estonia presents a very uncoordinated and decentralised collective bargaining system.

As regards the sectors, the selection is based on two criteria: one related to the relevance of virtual work and its documented impact on working conditions; and the other is related to the diversity in terms of workforce characteristics, employment and working conditions and working mobility types. Most of the studies have identified financial sector, communication and information activities are those among which virtual work forms are more widespread (Eurofound and ILO, 2017). Recent research also suggest that ICT work is becoming more widespread in alternative sectors. In this sense, it is worth noting the changes observed in the home health care sector. Health care and especially home care is traditionally a sector in which mobile work takes place. Home care nurses, and other workers such as (para)medical professionals, e.g. physiotherapists, as well as voluntary carers, provide care for patients at home, and also may work on shared spaces such as hospitals (i.e. the employers' facilities) with a view to coordinate their activities (attend meetings, report and share information about the patients with the doctor, etc.). More than one decade ago, it was recognized in the health care sector that the professionals, and also the patients, have been relatively slow regarding uptake of technological innovations in the field of ICT (Wiethoff et al., 2006). However, innovation in different countries appeared in the last decade. Today, nurses and carers dispose of several IT-systems which allow them to communicate with the patients, get in contact with colleagues to ask questions or share knowledge and get access or enter information about the patient from different locations. As a result of these technological developments, some home health care workers who always were 'mobile workers' are becoming 'virtual workers'. These trends make care sector an interesting case to be explored. Besides, workforce characteristics, employment and working conditions in this sector differ from those existing in knowledge sectors traditionally studied (Verburg et al. 2016). Bearing this in mind, the project will cover the following three sectors:

- Financial activities: it mostly covers activities embraced by NACE code 64, that is Financial service activities, except insurance and pension funding
- Computer programming, consultancy and related activities: it mostly covers activities embraced by NACE code 62
- Home health care activities: it covers:
 - In terms of activities, home health care activities (for example, for elderly or disabled individuals), excluding residential care and childcare services.
 - In terms of occupations, nurses, healthcare assistants and auxiliary care workers (medical doctors are excluded) who work on a regular basis on 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 employment challenges due to New ICTs and virtual work in different countries and sectors?
2. How have the effects of virtual work on working conditions been addressed in the 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 field work.

The main purpose of desk research was to provide a clear picture of the ‘state of the art’ in the involved countries and sectors for what concerns incidence and 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 both national, sectoral and company level. Desk research findings were presented in standardised national reports, that were the basis for the comparative preliminary report published in the website of the project.

Fieldwork involved the conduction of semi-structured interviews and company mini-case studies. The objectives of the semi-structured interviews were: to fill gaps from desk research; and to gather in depth information on how peak-level and sectoral trade union and employer organisations frame and understand the challenges brought by new ICTs and virtual work in work organisation and working conditions (research question 1); and on their different proposals and views to address problems and challenges associated to virtual work, identifying main agreements and contested areas (research question 2).

A total of xxx semi-structured interviews were conducted in the five countries studied with head of units or senior officers of peak-level and sectoral social partners.

With regard to the mini-case studies, three cases per country were conducted (1 per sector, 3 per country, 15 in total). Mini-case studies were aimed to analyse ‘good social dialogue practices’ at company level aiming to promote productive and decent virtual work by gathering in-depth information on (research objectives 3 and 4; research question 3). The definition of ‘good practices’ was pragmatically contextualized. 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 the followings:

- The practice deals with an aspect of virtual work which is connected to relevant national and sectoral debates and problems.
- The practice is oriented towards the promotion of decent virtual work, addressing therefore some employment and working conditions in which virtual work may have negative impact.
- 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 main employee representative and trade union bodies that may exist in the company.
- The practice has shown positive outcomes in the view of both, managers and employees’ representatives or trade unions or, in case has been recently introduced, it generates positive expectation for both, company and trade unions’ representatives.

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

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

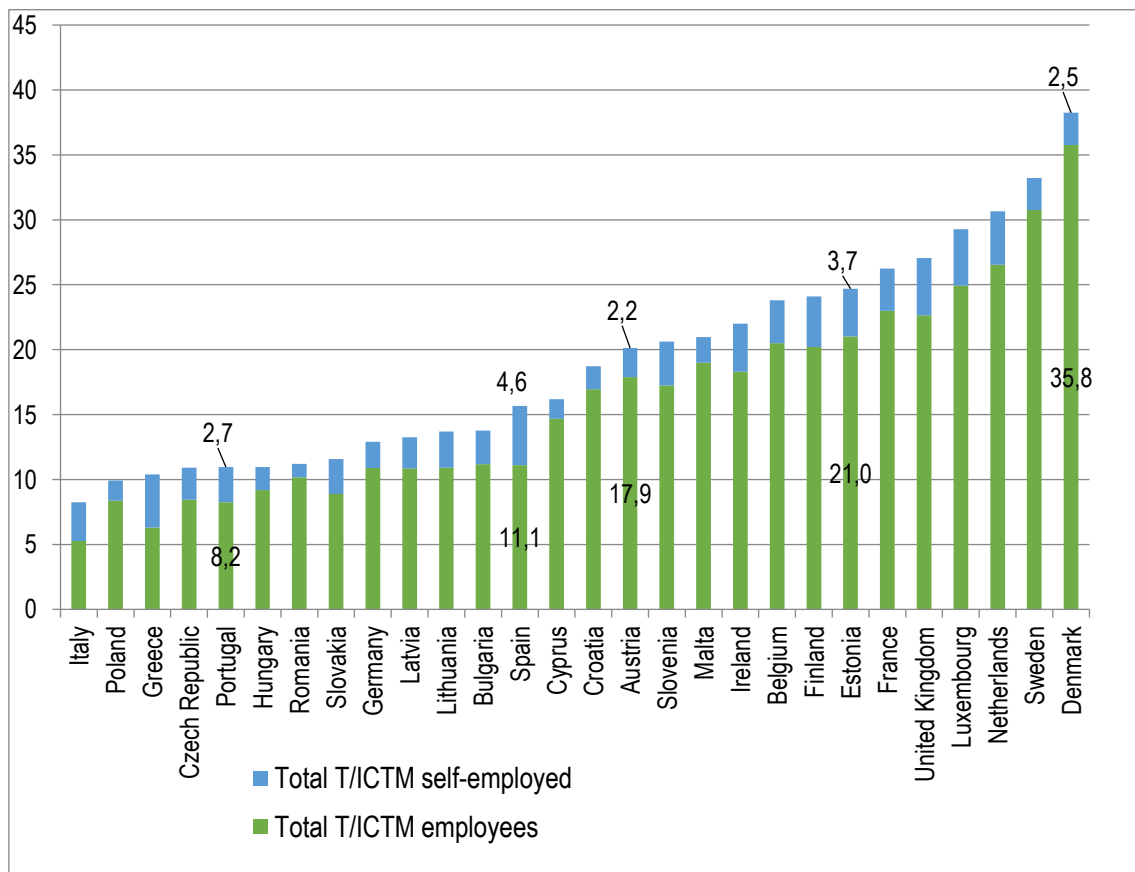
2. Virtual work at cross-sectoral level

This section focused exclusively on ‘ICT enabled virtual work’, which include those work arrangements in which workers who work in traditional stationary jobs choose 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, particularly, home health care 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 comparatively, the report uses data from the Sixth European Working Conditions Survey (EWCS) and assumes the definition of telework/ICT-Mobile work (TICTM) by Eurofound and ILO (2017) as a proxy for virtual work. TICTM 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 TICTM across the EU 28 countries, distinguishing TICTM employees and self-employed. Data shows that Denmark accounts for the highest share of TICTM 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 virtual work self-employed.

Figure 1. TICTM work in EU countries by employment status, 2015 (%)

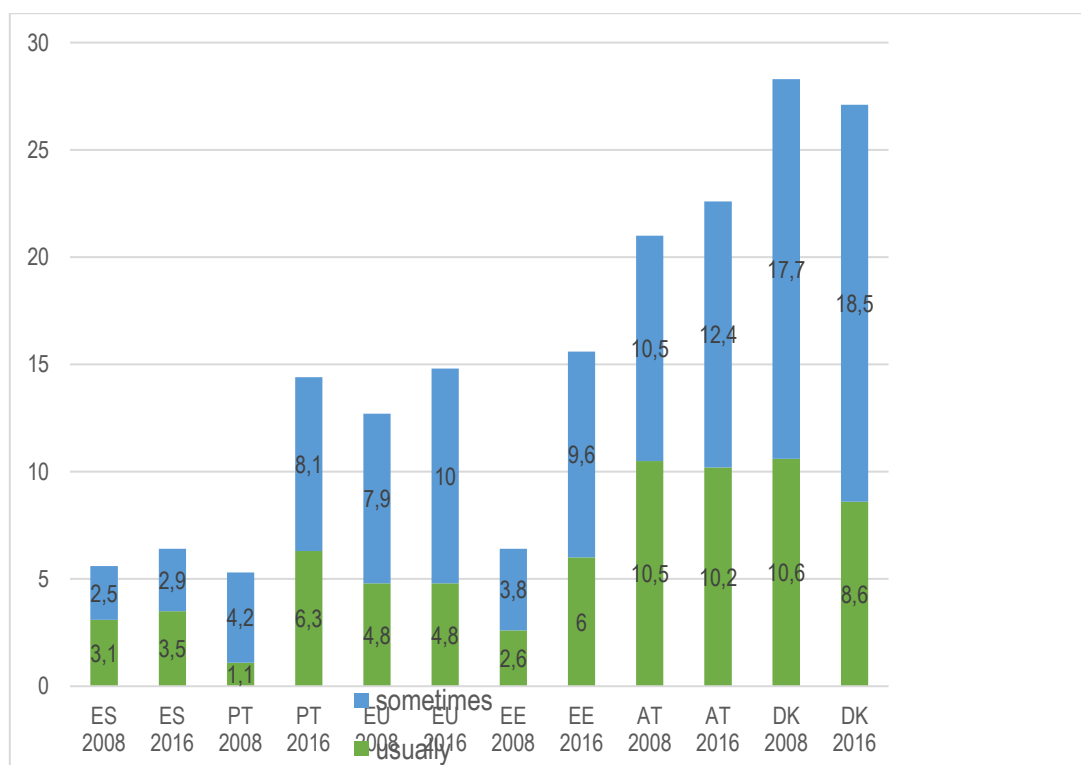


Source: European Working Conditions Survey, 2015

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. The estimation for the period 2008-2016 shows a general trend towards the extension of this work arrangement, which is especially acute 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 3. Employed persons working from home sometimes/usually as a percentage of the total employment, (%) 2008 and 2016



Source: 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 on 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% vs. 75.5%). Data from 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 at another place (12.1%). Male employees more often work at a different place (32.1%) than at 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 across different 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), smartphones, 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 homework: 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. Drawing on this source, the Ministry of Social Affairs (2017) used the term telework, defined as 'work arrangement whereby the employees work occasionally outside the regular premises of the employer'. The study reveals that 20% of Estonian employees had worked outside of the employer's premises during the four weeks that preceded responding to the survey (not considering client meetings and other work-related trips). The survey shows gender differences, (24% of male compared to 16% of female employees). Those results are in line with EWCS survey estimation 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. Estonian Work Life survey show 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%). The survey was also conducted in 2009. Comparison between both surveys shows that TICTM employees has remained very stable but the average time spent in TICTM 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 type of legal contracts for home-based telework. The source reveals a declining trend in the use of home-based telework contracts. The total figure of this 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 appear not to be a reliable indicator to assess the actual extent of virtual work, since most of these work arrangements can be indeed adopted in the context of other agreements or informal practices.

In Spain, an alternative national 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 (January) provided data on the percentage of companies with employees connected to the company's ICT systems by 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 compare its evolution in 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's ICT systems through external telematic networks (27%). Data show 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 partners’ debates at EU level

At EU level, there are not specific directives focused on virtual work. However, several have addressed issues which are crucial for workers subject to ‘ICT enabled’ virtual work. For instance, EU Working Time Directive (Directive 2003/88) includes provisions aiming to protect health and safety of workers (maximum of 48 working hours per week, etc.), including those performing virtual work. Besides, the OSH Framework Directive (Directive 89/391), aiming to encourage e improvements in the safety and health of workers at work, does not distinguish the work location when it comes to apply its provisions.

Main European regulation addressing virtual work has been focused on ‘telework’. The regulation of telework was accomplished in year 2002 through the conclusion of an autonomous agreement of the European social partners. It was one of the first two autonomous European-level agreements to be implemented according to the ‘procedures and practices’ specific to each Member State². This is one of the two options for the implementation of EU agreement negotiated by the European social partners provided in the Treaties and it commits the affiliated national organisations to implement the agreement in each appropriate level of the system of collective bargaining of their respective countries. In contrast to the incorporation of EU directive, whereby the negotiated agreement is transformed into an EU directive, which must be transposed into national law, this form of implementation is not legally binding and so greater diversity is expected in its implementation and effectiveness, given the diversity of national contexts of industrial relations.

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), were that:

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

² Currently there are 5 autonomous agreements: telework, work related stress, harassment and violence at work, inclusive labour markets, and active ageing (<https://ec.europa.eu/social/main.jsp?catId=521&langId=fr&day=&month=&year=§orCode=SECT36&themeCode=&typeCode=ATYP10&recipientCode=&mode=searchSubmit&subscribe=Recherche>)

- 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 an ICT enabled mobility arrangements, covering only those stationary jobs that can also be performed at the employers' premises. Work done using ICT which entails mobility for operation 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 (in case mobility is not required for accomplishing the work)

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

- Voluntarily 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 pass 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 to ensure 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 about 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 teleworker uses her/his own equipment
- Health and safety: the employer is responsible for the protection of the occupational health and safety of the teleworker.
- Organisation of work: teleworker manages the organisation of his/her working time under the limits of national legislation and collective bargaining. In principle, a teleworker can decide himself when to start work, when to take a break and when to finish work although, as noted by ETUC, 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 been also included in the agenda of European trade unions at both cross-sectoral and sectoral level. ETUC has addressed virtual work within the broader debate of digitalization. In June 2015, the ETUC issued a Preliminary assessment about the digital agenda of the European Commission. The first resolution of the ETUC executive committee judges the Commission approach to be too narrow and excessively focused on market issues, such as technical standards and qualifications, and stress the need to take into account broader aspects of the digitalisation. These include the protection of personal data, the social impact of digitalisation on working conditions and the risks of development of precarious digital work and the anticipation and management of transitions. In June 2016, the ETUC adopted a resolution on digitalization: "Towards a fair digital work" by which European Trade Unions claim for an inclusive transition towards a fair digital work, digitalisation that does not reinforce

inequalities, the need of upskilling the workforce and the need to incorporate the gender dimension. In parallel, the ETUC together with some European sectoral federations has held meetings with the European Commission in order to promote policy processes and the need to mobilize Sectoral Social Dialogue to promote the participation of workers in the debates on the impact of digitalization on the economy and working conditions. The debates within the European trade union movement were followed by debates at the level of European Parliament and also with the participation of the Foundation for European Progressive Studies (FEPS) that resulted in a collective publication (Wobba, 2016). On the employer side, Business Europe has also published several position papers on the topic, demanding, among other things, to assess how best to adapt labour markets and work organisation in order to derive maximum benefits of the digital transformation. To this aim, Business Europe (2015) claims that working time and employment regulations should be sufficiently flexible to support businesses competitiveness in the digital age, enabling companies to react quickly and flexibly to customer requirements.

2.3 Social partners' debates and countries' approach to regulate virtual work

2.3.1 Social partners' debates and discourses on virtual work

The specific topic of virtual work, as defined in this project, does not constitute the core of social partners' 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 aiming to further regulate virtual work (telework, etc.) in recent years. Generally, main bipartite and tripartite social dialogue discussions (including joint reports drawn by tripartite bodies) have been framed under 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 impact of digitalisation on atypical forms of work (Spain and Portugal).

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

Trade unions tend to critically assess recent trends regarding virtual work. In the countries analysed, trade unions stress drawbacks and, to a lesser extent, potentialities of virtual work to improve living and working conditions. The main challenges and drawbacks identified by trade unions are related, first, to the negative impact on several working conditions dimensions. This includes:

- Working time: trade unions in some countries (notably Austria and Spain) expressed concern on the growing number of workers who rely on ICT tools such as smartphones, tablet 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. 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 in working time and wellbeing.
- Work intensification: this problem was also related to the rise of casual or informal virtual work. Trade unions in Spain or Denmark noted that work intensification can increase due to ICT meanwhile the right of virtual workers to 'disconnect' is not explicitly regulated
- Work-life balance: although virtual work is generally framed as a flexible arrangement which can contribute to improve work-life balance, trade unions in several countries

pointed that home-based telework, which is normally the most common virtual work arrangement, can lead to blurring boundaries and increased interferences between work and family demands. In some countries (Austria), trade unions critically pointed that due to gender inequalities in unpaid care work, promoting telework or similar virtual work arrangements as a way to improve conciliation can perpetuate the problem of women subjected to the double burden of work and family responsibilities.

- Health and safety: trade unions find that 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 schedule hinders their capacity to recruit, represent and enforce workers' rights. Some trade unions have a more remarkable critical discourse (General Confederation of the Portuguese Workers -CGTP- in Portugal), which frames virtual work and, particularly, 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 denounced that 'telework' is often used by employers as a tool to send workers home prior to a dismissal.

Third, the extensive forms of control 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 workers and individual rights (privacy, etc.)

Fourth, trade unions discussed in the interviews the problem of segmentation and inequality which, in a general context characterised by the high degree of informality around newly virtual work arrangements beyond 'regular telework', is fostering polarisation 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 improve 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 the countries stressed the need for collective regulation to handle inequalities. The demand for recognising the right to 'voluntary virtual work' (home-based telework, etc.) claimed in some countries (Austria) is also related to the problem with inequalities. As pointed by trade unions representatives interviewed, the fact that virtual work arrangements are still represented as a 'reward' instead of a right, lead workers to accept arrangements which do not meet health and safety standards, thus working under unsatisfactory or worse ergonomic workplaces.

Fifth, some trade unions are concerned on the need to update management skills to properly face with virtual workers who have more work autonomy and discretion. This matter was highlighted by main Danish peak-level trade union representing white collar/academic workers (Akademikerne), given the fact 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 unions discourses on virtual work show also some cross-country variation. Trade unions in Austria, Denmark and Estonia referred to some positive responses that virtual work may offer to respond to some demands that employees are concerned about, mainly related to work-life balance. Moreover, Estonian peak-level trade union agree with employers on the need to combat company resistance to virtual work arrangement with a view to give a response to the high proportion of employees who do not have access to virtual work arrangements but who

would be interested to have. On the contrary, in Spain and Portugal³ trade unions tend to connect virtual work with precarious working conditions in a general context of downward pressure on working conditions and change in 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' narrative, virtual work is generally represented as a worker demand which, similar to other flexible work arrangements, is intended to improve working conditions and, particularly, employees' capacity to combine work and family responsibilities. When asked about trade unions' demand 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 pointed by some employer organisation is related to the cost of the equipment. With this regard, employer organisations point that cost for IT infrastructure have dropped significantly since the EU framework agreement on telework was established. Moreover, employees are opting for more flexible and sporadic arrangements. Accordingly, they find that the employer responsibility for providing, installing and maintaining the equipment should be revised or adapted to the variety of specific circumstances.

Employer organisations also stress how important is to find a 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 to enforce health and safety standards when employees work in alternative workplaces.

Finally, attention should be drawn to the fact that **trade unions and employer organisations tend to differ also 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 for 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 of 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 arrangement they are demanding to get a better work-life balance. Generally, peak-level employer organisations argue that it is the company the most suitable level to discuss the regulation of virtual work arrangements, either through collective bargaining or through individual negotiations.

2.3.2 Social dialogue and Collective bargaining regulation

In the five countries studied, EU framework agreement on telework (2002) still constitutes the main reference for the regulation of virtual work through collective bargaining. Even if trade unions in some countries (particularly in Austria, Denmark and Spain) perceive that this framework should be updated with a view to address newly virtual work arrangements and

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

additional challenges brought by ICT, no any other industrial relations' regulation has been discussed at cross-sectoral level⁴.

In Austria, Denmark, Spain and Portugal, the EU framework agreement was formally adopted in the 2000s, albeit through different approaches. In Austria and Denmark, it was been 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 while in Denmark, peak-level social partners concluded a so-called 'cooperation agreement' in 2006 aiming to implement the agreement in those sectors and workplaces uncovered. It is also worth noting that in Denmark, telework was substantially addressed in several sectoral agreement prior 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 agreements only provides non-binding recommendations and guidelines for lower level collective bargaining. Due to this, it has been labelled as 'agreements to agree' (Visser and Ramos Martin, 2008) and is considered softer forms of regulation than sectoral or company collective agreements (Eurofound, 2010). On the contrary, 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.

The degree of implementation of the EU agreement through collective bargaining greatly varies also across these four countries. It is implemented in around 90% of sectoral collective agreements in Austria and Denmark through a more comprehensive regulation (particularly in Austria) (ETUC, 2006; Eurofound, 2010), while in Spain and Portugal its implantation has been scarce, mainly applying to a few sectoral and company collective agreements. In Spain, lesser than 5% of company agreements and 3% of sectoral agreements included a clause on telework, according to Collective Bargaining Statistics of 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-employers and seven single-employers). In these former two countries, social partners interviewed informed that virtual mobile work arrangements are implemented through HRM practices or more informal practices.

In the case of Estonia, the EU agreement was implemented in 2017 through a cross-sectoral framework bipartite agreement. According to peak level bargaining parties interviewed, the agreement was concluded with a view to cover regulatory gaps of statutory legislation. Thus, it was intended to offer better protection to the comparatively high and growing proportion of employees opting (and demanding) for ICT-enabled mobile virtual work arrangements. Social partners positively assess the EU framework agreement, which is generally reproduced in the national agreement 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 (ETTK), employers' have been struggling with teleworkers who do not fulfil the occupational health and safety regulation for years. ETTK representative interviewed argues that for employers, it is very challenging to enforce health and safety under telework

⁴ In Spain an agreement covering several sectors which goes beyond telework was recently concluded by peak-level trade unions and Employer association AMETIC, representing companies from digital industry. This agreement established a protocol for the development of a pilot project prior to the introduction of a new technology in order to assess its impact on the 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 sector in the economy and extend beyond the use of mobile devices considered in the Deep View project.

arrangements. Accordingly, ETTK is against EU framework agreement provisions that attributes to the employer the responsibility for protection of the occupational health and safety of the teleworker. In the national agreement, social partners agreed that teleworker is responsible for following the occupational health and safety rules set by the employer. Additionally, that employer and employees' representative will have to be able to check whether employee is following the rules. In April 2018, the Ministry of Finance concluded a telework agreement with Trade Unions of State and Municipal Agencies Employees (ROTAL) stating that public sector must develop hand in hand with the private sector and be more flexible in working conditions. The agreement resembled to social partners telework agreement and referred to same principles.

The implementation of the Estonian framework agreement on telework has been scarce. Since the agreement was concluded, there hasn't been any extra steps taken regarding the regulation or raising awareness about virtual work. Peak level trade union interviewed (Estonian Trade Union Confederation, EAKL) attributed this the lack of financial resources.

Box 1. Estonian cross-sectoral agreement on telework

In June 2017, social partners concluded a joint agreement on teleworking. The agreement was concluded 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 are less depending on specific work place, but rather on the internet availability. Secondly, the current legislation did not provide enough regulation related to teleworking. Thirdly, the aim was to implement the European level social partners' framework agreement on telework from July 2002. Overall, the joint 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 more and more facing the problem to find 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 ground where good practices are built and based.

The agreement includes 10 "rules" related to 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 do other 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. Also, that employee should not experience any decrease in their income due to teleworking meaning for example that 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, employee should be free to choose the working hours. Also, that teleworkers have the same rights to participate in work-related education and training, have access to information regarding assignments and should have the possibilities for regular meetings, elect employees' representatives and be nominated at the elections and be taken as a regular colleague and not feel isolated from other employees. For employers, most troublesome part of telework is related to health and safety issues and more specifically, how to ensure employees' health and safety when working outside employers' premises. For that, social partners agreed that teleworkers have to follow the information on safety rules that the employer has set, and that teleworker is always responsible for following the occupational health and safety rules set by the employer. Additionally, that employer and employees' representative will have to be able to check whether employee is following the rules.

Source: Estonian field work 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 drawn to the provisions of the Data Protection Act 2018 (particular 96a) within the Labour Constitution Act (ArbVG). This provision established that works council (but also employer) has the right to demand a company collective agreement for the introduction or implementation of the following data processing projects: projects related to installation of any technological facilities at work, which are (potentially) likely to monitor employees and affect human dignity (Sect. 96 (1) Nr. 3 ArbVG); implementation of a system for the computerized collection, handling and processing of the employees' personal data, which exceeds the collection of the general data of the person and its qualifications. (Sect. 96a (1) Nr. 1 ArbVG); and implementation of a system for the evaluation of the employees, if data is collected, which is not justified by operational needs (Sect. 96a (1) Nr.2 ArbVG). The regulation or working time or desk sharing, which are also relevant issues for what concerns virtual work, are also subject to enforceable collective company agreements. In Denmark, there are only 'Guidelines for telework or homebased work' (WEA 2014) under Act on the Working Environment, which regulates health and safety issues for all the 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 Employment Contracts Act. This act provides a broad definition of telework which does not specifically mention the use of ICT, and only establishes company obligation to implement the arrangement through a written agreement. Similarly, 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 formalized through a written agreement. As in Estonia, 'distance work' definition does not specifically mention the use of ICT but, as opposed to this country, a broader regulation is found which addresses equal rights between teleworker and traditional works, health and safety protection and representation rights. Labour rights and employers' obligations were established, in some respects, in a less developed form than the EU Framework Agreement (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 regard to Portugal, the government regulated telework in the labour code in 2003 and in successive reforms. According to the article 165 of the 2009 Labour Code, 'telework shall mean work rendered under legal subordination, usually outside the employer's premises and with resource to ICT'. Portuguese statutory regulation deals with several of the topics addressed at the EU agreement such as treatment of teleworkers in relationship with 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 subordinated telework, named 'regime de contrato para prestação subordinada de teletrabalho', 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 the indication of who is charged with 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: workers with children up to the age of 3 today have the right to move from the common labour regime to teleworking (home-based virtual work), on a temporary basis, and provided that this change is compatible with the activity carried out and with the employer's resources⁵ (Ramalho

⁵ Article 166 (3) of the Labour Code, as amended by the Law 120/2015 of 1 September

2019). This contract has however been barely used: there were only 850 telework contracts in 2016 according to Quadros de Pessôal administrative source

Box 2. Digital rights through statutory regulation in Spain

The passing of the new **Law 3/2018, of 5 December on the Protection of Personal Data and the Guarantee of Digital Rights** is seen as a positive development with regard of the recognition of 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 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) and geolocation systems (Art. 90) The Law acknowledges the employers' right to access and to the use of 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). The Law does not determine however the extent of their involvement.

- **Art 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 for private and public employees the right to disconnect outside working hours in order to guarantee employees work-life balance and preserve the privacy of their private life.

Particularly, the Law states that it shall be preserved the right to disconnect 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 reasonable use of ICT tools. This policy shall be drafted jointly with employees' representatives.

Therefore, it is a right whose realisation is contingent on its development through collective bargaining.

- **Article 91 on the Digital rights in collective bargaining.** According to the text 'Collective bargaining may provide additional safeguards to the rights and freedoms associated to the processing of employees' personal data and the protection of digital rights in the workplace'.

Source: Spanish field work 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 them, namely Spain and to a lesser extent Portugal, this form or regulation has generated greater controversy among the trade unions.

In Austria, trade unions positively assess statutory legislation which reinforces trade work council's capacity to regulate virtual work at company level through the provision for enforceable company agreement in case of the introduction of digital projects which are likely to be used for performance assessment. Although there is a general consensus on the governance approach toward 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), similarly to the legal provision in Article 97/1 of the ArbVG on temporary agency work. Since the Austrian Federal Economic Chamber (WKO) strictly opposed any legally binding regulations laid down by national law, this initiative has failed so far.

In Denmark and Estonia, main social partners discussions have concentrated on health and safety legislation directly or indirectly affecting virtual workers. In Estonia, regulation is going to be

modified through an amendment of the Occupational Health and Safety Act, in line with employer organisations demands. According to Estonian employers, the regulation of the virtual work through legislative increase the workload of the Labour Inspectorate who 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). Amendment stipulates the right to conclude an agreement between the employer and employee doing telework on contractual penalty in case the employee does not fulfil the occupational health and safety regulation (ibid.). Thus, the aim of this stipulation is to act as a deterrent and guide for employees to fulfil the occupational health and safety regulation. With this, Estonia is going to confer this responsibility mainly to employees while employers will still have to arrange instruction and training for employees. 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 focus on physical factors, trade unions claim for a new executive order on social and organisation work environment, which should include psychosocial risks associated to more flexible work arrangements such as virtual work. On the contrary, the main peak-level employer regulation opposes stricter and comprehensive regulation. Going further, it holds that Work Environmental Act is a rigid regulation which inhibits virtual work, by requiring the 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 and governance resting on 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 employers' ability to unilaterally regulate working conditions (Fernández Rodríguez et al., 2016). In Spain, trade unions critically reacted to distance work regulation introduced in 2012, stressing the need of maintaining the approach of the EU Framework Agreement on Telework (particularly with regard to the definition) and relying on collective bargaining for its implementation. On the contrary, 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. Recent statutory legislation conferring workers new digital rights is positively assessed by trade unions, although they are concerned on the difficulties to enforce those rights, particularly among SMEs which generally lack work 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 outputs from social partners prompted the Christian-democrats (CDS) to present three proposals during the last legislature to stimulate virtual work in the parliament. However, all proposals were rejected by the left-coalition that supports the Socialist government in the parliament. The present socialist government stated that virtual work is a topic for collective bargaining, not government regulation. Trade unions agreed on this position, as they disapprove government interference in the regulation of virtual work. Nevertheless, they stress that to achieve balanced agreements regulating virtual work, government should amend legislation reinforcing trade unions' bargaining power (particularly, rules of expiry of collective agreements). Employer organisation also agree that the statutory regulations that exist are enough and do not require further developments but, as opposed to trade unions, they 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 partners 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 regulation of virtual work at

sectoral or company level and extent or improve statutory legislation. In some cases, they have also commissioned studies on the topic.

In Austria, where sectoral and company collective bargaining has a long tradition of well-established telework regulation. In this country, it is worth noting the role played by the Advisory Board for Work and Technology (BAT), which is a body within Union of Private Sector Employees, Graphical Workers and Journalists (GPA-djp), in charge of providing knowledge and proposals in relation to the topic of how technology shapes the world of work. BAT is discussing and elaborating regulatory proposals for sectoral and company collective bargaining for better data protection, data security and protection against digital surveillance, as well as for co-determination when new technologies are introduced. Recently, BAT published two brochures, “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 flexibility in work organisation and work processes in general, and digitally shaped work organisation and work processes.

In Denmark, peak-level trade unions (Confederation of Danish Trade Unions -FH- and Akademikerne) have jointly worked to update health and safety state regulation (working environment regulation) by including social and organisational work matters which take into consideration, among other issues, the impact of ICT on working conditions. In addition, Danish trade unions Akademikerne is struggling to address working time and work organisations challenges triggered out by virtual work (right to disconnect, etc.) within main information and consultation bodies at company level (Cooperation Committees).

In Spain, most representative peak-level trade unions submitted proposals to the government with a view to regulate the ‘right to disconnect’ (General Workers Trade Union, UGT) and have - unsuccessfully- attempted to regulate different aspects related to virtual work in the cross-sectoral bipartite agreements, which provides a common framework to be adapted at sectoral and company level (Trade Union Confederation of Workers -CCOO- and UGT). Moreover, trade union foundation 1st of May published a study (Rocha and De la Fuente, 2018) which analyses the role of tripartite of tripartite social dialogue institutions in the face of the challenges entailed by digitalisation has been almost irrelevant.

In Portugal, trade union UGT provides a the template book named “Agreement-type for Collective Bargaining”, proposes to negotiate in collective bargaining beyond the labour code in several aspects, such as: it establishes time-limits for telework as the minimum of six months for telework; it clarifies the digital code of conduct of the employees; it attributes responsibility to the employer about the hardware and digital security; it improves worker’s rights by stating that the activity which he will exercises 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 the purpose of teleworking.

Compared to trade unions, employer organisations have only commissioned studies aiming to enhance 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 Confedeation of Portuguese Industry (CIP) commissioned a research published in March 2019 about “Automation and the future of work”.

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 sector most affected by recent technological transformation, which are framed under so-called FinTech industry. 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 payment but also new business models, such as the peer-to-peer platforms (OECD, 2018:9). According to ILO (2016), FinTech industry, shows the great potential of 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). This source cannot be however used to estimate sectoral data at national level, given the small size of the sample. Thus, the study has only relied on the 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 informed that virtual work arrangements are scarce and tend to be concentrated on high qualified employees and managers. Virtual work (mainly casual or sporadic home-based telework) also affects certain groups of workers in the 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 is not explained because of the lack of technical means. Rather, it is related to concerns such as cyber security and data protection and management resistance.

On the contrary, in Austria and Denmark, virtual work arrangements seem to be more widespread and have increased in recent years, according to social partners interviewed. In Austria, the first wave of telework starting in the early 1990s did not have much impact in the financial sector. However, social partners interviewed indicate a significant change in this regard in recent years. This is attributed to the increasing prevalence of groupware and the advancement of data security means for sharing and transferring of (potentially sensitive) data online. In Denmark, the banking sector has de facto had long traditions for 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 union stressed that very few employees carry out ‘regular telework’. Employees generally opt for more flexible and occasional flexible work arrangements. It is also worth noting that in Austria and Denmark 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 of the banking sector, which is made up by trade union Uni Europa, and employer organisations European Banking Federation -Banking Committee for European Social Affairs (EBF-BCESA), European Saving Bancs 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. 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 advantages of teleworking for the society related to the decrease in pollution or the creation of employment opportunities in remote areas and for persons with disabilities. It is also noted 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’ home, 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 work are not covered

With regard to the content, the EU framework agreement 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
 - Teleworker has to be available within the time period predetermined by the employer in agreement with employee
 - Teleworker can be given opportunity to communicate with colleagues
- Health and safety: the employer needs the on-going 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 have access to telework place (in case it is the 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. In case teleworker uses his/her own equipment, usage is subject to cybersecurity, data protection and other relevant rules.
- Training: the declaration recognises equal right of teleworkers and introduces provisions for training addressed to teleworkers related to this specific method of working, new tasks and roles (how to deal with social contact, cybersecurity issues, etc.)

As shown, the agreement mainly reproduces the EU framework cross-sectoral agreement and does not include newly provisions beyond some nuances. It is also worth noting that the declaration stresses the important role of Social Dialogue in the joint shaping of future world of work.

More recently (November 2018), social partners in the financial sector agreed on a ‘Joint Declaration on the Impact of Digitalisation on Employment’. Declaration addressed the broader topic of digitalisation and considers new forms of work beyond telework. With a view to deal

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

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 to 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, system of industrial relations in the financial sector is markedly different 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 of collective bargaining, since sectoral collective agreements are conducted for most of the subsectors separately (commercial banking, saving 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 (flexibilization of working time, etc.). In Spain and Portugal, collective bargaining at company level also takes place and has negotiated in recent years most of the employment restructuring plans. 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 densities in terms of employees are higher in Austria and Denmark (higher than 90%) than in Spain (44%) and Portugal (64%). Trade union density is much higher in Denmark (85%). In Austria, Spain and Portugal, trade unions are weaker (Eurofound, 2019).

Estonia presents a highly different industrial relation system in the financial sector. Collective bargaining in the Estonian financial sector is non-existent either at sectoral and company level. This is in spite of the presence of a recently established sectoral union in 2013 (Union of Estonian Financial Sector Employees, EFL). The foundation of a new trade union in the financial services was a surprising event, considering the declining trend of union membership in the country. On the other hand, there are no employers' associations in the sector, who would identify themselves as social partner that may negotiate and conclude collective agreements. Moreover, the relationship between trade unions and employers has been difficult for several years. It was challenging for a trade union to negotiate collective agreement with an employer – it resulted in unlawful dismissals, protest actions and numerous conflicts for a couple of years. This has strongly affected social dialogue in the sector. It also came out through the interview that employees in the sector do not feel comfortable stating publicly their membership in trade unions.

3.4 Social partners' debates and discourses on virtual work

The extent to which the topic of virtual work has been discussed by social partners in the financial sector greatly varies among the five countries studied in this project. In Austria and Denmark, debates on telework took place already in the 1990s. Although in recent years, there have not been bargaining processes at sectoral level aiming to further regulate virtual work (including to discuss EU level sectoral joint declarations), social partners in both countries accept that virtual work arrangements are becoming an integral part of work organisations and management policies, as a part of broader changes in work organisation. Compared to Denmark, where virtual work arrangements are negotiated on an individual basis, Austrian social partners agree that new and more flexible virtual work arrangements implemented in the sector require new regulatory approaches developed at company level aiming to update traditional telework regulation, still inspired in the EU framework agreement.

In Spain and Portugal, the EU framework agreement 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 negotiations of new topics such as virtual. 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 times, 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 human resources management (HRM) practices. On the contrary, Spanish social partners, who have been subject to a similar economic context, have entered into the debate of virtual work recently in some subsectors and at company level.

In Estonia, where there are neither sector-related employer organisation 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 relationship and trade unions' difficulties to represent and recruit workers. In this context, sectoral trade unions approached does not have and elaborated discourse yet. Since it has not problematised the topic, it could barely discuss potentialities and drawbacks during the interviews.

As virtual work is not equally widespread among the five countries studied and social partners' experience 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.

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

In Austria and Denmark, main debates stem from the linkage observed in the financial sector in both countries between the increasing offer of virtual work arrangements and the shift towards 'desk-sharing' and 'activity-based' office which provide fewer individual workplaces than the company has employees. Employers in Austria and Denmark see similar advantages in virtual work in terms of savings and reduced costs related to real estate expenses and energy consumption. Trade unions and work council members seem to accept these management approaches but stress the need to strengthen the role of collective regulation in those processes where the extension of virtual arrangements is driven by management strategies of activity-based office (particularly in Austria).

In Denmark, concern on existing health and safety regulation were also raised by employers. As explained under previous section, Danish statutory regulation obliges employers to implement a health and safety assessment and install a fully equipped home office in case the employee does home-based telework more than one day per week. According to sectoral employer organisation, this leads employers to refrain from allowing employees to work 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 informed that it is done informally with no use of collective bargaining mechanisms related to EU-social partners' framework agreement on telework. Surprisingly, trade unions seem to tacitly accept these practices, as they are normally oriented to improve employees work-life balance. Trade union representative from the financial sector interviewed (Financial Services Union, FF) pointed that virtual work is not a conflictual 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 with the spread of unregulated occasional telework among managers and professional staff, which results in non-recognised overtime. In Portugal, the main sectoral trade unions have not even contemplated discussing the

topic, given the urgency of alternative problems (lay-offs, pay and health benefits cuts, etc.). On the contrary, Spanish trade unions attempted to regulate this issue through sectoral collective bargaining in different subsectors in the last bargaining round (2019). It is however worth noting that in the Spanish case, the relationship between non-recognised 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 1990s. Indeed, the obligation for companies to register the start and the end of effective working time that has recently come into force in Spain has coincided with the publication of the ruling of the European Court of Justice requesting Spanish companies the establishment of such a registration system. Significantly, this European decision was the result of a collective conflict originated in the Spanish financial sector⁷.

Further debates beyond virtual work

Finally, it is worth noting that the debate or social partners' interest in some countries has had also a broader scope than virtual work, focusing on the concept of digitalisation. In Austria, the Austrian Chamber of Labour commissioned a study on the impact of digitalisation on Austrian banks which 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 work, 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 channels of relationship with clients that reduce the need for face-to-face interactions and allow for massive cost-reduction strategies. According to recent trade unions' publication, the impact of digitalisation is deepening the reduction of Spanish financial entities that has been fostered by Spanish government and the EU institutions in the context of the financial assistance programme, which has been translated in mergers and acquisitions and the subsequent office closings 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. Interestingly, recent declaration on telework and on the impact of digitalisation on employment agreed in the ESSD of the banking sector has not had any impact in sectoral collective bargaining in the five countries studied.

In Austria, the six sectoral collective agreements existing in the financial sector include a more or less identical passage on telework that was introduced in the 1990s. The passage is very short and only defines the main aspects than 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; 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 shifting 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

⁷ Contrary to a previous ruling by the Spanish Supreme Court according to which it was not required by law for companies to set up a system allowing to verify whether workers worked overtime and whether the employer complied with working time limitations, the CCOO services federation appealed to the European justice, arguing that this obligation derives not only from the Spanish legislation but also from European Law, particularly from the EU Directives on working time and on health and safety of workers.

to the company are maintained, both workwise and socially. In addition, the employee may request a teleworking maximum of 50 per cent 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). This provision is however 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 to virtual work, namely, its negative impact on working time and work intensity. One of the most representative trade union organisations bargaining the agreement (CCOO) has advanced the following proposals to be dealt with in the renovation of the agreement: (1) the implementation of a record system of the effective daily working time that allows for the tracking of employees' workday 'either inside or outside of the workplace'⁸, (2) the implementation of the 'right to disconnect', by establishing clear limits to work activities outside the agreed working time and (3) the regulation of 'distance work' (telework) within the financial companies, as set in the Law 3/2012⁹. The agreement is still being negotiated.

In addition, attention should be drawn to the recent agreement concluded in the saving banks subsector for the implementation of a record system of the effective working time at company level. The agreement was concluded by the trade unions UGT, CCOO and FINE, and the Spanish Saving Banks Confederation (CECA). It provides that in order to ensure the daily record of working time, an online application shall to be installed in all the technological devices owned by the company and made available to the employees – desktop and laptop computers, mobile phones and tablets – or any other mobile device that can be used for work purposes, with the aim to enable every employee to record the working time by her/himself (Art. 1). Additionally, the Agreement provides for the recognition of the 'right to disconnect' and the parties' commitment to address its implementation in the current bargaining rounds for the renewal of the national sectoral collective agreement of the saving bank subsector.

3.6 Collective bargaining at company level: good practices

Since sectoral bargaining only provides a very general and brief regulation of virtual work in Austria, Denmark, it is only recently and partly regulated in Spain and it is not regulated at all in Estonia and Portugal, it is particularly relevant to analyse the role played by company collective bargaining. From the five countries studied, only in Austria company collective bargaining regulates 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.

Under this context, it has been particularly challenging to identify good practices meeting the qualitative criteria established. Indeed, some doubts arise on the extent to which some practices identified by country experts (notably Denmark, Estonia and Portugal) have to 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 state-owned company. The five companies studied have faced technological transformation processes which are to some extent common to the financial sector (digitalisation, FinTech industry, etc.). Those transformation have produced changes in the jobs and skills that are required (an aspect discussed in Portuguese case) and have

⁹ <https://www.ccoo-servicios.es/html/45082.html>
<https://www.ccoo-servicios.es/financiero/html/45304.html>

partly favoured the development of new work organisational approaches relying on flexible work arrangements in. New work organisational approaches do not seem however 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 workforce (branch offices, etc.) are still subject to more traditional work organisational styles. Technological transformation has also been behind the emergence of new business models in the financial sector which, in some cases, derives from mergers and restructuring processes (OCDE, 2018). Restructuring processes have been common to 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. In these two cases, they were related to both technological transformation and economic crisis which deeply affected the sector (Rocha, 2018).

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

Topics addressed: description of the practice

All the cases were selected because they address aspects of virtual work which are particularly relevant at national-sectoral level. They also aim at favouring 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 case studies deal with a highly relevant topic in the financial sector: the implementation of new work organisation principles which combine '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. When the company decided to relocate the facilities to new office space which was set up according to the open-plan concept which, among other issues, offered less workplaces than the bank had employees (about 80 percent), it became clear that telework and alternative virtual work arrangements should be taken by a higher proportion of employees. In this context, joint discussions between employers and work council were oriented to implement virtual work arrangements satisfying actual employees' demands, in order to improve their attractiveness. Compared to previous telework arrangements, new virtual work arrangement introduced enable employees working remotely from home but also from alternative places, in particular on occasional/flexible days (rather than on a regular basis), prior to 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 limits to virtual work outside the company premises due to compliance. The main advantage of the new arrangement for the improvement of working condition lies on its potential contribution to combine employment and family responsibilities and attend unexpected care needs. This is because is the employee who generally decide in a flexible way the day to 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 for what concern virtual work was a bit 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 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 arrangements. 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 maximum 75-80 per cent of the office space was in use at any given time. Thus, it was perceived the need to optimise space and save facility costs by reducing office space by 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 encourage 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 arrangements, which is implemented informally, through ad-hoc communication between employee and head of unit. This arrangement is not concreted in any company document (collective agreement, etc.). As in the Austrian case, the main advantage of the existing virtual work arrangement lies on its contribution to facilitate work and life balance.

In Estonia, virtual work was only partly driven by management strategies of activity-based office. Transition towards activity-based office and promotion/offer of different flexible work arrangements providing space and working-time flexibility were part of a broader plan launched in 2017, so-called New Ways of Working. Transformation in work organisation was mainly designed to enhance employees' engagement and improve company performance, bearing in mind that the main goals were to increase productivity and employer's attractiveness in the job market. However, it also aimed at promoting better working conditions, being explicitly oriented to foster better work-life balance.

In Spain and Portugal 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 complains about overtime. It is also worth noting that the bank studied initiated in 2015 the so-called 'Flex working' scheme. 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 'support work-life balance and improve efficiency'. However, trade unions interviewed informed that those arrangements are mainly used by highly qualified staff from corporate centre. On the contrary, the 'flex working' approach has barely affected management culture and policies in the branch offices. 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 irruption of ICT is entailing an increase of 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 demands outside their regular working time. In this context, the discussion of the right to disconnect was highly relevant to improve working conditions. The regulation of this right is oriented to prevent overtime and work intensity.

Finally, Portuguese practice deals with negative effects on on-going processes of digitalization of work. The case shows how it was addressed the technology-obsolescence of credit workers by reconverting them into 'remote virtual workplaces' inside new employer's premises. In this case, the focus was more to avoid dismissals than to improve working conditions of virtual workers. Workers concerned were affected by the digitization of the processes of credit concession operations and control of bank credit. In the light of those changes, they were relocated to new workplaces which have simple routine cognitive tasks and require to use ICT for simple operations associated with correction of information related to 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, once a month supervision is done by the manager of these operations through videoconference in a meeting with the various groups. Once a year, supervision is done by the credit director personally visiting each group so that they do not feel lost or isolated. The focus of supervision is on the final correction and data entry service by the workers, who mostly work in teams in the capitals of their districts

Participation schemes/ regulatory mechanisms and negotiation process

The scheme 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, changes were

introduced through genuine social dialogue mechanisms. In Estonia, direct voice 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 'project-based office' with flexible virtual work arrangements), is addressed through a different participation scheme and regulatory mechanisms. In Austria, new virtual work arrangements were regulated in a company collective agreement. The conclusion of the agreement was facilitated by the specific statutory framework which established that the works council has the right to demand a collective bargaining regulating 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 by work councillor interviewed: "*We were in the happy situation to say: '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 workplace at the company premises, but only for meetings and special events. Interestingly, negotiations are still active with a view to improve and continuously update company agreement. Work councillor member informed that they are currently discussing to enable 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. Also expected are future adjustments of the maximum weekly percentage of virtual work which will likely be increased.

Compared to Austria, the Danish case offers a less powerful participatory mechanisms. In this case, the company only informed the Health & Safety Committee and the Cooperation Committee (Danish equivalent to work council) on the new management approach associated to the transition towards activity-based office. There was not consultation or negotiation. In this context, virtual work arrangements continue to be implemented informally, through ad-hoc communication between employees and heads of units. 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 department were put in place. In the absence of independent employee representative structures (work councils, etc.), the company implemented information and consultation procedures through working groups led by HRM department. With regard 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. Main tool was an online survey mapping employees' work arrangement and wishes. The results of the survey revealed that a substantial number of employees (79%) were already using some form of flexible work arrangements, time- or space-wise. However, only 39% were able to work from home, the main reasons being not owning a laptop or not having access to company's 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 throughout the organisation, so that it would be available for all employees, and the framework and rules would be known for all. In relation to this, 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 has still 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 a wider negotiation process on the harmonisation of working conditions of the staff that has been incorporated following to the acquisition of two banks in

2017. The right to disconnect was negotiated and agreed with some of the main unions representatives in the company (CCOO). However, other important trade unions within the bank (UGT) did not sign the agreement. Right to disconnect is defined in the agreement as *'the right for employees to not to respond to emails or work-related messages outside of working hours, or during rest times, leaves 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 the a rational an efficient use of new technologies through the issuing and distribution of Guides and Recommendations for avoiding the unnecessary or excessive use of e-mails outside normal working hours.

With regard to the Portuguese action, it was unilaterally implemented by the bank. Trade unions were not involved at all. The participation in this program was made on an individual basis and involved around 30 workers. According to works' council members interviewed, they have monthly meetings with management, where implementation of this initiative could have been discussed. However, the company never did it and they did not explicitly ask for it. As informed, social dialogue at company level is most exclusively focused on wages and related benefits (particularly pensions). Moreover, current relationships between work council and management are not particularly cooperative.

Impact of the practices

Information gather barely allows to analyse the impact of the transformations discussed. However, some tentative conclusions can be drawn, particularly when comparing the cases of Austria, Denmark and Estonia. Comparison confirms the relevance 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 Austrian company, Danish company does not accept arrangements in which employees work outside the employers' facilities in fixed days. It also refuses to conclude home-based telework arrangements with a view to avoid health and safety regulation. Austrian case also offers a more convincing approach to deal 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 which entail that virtual work arrangements can still be implemented according to each department rules and manager decision, it established a transparent norm through which all workers can get access: virtual work in exchange of desk sharing.

In addition, it is worth noting that regulatory approach following in the Austrian case is also facilitating to introduce in the bargaining agenda new and more ambitious topics (recognising commuting as working time, etc.).

As far as the Spanish case is concerned, it is not possible to evaluate the impact of the newly 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 expectation among the bargaining parties, two main weakness can be highlighted. First, trade unions are not involved in 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 discuss potential adjustments and improvements aiming to properly implement and enforce the agreement. Second, some trade unions who did not sign the agreement (UGT) criticise the high degree of ambiguity or lack of clarity of the newly right. According to UGT, it is not clearly specified what the bank means by 'exceptional circumstances', and this may entail problems to effectively enforce this right. Indeed, they have recently denounced in a website note that most of the campaigns launched by the bank are considered 'exceptional circumstances.'

With regard to the Portuguese initiative, its main impact was to avoid dismissals. In this sense, it also contributed to maintain social peace. The working conditions of jobs reconverted in the credit

back office have remained the same, bearing in mind that the measure was not oriented to intervene in this dimension.

Box 3. Austrian good social dialogue practice at company level.

The company studied is an Austrian bank organised as a multivariate enterprise. It is present in seven countries and with currently over 2000 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 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 a bit more inclined to do telework, the bank's corporate culture has largely remained an example of classic presentism and regular working hours. This however started to change in 2010, when the company moved 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, but put their stuff, including their office notebook, into a locker each night and choose a workplace in the so-called Homebase of their department (or somewhere else if needed) each morning. Since the new office building offered less workplaces than the bank had employees (about 80 percent), 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 considering legal framework in Austria, which established that the works council (but also employer) has the right to demand a CA regulating organisational changes related to desk-sharing. As stated by work councillor interviewed: "*We were in the happy situation to say: '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 WK). In this context, work 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, but 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 done outside the company building, whether at home or elsewhere (20% of weekly working time). The agreement also established 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 work council has so far insisted on temporary status of the agreement with a view to continuous working on its adaptation 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." (Work council). An example for a potential adjustment currently in negotiation is to enable 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. Also expected are future adjustments of the maximum weekly percentage of virtual work which will likely be increased.

Source: Austrian field work 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 financial sector

IT is a complex and fragmented sector which embraces occupations (developers/programmers, IT support workers, etc.) with different working conditions and mobility patterns. Most of the workers in the sector make intense usage of ICT for work purposes. However, mobility or space flexibility is not a choice for all IT workers. This is particularly the case of IT support workers ensuring availability of IT services by maintaining systems and fixing incidents, whose work content reflect what some scholars have conceptualises as the ‘servitisation of IT sector’, which denotes ‘*the trend towards emphasising customer-oriented service in the delivery of business IT solutions*’ (Trusson et al., 2018:150). Under this sectoral segment, which account for a high proportion of total employment in the five countries studied, workers 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 constrains.

At the same time, the sector presents a high incidence of ‘ICT enabled mobility’ arrangements (Eurofound and ILO, 2017¹⁰). 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 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 constrains. 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 pioneer sector in introducing forms of mobile work organisation, using digital communication tools. Already in the 1990s IT-corporations started to test tele-work 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 informed that prevalence of virtual work is considerable, being mainly implemented through informal arrangements rather than through ‘regular telework’ arrangements.

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

In Spain, the adoption of traditional home-based telework and other flexible work arrangements is not so widespread as one could expect, according to so social partners’ assessment. It is mainly related to certain categories (principally managers and very high qualified employees), being also related to companies’ strategies aimed at ‘attracting and retaining talent’.

¹⁰ 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 Sectoral Social Dialogue Committee for Telecommunications, where the trade union UNI-ICTS (Information and Communications, Technology and Services) is represented along with the European Telecommunications Operators' Associations (ETNO) on the employers' side.

In June 2016, just fifteen years later of an early publication of guidelines for the adoption of telework arrangements in Europe in 2001 by the telecommunications companies, the parties concluded a Joint declaration on Telework in the Telecom sector¹¹. The declaration acknowledges both the extension that telework and mobile work arrangements and its potential contribution to improve working conditions in the sector, particularly with regard to work-life balance and motivation at work, which has also a positive impact on management strategies and performance in terms of increased productivity, less absenteeism or reduced sick leave.

The text builds on the EU framework agreement on Telework 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 used alternatively in the text. The text also highlights the voluntary character of telework for the employee and the employer concerned, as well as 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.

The European social partners invite their national affiliates to consider concluding a specific complementary collective agreement addressing specific issues related to working conditions:

- Terms and conditions: teleworkers are granted with the same rights and conditions stemming from applicable legislation and collective agreements (workload, salary, career opportunities). 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 telework must be reachable to the employer in line with company and country's rules and laws. Importantly, the agreements should respect the right of employees to disconnect and not to be available outside working hours.
- Health and safety: the employer is responsible for the enforcement of the occupational health standards but needs the on-going 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 get access to 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.

¹¹ Joint Declaration on Telework by the European social partners in the telecom sector, https://etno.eu/datas/ETNO%20Documents/Joint_Declaration_telework_UNIeuropa_ETNO.pdf

- With regard to collective rights, the same conditions apply to teleworkers for participating in and standing for elections to representative bodies. Also, these bodies shall be informed and consulted on the introduction of mobile work arrangements.

In 2017, social partners signed a new "Joint Declaration on ICT-based mobile work", which entails a follow-up" of 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 relation model 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, IT sector is quite atypical within national industrial relations model. 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 because the professional associations of university graduates, such as the Danish Society of Engineers (IDA), do not conclude collective agreements in the private sector due to an old tradition. Besides, many of the union members are covered by the collective agreement in finance sector.

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

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

4.4 Social partners' debates and discourses on virtual work

Sectoral social partners in all the countries 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), because a relatively high proportion of workers in this sector are requesting or using these arrangements. Compared to the financial sector, a less clear-cutting cross-country division is found in relation to 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 show a more negative discourse than employer organisations, which tend to stress some of the drawbacks identified in the literature.** It is worth noting that 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 problem of working time and work intensity was highlighted by trade unions in most of the countries studied (Austria, Denmark, Spain and Portugal). Overtime and work intensity were connected by several trade unionists interviewed to the problem of 'self-exploitation', which generally affects to highly qualified employees working within autonomous labour processes. Some scholars have conceptualised this problem as the 'paradox of autonomy': the perception of higher autonomy of working time and workplace in virtual work goes hand in hand with higher intensity of work and overtime (Boell, et al., 2016).

Overtime and work intensity in the sector seem also to be explained due to some institutional/national factors. In Spain and Portugal, fears and denounces of work intensity appear to be related to the high degree of informality around virtual work, which is related to trade unions' difficulties to regulate this work form through company collective bargaining, and to enforce working time regulation when workers are geographically dispersed. In this context, Spanish trade unionist interviewed even pointed that telework or similar arrangements are in many cases self-restricted because when workers develop their tasks from home or alternative workplaces, they feel more pressure to take more work and to meet targets in exchange of the flexibility that they have been granted by management. In Austria, the problem of overtime was connected to the use of 'all-in employment contract', which are 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, trade union gathered evidences that these contracts were blurring the boundaries between work and free time. Accordingly, the claimed to make these contracts available only 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 newly leadership abilities for managers aiming to ensure a clearer balance of expectation between employees' work and company objectives (Denmark).

In Estonia 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 potentialities it may bring to employ disabled people and people living outside the city centres where most of the ICT companies are based; and for transforming into labour contracts the self-employment relationships in which companies sometimes rely to hire employees for specific projects.

As far as the employer organisations are concerned, they perceive mostly advantages. As discussed for the financial sector for some countries, these advantages are particularly related to the employer opportunities to save up facility costs. Compared to the financial sector, transition towards desk sharing or similar work organisation forms is also happening in several big IT companies in Spain.

The general favourable employer position towards desk sharing and virtual work is not however shared by middle managers and 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 preference for encouraging virtual work as part of the transition towards work organisation approaches relying on project-based offices. Austrian employer organisation also informed that SMEs in IT sector are restricting virtual work practices because they are perceived as reducing bond 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 emphasizes the advantages of "Bring your own device" policies as saving costs for equipment and reaching the employees also outside their working time (<https://www.wko.at/site/it-safe/Sicherheitshandbuch.pdf> , p. 23). In other countries (Denmark), employers also pointed to different challenges related to new workers' skills required (more self-discipline, self-management skills, etc.).

Finally, it is worth to pay attention to those debates related to 'mobility for operational reasons', which affect those occupations such as IT support workers, which carry out tasks that entail intense usages of ICT and involve visiting client workplaces and/or time availability (for emergency repair and IT support, etc). **This 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 shift can be carried out at company's premises, at clients' facilities and even at the employees' home. In the latter case, 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 client company with regard to the operation of the service. Moreover, there is no collective regulation on the issue of 'availability' or 'on-call work' in the sector. Neither it is specified in the employment contracts. Ultimately, it is up to the individual companies how to compensate for this extra working time on the basis of individual bargaining with the employee. As pointed 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 flexibility required by the 24/7 services provided by many firms in the ICT consulting sector. Employer organisation approached even criticised recent legislation that has recently come into force (May 2019) and obliges companies to guarantee the daily record of the working. The obligation is established that such records include 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 proceed with the effective implementation of this obligation, employer organisation approached rose some doubts about its effective implementation in the case of mobile employees, as they are often working at clients' 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

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 (causal telework, etc.) discussed in the previous section. In countries such as Austria, social partners acknowledged that further and detailed regulation takes (or has to take) place at company level (see 4.6 section). In Spain, social partners negotiated the implementation of EU framework of telework 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, against trade union attempts to regulate them through (company) collective bargaining. Interestingly, declaration on telework agreed in the ESSD of the IT sector in 2016 has not had any impact in sectoral collective bargaining in the five countries studied.

In Austria, sectoral bargaining in the IT sector provides one of the most comprehensive regulations regarding telework. 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 should be set in written agreement and that all the working hours exceeding the prevailing normal working hours must be previously notified by the employer to be recognised as such, independent of the workplace. Concerning the operational costs stemming from the adoption of this work arrangement, the agreement states that all the necessary computing and communicational equipment for the telework place outside the employers' premises shall be borne by the employer. Finally, the agreement sets the right of the works council to be informed

about all employed teleworkers working outside the employers' premises. The works council has the right to use the electronic communication equipment. The works council shall be reimbursed for the 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 is part of the main collective agreements in the sector. In most cases it is attached as a protocol to the agreement. Since there, no other provisions have been agreed or discussed.

In Portugal, the ICT sector was the first to address virtual work in a sectoral collective agreement. The 2017 and 2018 sectoral agreements included provisions about the topic by repeating what was written in the labour law. The latest sectoral agreement of March 2019 (Boletim do Trabalho e Emprego 2019) included more developed regulations regarding virtual work. In fact, compared with the existing labour law, the latest agreement provides a more detailed regulation of working time, which establishes, among other issues, that teleworker daily schedule cannot be higher than that practiced in the company and that the provision of additional work are 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 duties of the employee in relation to the need of the employee not to disclose any information, data, access, passwords or other means - including hardware and software that can be on the interests of the employer. Finally, it recognises teleworkers the same rights to collective representation as comparable workers at the employers' premises

In Spain, the most relevant attempt aimed to addressing the regulation of virtual work arrangements in the sector was raised by union representatives during the bargaining rounds of the last national sectoral collective agreement in 2017. Trade unions' proposal was to include the provisions of the 2002 EU Framework agreement on Telework with a view to fostering the adoption of telework arrangement at company level. However, this proposal was finally abandoned in the light of the employers' representatives' refusal and in order to ease the agreement on more conflicting issues that were at stake in the bargaining agenda, namely the adoption of the new professional classification system. The parties still differ in their approach to the regulation of many aspects of virtual work and on the bargaining level where these issues should be dealt with.

Finally, it is worth analysing how virtual work arrangements which entail '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 agreement 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. In then defines the maximum number of 'on-call' days per month/year (10 on-call standbys are permitted per month accounting up to a total of 168 hours) and the relevant compensation.

In Denmark, agreements regulating working conditions of IT workers are found in different sector. 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 expert at high level, who are in charge of maintaining line banking systems, among other issues. 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 up to the maximum number of on-call days on a yearly basis (40 times a year at most, subject to a maximum of 480 hours a year, for the individual employee.). It also establishes the framework of its

implementation, specifying that notice of on-call duty, which must be distributed equally among the individual employees wherever possible, must be given as early as possible and at the latest 24 hours beforehand. Otherwise, the employee can reject the request. Bearing this general framework in mind, it is mostly up to the local partners to agree on terms related to on-call work from outside the premises of the company. Similar agreements regulation on-call duty for IT workers are also 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 agreement.

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, the company bargaining level implements more detailed regulations on arrangements entailing 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 a company agreement since the coverage of works councils is relatively low in the IT industry: social partners estimate that less than 50% of all employees covered by the sectoral collective agreement work in companies with works councils and thus 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. On the contrary, ICT enabled mobility is mostly discussed individually. As in Austria, company collective bargaining coverage is low. In this case, it is mainly explained because academic staff affiliated to the trade unions members to Akademikerne, which account for a high promotion of total workforce in the sector, 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.

Under this highly different context for what concerns the collective regulation of virtual work, the study has found interesting initiatives which reflect, in each country, innovative social dialogue experience with respect to its national background.

The five cases selected are companies specialised in the provision of IT activities and related consulting services. They all are big companies employing more than 1000 workers. All the companies selected except the Danish enterprises are multinational companies which operate in more than a country. As far as the 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 (this last aspect does not apply to Portuguese case).

As it was done for the financial sector, practices studied are firstly described, highlighting its contribution to improve working conditions to virtual workers and/or through virtual work. Then, the participation schemes/ regulatory mechanism put in place and the different negotiation processes are described. Finally, it is discussed their impact in the improvement of working conditions.

Topics addressed: description of the practice

All the cases selected address aspects of virtual work which are particularly relevant at national-sectoral level. Overall, they can be categorised as good practices for implementing virtual work arrangements which balance the needs and objectives of the companies with workers' 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', that is on-call work

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

in EU framework agreement (voluntarily principle, need for written agreement, employer responsibility for what concerns health and safety and equipment costs, etc.). However, ICT evolution, company progressive transition towards desk sharing and newly employers' 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. New arrangements allow employees working from home in occasional fixed days, or at certain flexible days chosen by the employee, prior to notification to the head of unit. Alternative workplaces beyond workers' homes are limited to employees' home for 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 ensure decent working conditions to virtual workers for several reasons. First, overtime is prevented by employees' obligation to record working time and location of working time and by establishing maximum working time in home work (10 hours). Second, it does not entail additional costs for employees since the equipment is owned and maintained by the company and cost for energy and internet are reimbursed with a lumpsum per month. Third, regulation can also contribute to better enforce health and safety of virtual workers because it allows the labour inspectorate to inspect the working place 'home office' in case was permitted by law. However, according to the informants, the labour inspectorate does not have this permit yet.

The Danish case analyses a company which has offered diverse flexible virtual work arrangements for years. All employees, from the directors to the (some) 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 – except in the case of an important meeting, for instance. 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 require 'mobility for operational reasons' and have to work at different branch offices (for work meetings, etc.) and at a clients' premises. Manager and employee representatives interviewed could not even specify the data when ICT-enabled virtual work arrangements were implemented, being an integral part of work organisation. The main goal ICT enabled virtual work arrangements is to facilitate employees work-life balance.

As far as Estonia is concerned, practice selected combines open-office design and different flexible arrangements which provide employees 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 working 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 over how and where they work. In this framework, employee's personal goals and tasks are clearly defined, however, where and when these are carried out, is not so relevant. The primary goal of existing work organisational principles is to enhance productivity by fostering employees' motivation and satisfaction. In this case, main advantage of work arrangements is to guarantee a high degree of freedom to employees to decide when and where to work, which can contribute to improve work-life balance. In addition, they aim also at saving facility costs, since the company offers now less workplaces (desk, chairs, etc.) than the company has employees.

With regard to Portugal, cases study analyses new company rules regulating rights and duties associated to the use of ICTs for employees carrying out ICT-enabled virtual work. These rules are assessed to establish a more secured and transparent framework to 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/head of units. Only in 2017, an explicit so-called 'distance work arrangements' (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 in the year. The most important aspect of the rules on ICT use for improving working conditions of virtual workers is that they limit company digital control and surveillance. Rules prohibit the company to control employees' internet access and prohibit any performance assessment which take into consideration internet usage.

Finally, the Spanish case deals with a highly conflictual topic: the regulation of on-call work of IT supporters. In the company studied, work organisation practices are organised around projects and services. Projects are built on specific clients' 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 on client's facilities on regular basis. The provision of IT services often requires the presence of IT consultants on clients' premises on regular basis and permanent availability in order to deal with incidents that may arise at any time. The regulation set in the last company agreement establishes different compensation mechanisms for the employees that voluntarily agree to be available during 'on-call time', in which the employee needs to be reachable by the company in order to intervene in the event of any incidence. While some of these incidences may require the employee to move at the client's facilities, in 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 the incidents. Intervention hours are considered as extra working time that can be compensated either economically or with an equivalent time off, and even with a mix of time and pay. Intervention hours are paid as 1,75 price/hour of normal weekly working hours, 1,9 on weekends and 2,5 on special days such as Christmas or NYE

Participation schemes/ regulatory mechanisms put in place and negotiation process

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 to modify initial employer proposal, which was assessed by company trade unions and work 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 homeworking came from the headquarter in the US, it was jointly designed and implemented in cooperation with work councils. At the beginning, the project was regarded critically, especially by the local management and the works council. However, balanced and transparent norms, alongside trainings for superiors and employees about how to handle telework, removed previous resistance. In this context, there was not any discussion or conflict when the company decided to implement new virtual work arrangements: the only alternative contemplated was joint negotiation and collective bargaining. Virtual work arrangements are not established as an employees' right. However, the agreement established that in exchange for employees voluntarily accepting desk-sharing, they get the right to do home-work.

Danish case illustrates the most common sectoral approach to deal with 'ICT enabled virtual work arrangements', which relies on informal negotiation and communication between individual employees and line-managers. Agents interviewed pointed 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 informed 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 is a key factor. Company trade unions accept this approach and have not contemplated the need to address the topic through company collective bargaining.

Similar to the Danish case, company studied in Estonia has not relied on social dialogue mechanisms to implement virtual work arrangements, even if this company has trade union and work councils, representing 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 labour inspectorate. Estonian Labour Inspectorate has made formal notices 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 by specific time 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. Another notice demanded that a specific time needed to be introduced for lunchtime. Companies’ managers point 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 to the internal documents being prepared by the management and the human resources of the company in 2018. Consultation was mainly focused on topics related to organization of data, use of information to account for individual productivity and working conditions (ICT use and professional qualifications for ICT). The most interesting lesson of this process is that workers’ representatives could modify initial employer proposal in relation to digital surveillance. The company wanted to introduced procedures aiming to control and verify employee’s internet access. They also contemplated the possibility to use the verification of employees’ internet access as an indicator of employees’ performance and productivity. At the end, the company was forced to eliminate this proposal thanks to trade unions and work councils’ pressures and arguments.

Finally, Spanish case is particularly interesting for being the only company in the IT sector which has regulated through collective bargaining on-call work. This outcome is only understood if one pays attention to the bargaining processes associated to the mergers and acquisitions that the company implemented in the last years. Indeed, 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 merging process, trade unions from the different companies negotiated the conclusion of a new company agreement to overcome the fragmentation of the regulation of working conditions stemming from the application of different sectoral and company collective agreements. In this context, the ‘harmonisation agreement’ included similar regulation of on-call work which was in force in the company acquired. 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 difference (and better) regulation that IT workers had within car manufacturing company, they stressed the different culture and attitudes towards collective action and unionism that exist in manufacturing sector compared to IT, where more individualized employment relationships prevail.

Impact of the practices

Information gathered barely allows to analyse the impact of the regulation discussed in 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, very few conclusions can be drawn. Evaluations or assessments on the impact of virtual work on working conditions was not carried out in any of the companies studied. Generally, agents interviewed from the three companies positively assessed existing working conditions. In some cases (Austria), work council members offered a more critical perspective which, in line with sectoral trade unions' discourses, warned against the problem self-exploitation through virtual work. Thus, even if the company has positively regulated this aspect (obligation to record working time, etc), fear on this problem persist in context of exigent objectives and highly autonomous working processes. In this sense, a common argument extracted from the three cases was that different impact on working conditions is not only conditioned by existing regulation, being also determined by different management and labour process factors.

With regard to the Portuguese case, effects or impacts cannot be evaluated because case deals with a preventive action: it forbidden enhancement of digital control prior to be implemented.

Finally, Spanish case clearly illustrates how company collective bargaining regulation indeed improves working conditions of IT workers subject to on-call work. Compared to the working conditions of this workforce described by sectoral trade unions, IT supporters from this company work under more under a more transparent and safer 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

Company studied the biggest energy utility in Portugal, with 11631 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 it has optical fiber in their high and medium tension aerial cables. In 2014, the company had 6700 workers in Portugal.

The case addressed elaboration of guidelines and regulations to deal with ICTs. The main drivers to establish ICT rules were the need to protect the data of the company (in particular its commercial secrets), the integrity, inviolability and protection of its ICT systems, and the control and optimization of technology costs (such as equipment, storage and processing capacities). They were primarily developed to deal with work outside employers' premises enabled by ICTs. The main motivation for producing these internal rules for virtual work were the systematic introduction of new technology and the treats virtual work can present to the company. The use of ICT requires responsibility, security in the access and prevention of attacks. There needs to be clear rules to prevent damage to the country and to the clients.

There was a long process of social dialogue in the company about the rules to use ICTs, 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 to the internal documents being prepared by the management and the human resources of the company in 2018. The workers' representatives were particularly keen to discuss topics related to organization of data, use of information to account for individual productivity and working conditions (ICT use and professional qualifications for ICT).

The works councils and trade union delegates were able to lead the company to change the initial text of the rules for ICT. IN particularly, they contested the "generic control and verification of internet access", in terms of the implausible costs associated with internet use and the irrationality of linking productivity to internet usage.

Thus, the control of internet access was avoided and the analysis of the individual productivity of each worker should not be based on the quality of internet time.

Source: Portuguese field work report, Boavida, N and Moñiz, A. (2019)

5. Virtual work in the home health care sector

5.1 Incidence and features of virtual work in the home health care sector

Home health care is a sector where mobility is essential for the main workers' tasks. Although most the sectoral workers carry out 'mobility 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 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. Literature describe how ICT is used by mobile home-care workers, principally, for communication purposes, centralisation of information and improvement/enhancement of management control on working time and workers' performance (Lindberg et al, 2017; Peña Casas et al, 2018; la Cour et al., 2016; Rosengren, 2018). Another innovation included within debates of technological innovation is related to so-called 'telehealth', defined as remote patient monitoring consisting of two integrated parts. First is the technological modality which entails gathering patients' data which is sent by means of telephone, email or videoconference. The second is related to care delivery process 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, in all the countries studied except Estonia, sectoral workers have progressively adopted several ICT devices. 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 app 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 also reported in some countries, whether through videoconference which replace physical visits -so-called screen visits- (Denmark) or by means of call centre assistance (Portugal). In Denmark social partners informed that telehealth (screen visits) has reduced the number of visits to patients and care receivers.

Estonian situation is interesting because, although this is one of the most digitalised country, technological transformation has barely affected home-health sector. According to sectoral trade union approached, impact of ICT and digitalisation could be described as non-existent in the home health care sector. The current state of the art is that the main tools used by the home health care specialists (nurses) are phones and fixed computers, while some nurses still use paper and pen to fill in relevant paperwork. It seems that technological changes have only affected a very low proportion of private sector organisations, which in Estonian context refers to those organisations which do not depend upon public funds.

5.2 EU social dialogue recommendations

EU level social partners have not addressed this topic within the ESSDC of hospitals and healthcare

5.3 Industrial relations context at national sectoral level

The collective regulation of employment relations in homecare services sector tend to differ depending on the role played by public and private providers but, 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 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 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 private sector in the provision of home-care services through different formula 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 agreement reaches up to 90-100% of total workforce. Moreover, company collective bargaining complements 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 2015 and was subsequently extended to all employers' in the sector who provide health care 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, where homecare services are mostly provided by non-profit organisations, sectoral bargaining coverage is estimated at 77%.

5.4 Social partners' 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 home health care sector has not had a great impact on the core tasks of the jobs. However, ICT development described under section 5.1 seems to have indeed 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 with regard to the social partners' discourses on the ICT changes, which are partly explained due to the different role played by collective bargaining in the regulation of the technological transformation. It appears that social partners' perception on 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, trade union denounce that employers are mainly using technological transformation to increase work intensity. On the contrary, in Austria and Denmark, trade unions have an overall positive view of 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 in which social partners have jointly regulated or implemented some elements related to the digital transformation. Finally, Estonian trade union approached show a very optimistic narrative on the potential effects that ICT may bring in a context in which digitalisation is an early stage.

Spain and Portugal: polarised debate within unregulated technological transformation processes

In Spain and Portugal, the study finds that one of the main contested areas identified between trade unions and employer organisations is related 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 implanted by employers 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 in the bargaining agenda. In one Spanish region, namely Catalonia, the conflict on estimating commuting time led trade union to appeal to the Labour Court, which is a bipartite body charge of Extrajudicial Resolution of Labour Conflicts. In Catalonia, 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 one provided by the Google Maps App. 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% time counted 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 accept to undertake a more comprehensive research on the effective commuting times. Union representatives see a clear linkage between working time estimation through Google Maps App and intensification of work pace.

'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 do not take breaks to ensure they meet the daily scheduled services' (Catalan CCOO representatives)

In Spain and Portugal, trade unions also denounce that work intensity and non-recognised overtime is also partly related to the use employers make on the new possibilities offered by ICT to work on the documentation/registration of working activities from 'anywhere'. In Spain, trade unions informed that care assistants do not have a specific time regulated in their contracts devoted to documentation/registration of working activities. For the employers, these records are very important because they are used to demonstrate compliance with the terms of the contract to local administrations. Since workers cannot do those reporting tasks at patients' homes, they tend to do it 'on the move', from home to home. Some trade unions (CCOO) argue that this is a stressful situation for most of care workers and puts an additional pressure to tight commute times. In Portugal documentation/registration work is often done from workers home outside their regular working time. To prevent this, SINDITE suggests overlap of time during shifts to allow the proper transfer of occurrences to the worker of next shift.

Interestingly, some Spanish trade unionists (CCOO) also linked ICT developments to a decrease in their capacity to control some aspects of the work process. This is related to the replacement of coordination meetings where care assistants used discuss changes on the work planning with the head of units, by email reporting. This mechanism 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 emerge of platforms work in the sector (Spain). In Portugal, trade unions note that the introduction of ICT increases skills requirement. However, the skill upgrade is rarely contemplated by the employers. In Spain, trade unions informed that a major challenge to regulation of working conditions in the sector is related to the emergence of online platforms acting as direct intermediators between users and care professionals (often self-employed), where trade unions have little influence to prevent wage and social dumping.

On the contrary, employer organisations (particularly in Spain) stress the contribution of ICT to improve the quality of home care services. According to Spanish sectoral employers, ICT give security to the families and to the medical teams, because they can all see how a patient/user has been treated, but also to employees, since they can document what has been their performance throughout the working day.

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

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

Compared with Spain and Portugal, trade unions in Austria and Denmark have a less negative perception of technological change. In Austria, trade unions do not see ICT technologies as a neutral tool. Rather, they stress its potentiality to increase employers' surveillance, particularly related to employees' performance. Due to this, this is currently their main aim in the collective bargaining negotiations at company level, facilitated by a statutory framework which entitled work councils to negotiates on these issues. Beyond the topic of digital surveillance, which seems to be successfully regulated at company collective bargaining, both trade unions and employer organisation approached agree that the introduction of ICT devices has hardly changed the organisation of work (neither the workflow nor the place of activity of the home health care workers). The same holds true for working time and working time patterns. In relation to work intensity, both trade union and employer organisation find that it has increased but due to alternative factors than ICT introduction. According to the sector-related level organisations (trade unions as well as employer associations) the latter development is due to the increasing pressure of costs (based on the public cost-cutting measures) and not an impact of ICT.

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

The main disadvantages that both, Danish trade union and employer organisation representatives referred to are, on the one hand, the risk of isolation of the employee. Currently, care assistances receive on a daily basis all the information on the tasks they have to carry out in 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 the new ICT, workers can spend days without visiting the offices. This generates a lack of social contact and, particularly, 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 refer 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. On the other hand, it appears the risk of overtime, which is related to the fact that ICT tools allow employees to check or document issues 'anywhere and anytime', which means that there are no strict borderlines to define 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 the individual employee as well as the organisation that employees meet in the morning, have lunch at the workplace and come in to finalise documentation before stopping the 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 (ENA), virtual work developments would only bring along advantages for the specialists in home health care 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, like work related stress, direct contact with the patients and home visits, and data protection rules, to name a few. However, according to ENA, the advantages of virtual work could include the reduction in work load (for instance, by recording patient information in a national standard program); better time management (for instance, enabling contacting patients through video and promoting e-consultations) and overall, in the point of view of patients, improved access to services.

ENA pointed to some reasons which hinder development of virtual work in the home health care sector, namely data protection regulation and the need for confidentiality, which restrict the use of video consultations; and budget restrictions, which lead the government to give priority to other investments. Nevertheless, ENA finds 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, only in Austria some relevant sectoral initiatives launched by social partners were found. In this country, trade union advises works councils on the negotiation of company agreements regulating digital transformation. To this aim, sectoral trade union has developed a model of company agreement 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; definition of employers' responsibilities with regard to the cost and equipment; working time regulation (restriction to permanent availability and specification that Data input and data maintenance is always working time); rights related to training; and work 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 council (but also employer) has 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. On the contrary, in Estonia, Spain and Portugal, ICT technological changes have been unilaterally implemented by employers and research could not find any case entailing joint regulation.

Under this highly diverse context for what concerns 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 partners involvement in shaping digital transformation. This means that cases from Estonia and Portugal should not be considered as good practices for what concern improvement of working conditions through social dialogue shaping digital transformation.

Also, cases differ in relation to its relevance for the main research topic (technological transformation affecting workers carrying out mobility 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 (app, 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/registration 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, in line with national sectoral reality. The company does not provide workers ICT mobile devices and has only recently digitalised information recording. The Portuguese case addresses a company implementing 'telehealth' through call centre. It provides services to users/patients, such as emergency 24h, loneliness support, medical phone, pill alerts, assistance to home 24h, mobility 24h, T-Care 24 (remote bio sensors), TeleAcesso (mobile and fixed phones and panic buttons). However, it does not offer home-health care mobile services. 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, company studied is a non-profit association whose funds depend almost entirely from the state (Austria). 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 as Catalonia. In Estonia and Portugal, they are private sector companies. In terms of the company size, companies from Austria, Denmark and Spain are big companies, employing more than 250 workers. On the contrary, 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, as it is the norm in the sector, and medium qualified staff (care assistances, nurses, etc.). In the Estonian case, only nurses are employed.

As it was done for the financial sector, practices studied are firstly described, highlighting, when possible, its contribution to prevent some of the potential negative effects linked to ICT introduction. Then, the participation schemes/ regulatory mechanism put in pace and the different negotiation processes are described. Finally, it is discussed their impact in the improvement of working conditions.

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 to sectoral employees.

Austrian case deals with the company collective regulation of digital reporting and communication system through ICT mobile devices. This regulation can contribute to prevent several of the negative effects associated to these technologies on home-care employees' working conditions. Most important element to be highlighted are, first, that it clearly establishes employer and employee responsibilities and liabilities in relation to the use of ICT mobile devices. Employer is responsible to pay all costs related to operational use and maintenance while employees' liability is limited to damage or loss of the company's mobile devices is limited to intent and gross negligence. Secondly, and more important, regulation limits employer surveillance options, specifying that digital mobile reporting system 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 specific monthly working time devoted to administrative activities, an aspect which can contribute to limit work intensity. Fourth, it is recognised the employees right to disconnect, establishing that employees have not obligation to

have the mobile device switched on outside working hours or an agreed on-call duty. It is also set up that data transmissions (through email, SMEs, etc.) sent outside working hours or an agreed on-call service, are not considered to have been received by the employee until the next beginning of work. Fifth, it limits working employer oriented working time flexibility by establishing that short-term changes of workers' schedules and shift plan have to be clarified by the superior with the employee concerned 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 manager/superior unilateral discretion to set up changes in work plan. Sixth, it is stated clearly that training is offered for the use of mobile devices and that the times for the training measures as well as the travel times to the training measures are to be remunerated as working time.

In the Danish case, its potential to improve working conditions lies on the positive role that special training on ICT played in favouring workers' adaptation and transition towards new work methods. Company introduction of new ICT devices and care system app was accompanied by good quality training programme aimed at enhancing workers' technological skills. In addition, the company shows positive work organisational principles intended to prevent some of the negative effects associated to ICT 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. To 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 come back at lunch time and at 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 app system used for work communication purposes, they are able to stay in the field all day long without necessarily passing by at the office.

As far as the Spanish case, 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 is not always translated into effective work.

Estonian case does not represent a good practice but 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 record. Employees are now required to insert all data relating to the performed home visits into a digital database. In the absence of mobile ICT devices, nurses use their home personal computers (outside of the 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 insert patients' data on the site, but this proposal has not been considered by the company.

Finally, Portuguese case offers a good practice for what concerns integration of people with functional diversity (disability). In 2009, the company started including a project to integrate people with physical disabilities, about 4-5 workers. In 2019, the company has 15 to 17 employees, maintaining most of these workers but also hiring more operators with more qualifications, because they are dealing with human lives and sometimes there are complex situations that required more qualified workers.

Participation schemes/ regulatory mechanisms put in place and negotiation process

Only cases from Austria, Denmark and Spain dealt with 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 managing division management (home health care), 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 employer and 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 equivalence to work council) and the Health and Safety Committee into one with the aim to obtain synergy effects (one forum for all discussions). However, cases of work organisation aspects related to ICT have never been brought forward to be dealt with in the MED committee, which means that the current use of ICT does not constitute a problem. Main contribution of social dialogue lies on how management and local section trade union FOA (which also represent the union at workplace studied), supported by the digitalization department of the municipality of CPH, introduced a mutually agreed strategy to help and support the employees' during the technological transition step by step. This strategy included high quality training programmes which enhanced workers digital skills.

In Spain, the possibility for care coordinators to work from home during on-call services was agreed with the company work council. The company's initial proposal was to extend on-call service hours from 20h to 22h PM for technical coordinators in order to attend to any incident that may affect the service. This proposal faced the opposition of the work council, which request 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.

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

Impact of the practices

Main conclusions related to the impact of the practices described can be drawn in relation to the cases from Austria and Denmark, as in both cases social dialogue is clearly related to positive results. Moreover, both cases offer interesting lessons for what concerns potential transferability.

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

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 take benefit of the tools. In this way workers' initial discontent and resistance was avoided. This case also deals with concerns raised by trade union in other countries (Portugal) and, accordingly, also offer some transferability lessons related to process entailing 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 City of Copenhagen (CPH). In Denmark, the 98 municipalities administer the local social and health care 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 at nights work 28 hours a week.

In this organisation, home health mobile workers are equipped with tablets and smartphones using the care system app so-called CURA for documentation about the patients. In CURA, the employee can see his/her daily tasks and document issues connected to the wellbeing of the patient. CURA also contains the calendar of the patients so that the home care helper can see when the patient is going to see a specialist for instance or have a visit of the hairdresser. Another example is screen visits. If needed, the patient receives a screen over which the home care can get in contact with the citizen from the office in the morning for instance to remind the citizen to take the morning medicine. In short, everything that is not physical work in the patient's homes is ICT supported work.

The initiative to use ITC tools extensively in the home care came in the first place from the state and the municipalities. The drivers were to make home care more efficient and electronically. In the early process, home health workers feared that the introduction of ICT in the home care would increase control because they had to register time spent and work location during the day. Furthermore, they believed that quality time with the elderly citizens would be disturbed by the work with the ICT tools.

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

Once the employees learned 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 organisation of the work. This is documented in a survey conducted by trade union FOA. Interview conducted in the company also confirmed this assumption.

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

Source: Danish field work 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. To 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 vs. 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. Main bipartite and tripartite social dialogue discussions (including joint reports drawn 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 implementation of the EU framework agreement greatly varies across the five countries studied. In Austria and Denmark, the EU framework agreement has been mainly implemented through sectoral collective bargaining. In both countries there is no statutory regulation. Rather, telework arrangements are dealt with in 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 entailing work council to ask for an 'enforceable' company agreement with a view to regulate digital systems which can be used to monitor performance, working time or desk sharing. In line with state-centre 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 reproduce EU framework agreement on telework. In Portugal, social partners did not implement EU framework agreement while in Spain, implementation has been scarce. In Estonia, telework was broadly regulated through statutory legislation in 2009 under Employment Contracts Act. In addition, a cross-sectoral agreement aiming to implement EU framework agreement was concluded in 2017.

Other forms of virtual work beyond 'regular telework' have been neither discussed nor regulated at cross-sectoral level either through statutory legislation or collective bargaining. Only in Spain, recent statutory legislation has addressed some of the risks linked to virtual work, establishing newly rights for virtual workers. For what concerns collective bargaining, the study has found that only in Austria, collective agreements at sectoral and, particularly, company level, are playing an active role in the regulation of newly forms of virtual work. In the remaining countries, it is found that only a minority of companies within particular sectors have regulated their approach to virtual work in company collective agreements (the case of Denmark and Spain) or just implement virtual work through individual and/or informal negotiations (Estonia and Portugal). Interestingly, this occurs in a context in which 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 for centralised collective bargaining providing general rights for virtual workers, which can be further developed by company agreements, as it is indeed happening 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 the lack of collective regulation within a national context of downward pressure on working conditions and change in 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. Under employer organisations' narrative, virtual work is generally represented as a worker demand which, similar to other flexible work arrangements, is intended to improve working conditions and, particularly, employees' capacity to combine work and family responsibilities. No relevant cross-country differences appear with regard to the employers' discourse.

Under this context, it generally appears that more updated and comprehensive regulation on virtual work is not in 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 and, as result, discourage employers from offering workers the flexible arrangement they are demanding to get a better work-life balance. Generally, peak-level employer organisations argue that it is the company the most suitable level to discuss 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 informed that virtual work arrangements are scarce and tend to be concentrated on high qualified employees and managers. The low incidence of virtual work in the sector is not explained because of the lack of technical means. Rather, it is related to concerns such as cyber security and data protection and management resistance. On the contrary, in Austria and Denmark, virtual work arrangements seem to be more widespread and have increased in recent years, according to 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 this project. In Austria and Denmark, debates on telework took place already in the 1990s. In both countries, social partners implemented the EU framework agreement 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 work organisations and management policies, as a part of broader changes in work organisation. Main debates in both countries stem from the linkage observed in the financial sector between the increasing offer of virtual work arrangements and the shift towards 'desk-sharing' and 'activity-based' office which provide fewer individual workplaces than the company has employees. 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 positively assessed 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 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 non-recognised overtime.

In Estonia, where there are neither sector-related employer organisation 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 relationship and trade unions' difficulties to represent and recruit workers. In this context, sectoral trade unions approached does not have and elaborated discourse yet. Since it has not problematised the topic, it could barely discuss potentialities and drawbacks during the interviews.

With regard to the **IT sector**, the study has first showed its internal variety for what concerns mobility partners. 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 and 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), 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 EU framework agreement in the sectoral collective bargaining, but proposal was finally rejected by the employer organisation. Compared to the financial sector, a less clear-cutting cross-country division is found in relation to the topics discussed by social partners during the interviews. Overall, trade unions show a more negative discourse than employer organisations, which tend to stress some of the drawbacks identified in the literature. It is worth noting that 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 the employer opportunities to save up facility costs

With regard to the topic of on-call work related to IT support workers, it 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 denounce 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 **home health care** sector is concerned, the study has showed that in all the countries studied except 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). Estonian situation is interesting because, although this is one of the most digitalised country, technological transformation has barely affected home-health sector.

Relevant cross-country differences are found with regard to the social partners’ discourses on the ICT changes, which are partly explained due to the different role played by collective bargaining in the regulation of the technological transformation. It appears that social partners’ perception on 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, trade union denounce that employers are mainly using technological transformation to increase work intensity. On the contrary, in Austria and Denmark, trade unions have an overall positive view of 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 in which social partners have jointly regulated or implemented some elements related to the digital transformation.

Finally, Estonian trade union approached show a very optimistic narrative on the potential effects that ICT may bring in a context in which digitalisation is an early stage.

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

- *Complementarity of statutory legislation and company collective bargaining*: Austrian case clearly illustrates how statutory legislation can complement and reinforce collective regulation by establishing those elements associated to technological transformation that work councils are entitled to deal with through company collective bargaining.
- *Relevance of independent/indirect participation mechanisms and collective bargaining regulation to ensure decent working conditions for virtual workers*: direct voice and individual participation mechanisms within HRM policies, mainly designed to enhance employees’ engagement and improve company performance, do not seem to be the most adequate actions to prevent negative effects on working conditions associated to virtual work. Compared to HRM actions, independent/indirect participation mechanisms and collective bargaining appear to offer better working conditions under a more transparent regulatory framework. They also establish the framework for continuous negotiation aiming to update regulation to new challenges.
- *Regulation of newly forms of virtual work and rights to virtual workers beyond regular telework*: good practices reviewed addressed the regulation of newly arrangements beyond regular telework (alternate telework, casual telework, etc.) and also newly rights, such as the right to disconnect, which can prevent negative effects related to overtime and increase in work intensification.
- *Regulation of surveillance*: some good practices show how digital surveillance aiming to monitor performance can be effectively regulation
- *Involving of trade unions in ICT implementation*: workers’ perception on the impact of technological change can be positively modified by involving trade unions it the process of implementation. In this case, technological change is accompanied by additional measures such as training, which support workers’ transition. Moreover, trade unions ensure that transformation is not unbalanced and does not contribute to increase work intensity.