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Ilse, Anna

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Digitalizing service work – social partner responses in Denmark, Sweden and Germany

Author: Anna Ilsøe, Associate Professor, FAOS,
Department of Sociology, University of Copenhagen
Email: ai@faos.dk

The discussion on digitalization of work has intensified in recent years. The literature points at two main trends that are accelerated by digitalization – the automatization of work which erases or changes job functions and the creation of work without jobs via digital platforms. This paper addresses the question as to how social partners define the digitalization of work and their perception of its consequences along with their recent responses to digitalization. Drawing on interviews with unions and employers' organizations in Denmark, Sweden and Germany, it examines social partner initiatives at the unilateral, tripartite and bipartite arena in various forms of neo-corporatist labour market regulation. Focus is on private services, which is the sector that is currently under the strongest pressure from automatization and the trend of work without jobs. Whereas the social partners seem to be very active on the unilateral arena in all three countries, responses differ on the tripartite and bipartite arena. The article concludes by discussing the strengths and weaknesses of the responses compared to current trends of digitalization and existing models of labour market regulation.

Keywords: Digitalization, private services, social dialogue, Denmark, Sweden, Germany

Digitalization and the flexibility of work

Digitalization of work and its consequences for labour markets and working conditions has been debated for many years in media, politics and research. However, the discussion has intensified in Europe and the rest of the Western world during the 2010s. The European Commission has launched various digital agendas as part of the digital single market strategy (European Commission 2014, 2016), and books and articles have addressed how digitalization now accelerates job loss and change of work procedures (Huws 2014; Rifkin 2014; Ford 2015; Hill 2015; Suri et al. 2016).

The literature highlights two main trends in the recent development. First and foremost, digitalization accelerates the automatization of work (Ford 2015; Frey and Osborne 2013). Automatization of work is a process that started already in the early days of industrialization. However, the invention of the computer and later the internet contributed to an intensification of work automatization. Today, digitalization means more and more sophisticated robots and software that accelerates the process of automatization and of job elimination. This is expected to be further intensified by the spread of big data analysis in various professions.

Automatization is estimated to eliminate many jobs in manufacturing but even more so in private services like sales assistants and secretaries. Calculations based on job categories speak of a future job loss of 47 percent in the US due to automatization (Frey and Osborne 2013). However, calculations based on skills and job functions are less pessimistic, as they underline that specific parts of each job will become obsolete – not the entire job (Chui et al. 2015, 2016). Automatization not only erases certain jobs but also changes the content of most jobs. Jobs that do not disappear are likely to be characterized by new job functions, competence requirements and a re-organization of the workplace. Furthermore, automatization contributes to the creation of new types of jobs like software development in e-commerce etc. In sum, automatization in both its early and later forms alters the functional flexibility of work – which job functions are needed or not and which combinations of job functions that make a job (Benner 2002).

Second, and more recently, digitalization creates work without jobs -work bought and sold as single assignments on-demand and without longer commitments or contracts, i.e. so-called gigs (Huws 2014; Rifkin 2014; Hill 2015). During the last decades, there has been a growth of non-standard employment in many Western countries, which means that the standard full-time job on an open-ended contract is under pressure (Gautié & Schmitt 2009). This includes temporary contracts, zero-hour contracts, agency work, informal work, self-employment, freelance jobs etc. In countries like the UK and the US the growth in non-standard work has been associated with a more general trend of precarisation of work (Kalleberg 2011; Standing 2011), whereas in other countries such as Germany non-standard employment has been associated with a dualisation of the labour market in standard jobs and non-standard jobs (Palier & Thelen 2010; Schulten & Buschoff 2015). Digitalization contributes to this trend as more work is performed through digital platforms without the legal framing of a job and without a clear legal identity of an employer and an employee. It is important to distinguish between two different types of platforms. Some platforms are *labour platforms*, which are forums for discrete tasks (Farrell and Greig 2016). It can be forums of freelance work like upwork.com or freelancer.com, where single assignments of work or projects are traded between participants. It can also be forums of micro work like uber.com or taskrabbit.com, where gigs or small tasks

are bought and sold. Other digital platforms are *capital platforms*. Here participants sell goods or rent assets. Examples are airbnb.com and ebay.com (Farrell and Greig 2016).

Some platforms have been labelled the sharing economy (Schor 2014). However, experience tells us that even platforms that originally were created with the intend of sharing often have been used for buying and selling services. A prominent example of this development is airbnb.com (Hill 2015). The distinction between labour platforms and capital platforms therefore seems more precise. Nevertheless, if the platforms are labour platforms or capital platforms, they offer new forms of non-standard employment that challenges the existing forms of labour market- and welfare state regulation as these systems typically have been built upon the very idea of a full-time permanent position (Koch and Fritz 2013).

However, the size of the platform economy is still relatively modest. Recent analysis of bank data in the US shows that, in any given month, one percent of adults earned income from the online platform economy (Farrell and Greig 2016). Although labour platforms are growing more rapidly than capital platforms, the capital platform market is larger; 0.6 percent of adults received income from capital platforms, whereas 0.4 percent of adults received income from labour platforms (Farrell and Greig 2016). Importantly, participants used the platforms as a secondary source of income. We find a similar picture in Europe. Surveys in Sweden, the UK, The Netherlands and Austria indicate that most people use the platforms as a supplement to other forms of income (Huws and Joyce 2016a, 2016b, 2016c, 2016d). Platforms rarely make up the full income of an individual today, but it is a growing market and is expected to multiply in the coming years. Therefore, digital platforms seem to contribute to the increasing and increasingly diverse forms of numerical flexibility of work - i.e. how many workers that are needed and how these workers are employed (if at all employed) – although the platform economy still is a small part of the total economy (Stone 2004; Bernhardt et al. 2016; Bernhardt forthcoming).

Generations of literature on workplace flexibility have drawn upon Atkinsons famous concepts of the flexible firm and its core- and periphery workers (Atkinson 1984). Here, workers with high skill levels are able to offer the firm a functional flexibility that shields them from numerical flexibility. This trade off makes them core workers – the ability to functional flexibility is rewarded with job security. However, this means that workers with low skill levels must deliver the numerical flexibility needed. These workers become periphery workers that are more loosely attached to the firm (hiring/firing, non-standard terms etc.). Digitalization of work might alter these traditional trade-offs. Digitalization accelerates both functional flexibility (the destruction and construction of tasks) and numerical flexibility (non-standard employment; work without jobs), which increases the risk of a dual flexibility pressure. Core can easily become periphery and vice versa. This raises a number of important questions for the social partners – defined as trade unions, employers' organizations and the state as to the future regulation of work and employment. If jobs disappear massively in some areas of the economy and/or are replaced by robots, software or gig's, the educational systems and labour market policies will be forced to adapt.

In this paper, I examine how social partners define the digitalization of work and perceive its consequences along with their recent responses to digitalization. Drawing on interviews with unions and employers' organizations in three European countries, I investigate initiatives on three arenas: the unilateral, tripartite and bipartite arena. Focus is on private services, which is the sector that is currently under the strongest

pressure from automatization and the trend of work without jobs. Denmark, Sweden and Germany is compared to explore similarities and differences in social partner responses. All three countries represent neo-corporatist models of labour market regulation, however, the use of legislation as a regulatory instrument varies. Legislation is used more in Germany than in Sweden, and more in Sweden than in Denmark.

The paper is structured as follows; After this introductory section on digitalization and flexibility of work, I briefly present the labour market models of Denmark, Sweden and Germany and possible political arenas of social partner responses. This section is inspired by the neo-corporatism literature. Then I present the used methods along with the results of the analysis. This is followed by a concluding section and a discussion of findings.

Neo-corporatism and social partner responses in Denmark, Sweden and Germany

Responses to digitalization of work in Denmark, Sweden and Germany takes place in labour market models characterised by coordination and cooperation among the social partners. The Danish, Swedish and German labour market regulation has traditionally been described as a form of neo-corporatism, where social partners cooperate and negotiate a mix of regulation that includes collective agreements, legislation and tripartite initiatives (Crouch 1993; Visser 1996). One type of labour market regulation does not exclude the others but is used as a supplement. Important is the tradition to coordinate across different actors and groups of interest.

However, there are also important country differences. Denmark and Sweden continue to demonstrate comparatively high union densities and membership rates of employers' organisations (despite smaller erosions), whilst these figures have dropped significantly in Germany (Visser 2007, 2015) (see Table 1). Nevertheless, private services is a sector under pressure when it comes to union densities in all three countries - also in Sweden and Denmark (Becter et al. 2012; Kjellberg and Ibsen 2016). In Denmark, union density is down to a third in segments of private services like retail, hotels/restaurants and office work, whereas this is also the case in among others hotels/restaurants in Sweden (Toubøl et al. 2015; Kjellberg 2013). This background information is important when it comes to social partner initiatives in neo-corporatist models. Bipartite and tripartite initiatives depend on the legitimacy of the organizations that take part in the coordination and/or negotiation. If membership rates are dropping, this puts the legitimacy of the bargaining mandate of an organization under pressure.

Table 1: Union densities and membership rates of employers' organizations in Denmark, Sweden and Germany

	Denmark	Sweden	Germany
Union density (percent of employees)*	67	67	18
Percent of employees working in companies that are member of an employers' organisation**	68	82	58

Source: J. Visser, ICTWSS Data base. version 5.0. Amsterdam: Amsterdam Institute for Advanced Labour Studies AIAS. October 2015.

*Figures from 2012-2013

**Figures from 2010-2011

Legislation has historically played a larger role in German labour market regulation than in Sweden and Denmark (Ilsøe et al. 2007; Andersen 2001). Recently, Germany introduced a statutory minimum wage whilst Denmark and Sweden are some of the few European countries still without a statutory minimum wage (Dølvik 2016; Schulten 2016). The German statutory minimum wage was a response to the growing area of the German economy not covered by collective bargaining. Bipartite regulation - collective bargaining – plays a dominant role in Sweden and Denmark in combination with tripartite coordination of the unemployment benefit funds, further training and labour market policies (Mailand 2008; Dølvik 2016). Coverage of collective agreements in Sweden and Denmark is still comparatively high, and social partners (especially in Denmark) have been hesitant to introduce more legislation on the labour market (Dølvik 2016). However, the Employment Protection Regulation (EPL) via legislation is slightly more strict in Sweden than in Denmark, leaving Denmark as the least legalistic of the Danish, Swedish and German model (Andersen et al. 2014).

Considering the key role of unions and employers' organisations in Danish, Swedish and German labour market regulation, this paper will focus on these two actors and their responses to the digitalization of work. Theories of neo-corporatism distinguish between three different political arenas where social partners can seek influence: the unilateral arena, the tripartite arena and the bipartite arena (Ebbinghaus 2002; Mailand 2008). I will use these three arenas as a tool to analyse responses from unions and employers' organisations in Denmark, Sweden and Germany:

The *unilateral arena* is characterised by government regulation. In many ways this is the arena with the weakest influence of unions and employers' organisations. The state rules by legislation and policy. Unions and employers' organisations can try to impact policy and legislative processes at state level (or at the EU level) through lobbying initiatives (Mailand 2008). The organisations can act in the media, publish and present analyses and reports or they can make use of their formal and informal interactions with politicians and government officials. Furthermore, unions and employers' organisations can take solo initiatives and offer services for their members that cope with challenges experienced with the existing regulation.

The influence of unions and employers' organisations is potentially larger on the *tripartite arena* (Mailand 2008). On this arena, unions and employers' organisations collaborate with the state. Here the three actors coordinate or cooperate on policies and revisions of legislation in existing formal fora or negotiate tripartite agreements. These formal forums exist both at national and local level. Sometimes this arena include other actors and organisations with an interest or competence in relation to the topic discussed.

Unions and employers' organisations have the highest level of influence on labour market regulations on the *bipartite arena* (Mailand 2008). Here, unions and employers' organisations conduct self-regulation via collective bargaining, collective agreements, implementation and self-administration of concluded agreements. The negotiation and collaboration takes place both at national/sector level and local level. However, influence on the bipartite arena, very much depends on the bargaining power of unions and employers' organisations. If membership rates are dropping, this will affect the coverage of collective agreements quantitatively and qualitatively. High coverage and efficient implementation of agreements are important factors, when governments evaluate self-regulation via collective agreements.

The choice of arena has an impact on the degree of influence and the content, form and implementation of the regulation. When unions and employers' organisations in Denmark, Sweden and Germany respond to the digitalization of work, they potentially have the highest degree of influence on the bipartite arena via for instance collective agreements. This is especially true for Denmark and Sweden, where bipartite regulation plays an even more dominant role than in Germany. Considering the dropping union densities in large parts of private services in all three countries, this might, however, not be their first choice. Furthermore, in case of digital platforms, which neither consider themselves to be employers nor are members of employers organisations, it can be difficult for unions to find a bargaining partner. Maybe the organisations prioritise to make an impact on state initiatives – commission work, legislation etc. – and work on the tripartite and unilateral arena. On the unilateral arena organisations can for instance make an impact on legislative processes, whereas the tripartite arena can be important with regards to affecting the overall policy work. Often, organisations make use of more than one arena to make an impact on future regulation. Forum shopping is a known phenomenon in neo-corporatist models – if organisations cannot get an influence in one arena, they try the others until they get their message through (Due and Madsen 2009).

Methods

This article is based on desk research on digitalization of service work, background interviews with researchers working on the topic followed by interviews with unions and employers' organisations on their responses to digitalization. All empirical data was collected during 2016 and included a total of 14 interviews. First, I conducted desk research to formulate this article's main research questions. Second, I conducted four background interviews with researchers in the UK and the US working on the topic of digitalization of service work. These background interviews were used to design semi-structured interview guides for social partners in the service sector in Denmark, Sweden and Germany. Six interviewees among the social partners in the three countries were selected carefully according to the following selection criteria. First, interviewees were selected at similar levels (sector level in private services) to facilitate a valid comparison of answers across unions and employers' organisations and across countries. Second, interviewees were selected following an information-oriented selection strategy (Flyvbjerg, 1996), i.e. I selected the representative from the sector level organisation that had the highest knowledge and experience within the field of digitalisation of work. During this process, I conducted two interviews at confederate level in Denmark and two interviews at EU level within the private services to identify the relevant interviewees. Finally, I interviewed the sector level representatives. Each of these interviews lasted 1½-2 hours and was recorded. After each interview a condensation strategy were used to summarize the conclusions. The strategy of analysis was to address the following three research questions:

- How do unions and employers' organizations in private services define digitalization of work? Do they include both the automatization and the work without jobs debate?
- What are - in their perspective – the consequences of digitalization of service work?
- Which social partner initiatives have they been part of? Do initiatives have a unilateral, tripartite or bipartite character?

Answers were coded according to these three questions in all six sector level interviews and displayed in four tables. All table contents were sent to the informants for comments and were revised according to

their suggestions. Although the representatives from the sector –level organisations in private services in all three countries answered all questions from the service sector perspective, it quickly became clear that some of the initiatives were not restricted to the private service sector. This was among others the case for some forms of commission work. Furthermore, the answers from the union and the employers' organisation in each country were not always identical regarding the bipartite and tripartite arena. Sometimes, one side of the table would mention certain initiatives not mentioned by the other side of the table. However, these initiatives were still included in the analysis, as the two sides of the table not always participated in the same initiatives (for instance company-level agreements, certain forms of commissions at confederate level etc.).

Analysis

In this section the result of our analysis is presented. First, it is analysed how social partners define digitalization of work and its consequences in each country – and the differences and similarities across the two sides of industry. Then, these analyses are compared across the three countries. Second, social partner initiatives on three political arenas – unilateral, tripartite and bipartite – are analysed in each country. These findings are also compared across countries.

Digitalization of work – definitions and consequences

Representatives from unions and employers' organisations seem to define digitalization quite similarly in each country – and across the three countries. However, when asked about their perspectives on the consequences of digitalization, the two sides of industry differed. This was the case in both Denmark, Sweden and Germany.

When the union representative and the representative from the employers' organisation in *Denmark* were asked, how they would define digitalization of work, they both quite quickly pointed at the two main trends mentioned in the literature – how digitalization leads to automatization of work and creates work without jobs. However, they looked upon these trends with different perspectives. The union representative underlined how automatization leads to job loss and demands for new competences and further training, whereas the representative from the employers' organisation stressed the importance of securing an attractive environment for business in Denmark to attract economic activity (see Table 2). This also included supplying employees with new competences. When it came to the creation of work without jobs, the union representative was concerned with how decent wages and working conditions could be secured, whereas the representative from the employers' organisation was concerned with how to remove (or avoid) excess regulation and welcome new business models to Denmark.

Although the definitions of digitalization of work were similar among the two parties, the perspective on the consequences of digitalization was different. Whereas the Danish union focused on the consequences through the lens of labour market policy (how to regulate wages and working conditions), the Danish employers' organisation addressed the consequences through the lens of business policy (how to attract and keep economic activity).

In *Sweden*, both the union representative and the representative from the employers' organisation also quickly addressed both issues of digitalization – how digitalization leads to automatization of work and creates work without jobs. However, they did not disagree quite as much as to the consequences of digitalization as in the Danish case. The union representative mentioned (as his Danish colleague) job loss and the need for reskilling as a consequence of automatization, whereas the representative from the employers' organisation underlined that automatization would destroy tasks – not jobs (see Table 2). Therefore, he expected the final job loss to be less severe than anticipated. Furthermore, the representative from the Swedish employers' organisation underlined that the creation of work without jobs via platforms is a new form of aggregating tasks that actually creates more employment opportunities. However, platforms also leads to regulatory challenges. The Swedish union representative was less optimistic about these new ways of organising work, which implies several challenges. How can unions unionise workers that perform tasks via platforms? How can these workers take part in the unemployment benefit systems - is it possible to create a portable benefit system? Like in Denmark, the representative from the Swedish employers' organisation was more concerned with job creation and the Swedish union representative more concerned with job destruction. However, the two parties in Sweden both addressed digitalization as an important issue in labour market politics.

Finally, the union representative and the representative from the employers' organization in *Germany* also addressed the issues of how digitalization leads to automatization of work and how digitalization creates work without jobs. However, both representatives also mentioned a third issue: how digitalization facilitates control and surveillance (see Table 2). This may be for historical reasons – Germany has since WWII been very cautious about registration – but the German union representative and the German employers representative from the employers organisations raised this topic for different reasons. The German union representative feared that digitalization of work would lead to more employer control and capitalisation of all tasks, including small breaks during the workday. Digitalization allows employers to register everything by the second which facilitates a detailed control of worker behaviour. The representative from the German employers' organisation feared that digitalization of work would lead to a loss of data security and privacy – especially for SMEs who cannot afford to buy the competence needed to secure their data. In conclusion, both sides of industry feared the potential consequences of the data registration that digitalization facilitates.

Considering automatization of work, the answers from the German representatives were very similar to those from their colleagues from Sweden and Denmark. The German union representative mentioned job loss and new qualification requirements as a consequence of automatization, whereas the representative from the German employers' organisation underlined that there will be a job loss but it will happen slowly and incrementally. Again, the representative from the German employers' organisation was less pessimistic than the German union representative. Regarding work without jobs, the German representatives appear very similar in their views compared to their Nordic colleagues. The German union representative presented a rather pessimistic evaluation of the situation and feared that digitalization would lead to the creation of a freelance labour market, where there is no employer, no employee and no workplace. In his perspective, there is a real danger that this will lead to a digital precariat. The representative from the German employers' organisation considered the current platforms as test cases that will be addressed and regu-

lated over time. However, he perceived it to be a challenge if the size of the platform economy expands, as this can trigger unfair competition between digital and physical firms.

In sum, union representatives and representatives from employers' organisations in private services in Denmark, Sweden and Germany define digitalization of work in rather similar ways. All interviewees mentioned how digitalization accelerates automatization of work and creates work without jobs via digital platforms. The interviewees from Germany added, however, a third dimension by stressing how digitalization also facilitates increased control and surveillance of the employees and of the firms. However, if we focus on the consequences of these processes, the union representatives and representatives from the employers' organisations seem to disagree in all three countries. Whereas the German, Danish and Swedish union representatives mainly perceived the consequences of digitalization as a labour market policy issue and fear job loss and a precarisation of wages and working conditions, the representatives from the Danish, German and Swedish employers' organisation mainly considered the consequences of digitalization as a business policy issue and feared that excess regulation would lead to fewer jobs and less economic activity. This difference is most visible in the Danish case, whereas the differences are more moderate in the Swedish and the German case.

Table 2: Definition and consequences of digitalization of service work – responses from unions and employers' organisations in Denmark, Sweden and Germany

	Denmark		Sweden		Germany	
	Union	Employers' organization	Union	Employers' organization	Union	Employers' organization
Digitalization accelerates automatization of work	Job loss, new competences	Securing economic activity, new competences	Job loss, reskilling	Destroys tasks - not jobs	Job loss, new qualification requirements	Job loss, evolution
Digitalization creates work without jobs	Securing pay and working conditions	Welcome new business models	New ways of organizing work – how unionise and create portable benefit systems?	New forms of aggregating tasks – more employment opportunities, regulation challenges	Freelance work, no employer, no workplace and no employee, digital precariat	Test cases, unfair competition
Digitalization facilitates control and surveillance*	-	-	-	-	Digitalization facilitates employer control and capitalisation of worker tasks	Digitalization questions data security and privacy for firms (SMEs)

*The topic of how digitalization facilitates control and surveillance was mentioned by both the union and the employers' organisation in Germany, whereas this was not the case in Denmark and Sweden.

Social partner initiatives on the digitalization of work – unilateral, tripartite and/or bipartite responses?

Our attention is now turned to the three possible political arenas of regulation in neo-corporatist labour market models. Here, the analysis focuses on the answers by the union representatives and the representatives from employers' organization in Denmark, Sweden and Germany to the question of which initiatives their organisation have formed part of on the topic of digitalization of work. In general, the unions and employers' organisations in all three countries seem to have been very active on the unilateral arena, whereas activities on the tripartite and the bipartite arena differ among the countries.

In *Denmark*, the initiatives on digitalization of work by the union and the employers' organisation mainly have been on the unilateral arena (see Table 3). They have published analyses/reports, commented in the media, conducted political projects, initiated dialogues with departments and political parties, participated in dialogues in European organisations/forums. Furthermore, the union reports that they have responded to EU strategies on the topic. Finally, the Danish union has created a new labour market pension for union members not covered by collective agreement (including freelancers) and a freelancer network. Initiatives on the tripartite arena have been limited until the time of writing. Unions and employers' organisations have exploited their existing tripartite cooperation on education and further training to discuss and create further training within the field of digitalization. Unions have organised a conference on platform economy, and the government has initiated a strategy writing process on platform economy. However, the latter has been a relatively closed and delayed process. Other initiatives are scheduled for 2017. Initiatives on the bipartite arena have been even more limited and mainly informal. Unions and employers' organisations have had informal dialogues with each other, and the union has contacted new digital employers for informal talks.

Table 3: Social partner initiatives on digitalization of work in private services in Denmark – unilateral, tripartite and bipartite arenas compared

Denmark	Union	Employers' organisation
Unilateral arena	<ul style="list-style-type: none"> Analyses/reports, media appearance Political project Dialogue with departments and political parties Responses to EU strategies Labour market pension for union members - including freelancers; freelancer network Dialogue with European and international unions 	<ul style="list-style-type: none"> Analyses/reports, media appearance Political project Dialogue with departments and political parties Dialogue with European forums and employers' organisations
Tripartite arena	<ul style="list-style-type: none"> Tripartite cooperation on education and further training Roundtable at Copenhagen municipality Government-led strategy process on sharing economy Conference on platform economy 	<ul style="list-style-type: none"> Tripartite cooperation on education and further training Roundtable at Copenhagen municipality Company forum Debate at Denmark's Political Festival on Bornholm Tripartite meetings on unemployment benefits Tripartite negotiations on further training scheduled for 2017
Bipartite arena	<ul style="list-style-type: none"> Informal contacts to employers' organisations Contact new digital employers 	<ul style="list-style-type: none"> Informal contacts to unions

In *Sweden* – like in Denmark – there has also been a number of initiatives on digitalization of work by the union and the employers' organisation on the unilateral arena (see Table 4). The Swedish union has also (as part of a cartel of white collar unions) participated in an attempt to build a private unemployment office for white collar workers, which could deliver portable benefits. Unlike Denmark, there have been several initiatives on the tripartite arena in Sweden. The Swedish government has initiated at least eight commissions related to the topic of digitalization of work: Digitalization commission, Taxi commission, Workplace safety in the new economy, Commission on future work etc. Furthermore, many new tripartite initiatives from the Swedish government on digital platforms, life-long learning etc. are in the making. Like in Denmark, initiatives on the bipartite arena in Sweden have been few.

Table 4: Social partner initiatives on digitalization of work in private services in Sweden – unilateral, tripartite and bipartite arenas compared

Sweden	Union	Employers' organisation
Unilateral arena	<ul style="list-style-type: none"> Analyses/reports, media appearance Dialogue with departments and political parties Dialogue with European and international unions Responses to EU strategies Website on automatization Attempt to build a private unemployment office for white collar workers (through a cartel of white collar unions) 	<ul style="list-style-type: none"> Analyses/reports, media appearance Think tank which deals with the issues of education in a digital context Dialogue with departments and political parties Dialogue with European forums and employers' organisations
Tripartite arena	<ul style="list-style-type: none"> Digitalization commission (2013) Taxi commission (2015) Workplace safety in the new economy (2015) + five more commissions since 2015 Many new tripartite initiatives in the making on platforms, life-long learning and social security 	<ul style="list-style-type: none"> Commission on future work (Arbetet i framtiden)
Bipartite arena	<ul style="list-style-type: none"> Informal contacts to employers' organisations Contact new digital employers 	<ul style="list-style-type: none"> Informal contacts to unions

In *Germany* – like in Denmark and Sweden - there has also been several initiatives on digitalization of work by the union and the employers' organisation on the unilateral arena (see Table 5). However, there have been more initiatives on the bipartite arena in Germany than in Sweden and Denmark. Apart from the informal dialogue between unions and employers' organisations on the topic, collective agreements have been concluded. Most of these agreements have been concluded at larger companies within the framework of 'Collective agreements to protect the employees from redundancies as a result of technical progress and automatization' (Rationalisierungsschutzverträge). In recent years, the union has concluded an agreement with Telekom that addressed the job loss and reskilling needs as a consequence of digitalization. The German union and employers' organisation have been very active on the tripartite arena. Like in Sweden, the German government has initiated a number of commissions on digitalization of work (at least eight) that include both government representatives, unions, employers' organisations and other actors. This includes: Arbeiten 4,0 and Platform competitiveness. The government has also launched a large research fund entitled Innovations for the production, services and labour of tomorrow that supports research in digitalization of work.

Table 5: Social partner initiatives on digitalization of work in private services in Germany – unilateral, tripartite and bipartite arenas compared

Germany	Union	Employers' organisation
Unilateral arena	<ul style="list-style-type: none"> Analyses/reports, media appearance Dialogue with departments and political parties Dialogue with European and international unions Responses to EU strategies (Digital single market strategy, Refit strategy) 	<ul style="list-style-type: none"> Analyses/reports, media appearance Dialogue with departments and political parties Dialogue with European forums and employers' organisations Internal political project: Digitalization Responses to EU strategies (Service directive) Participation in High Level Group
Tripartite arena	<ul style="list-style-type: none"> Federal Ministry of Labour: Arbeiten 4,0 (Green book 2015/white book 2016) Ministry of economic affairs: Platform competitiveness (green book/white book) + six other government-initiated processes, which entails tripartite elements Ministry of education and science affairs: Innovations for the production, services and labour of tomorrow (research funding) 	<ul style="list-style-type: none"> Participation in several commissions initiated by ministries Conference 2015: Digital services
Bipartite arena	<ul style="list-style-type: none"> Informal contacts to employers' organisations Collective agreements to protect the employees from redundancies as a result of technical progress and automatization (Rationalisierungsschutzverträge) Telekom agreement (2015): early retirement, reskilling. 	<ul style="list-style-type: none"> Informal contacts to unions

In conclusion, both unions and employers' organisations in all three countries seem to have exploited primarily the unilateral arena when it comes to digitalization of work. However, the Danish and the Swedish unions differ to the German union on the unilateral arena, as they have tried to create concrete benefits for freelancers and other forms of non-standard workers not covered by collective agreement. The Danish union succeeded in creating a favourable pension scheme for union members (with similar terms as labour market pensions), whereas the Swedish union attempted to create a private unemployment office but did not succeed. The tripartite arena has been used very differently in the three countries. The Danish social partners have discussed digitalization of work more or less informally in the existing fora for tripartite cooperation on education and further training as well as in a couple of new fora and roundtable discussions. In Sweden and Germany, the approach on the tripartite arena has been much more formal and substantial. Both the Swedish and the German government has initiated at least eight commissions on the topic of digitalization of work in which the unions and employers' organisations have participated. On top of that the German government has also launched a large research fund on the theme. The bipartite arena has been used the least in all three countries. Most initiatives here has had the character of informal dialogues. However, the German union stands out as they have negotiated collective agreements at company level

that address the challenges of automatization of work. This has primarily taken place in larger well-organised companies. Recently, they have concluded an agreement with Telekom.

Conclusion and discussion

The discussion on digitalization of work has intensified in recent years. The literature points at two main trends that are accelerated by digitalization – the automatization of work which erases or changes job functions and the creation of work without jobs via digital platforms. These trends are especially strong in private services. This paper raises the question as to how social partners in private services define the digitalization of work and its consequences along with their initiatives on digitalization. Drawing on interviews with unions and employers' organizations at sector level in private services in three European countries our analysis explores the social partner initiatives on the unilateral, tripartite and bipartite arena.

Our analysis suggests that the unions and employers' organisations in all three countries agree on how to define digitalization and what the important trends are (automatization and work without jobs). The German social partners add to this how digitalization of work facilitates control and surveillance. However, the social partners differ when it comes to how to address these trends. Whereas the union representatives mainly address digitalization as a labour market policy issue and fear job loss and precarious wages and working conditions, the representatives from employers' organisations mainly address digitalization as a business policy issue and fear that excess regulation will scare off jobs and other forms of economic activity. This difference is most visible in the Danish case, whereas the difference is more moderate in the Swedish and the German case.

The varying perspectives on digitalization between unions and employers' organisations might relate to the use of political arenas by the organisations. In all three countries, both sides of industry demonstrate many initiatives on digitalization of work on the unilateral arena. In Denmark, initiatives on the tripartite and the bipartite arena are rather few. This means that the unilateral arena plays the dominant role. However, it is also the arena where the influence of the unions and employers' organisations is potentially weakest, and it is an arena, where the two sides of industry do not meet directly and create common perspectives and policies. This can help explain why the Danish union and employers' organisation address the consequences of digitalisation from very different perspectives – and disagree more than their Swedish and German colleagues. They have not to the same degree been forced to a social dialogue on the topic in tripartite forums, where common concepts and perceptions of the development can be developed. Government initiated tripartite initiatives might be especially important in private services in Denmark, since union densities are lower than in other parts of the private sector and most companies are small or medium-sized. The bargaining mandate for unions is therefore relatively weak and bipartite initiatives not easy to establish. Therefore, the limited tripartite initiatives on digitalisation is a challenge to the formation of future agreement-based regulation on the topic in Denmark.

Unlike the Danish government, the Swedish and the German governments have initiated several large commissions on the digitalization of work. This might be an effect of the larger extent of legislation on the Swedish and especially the German labour market. The commissions allows unions and employers' organisations to combine their initiatives on the unilateral arena with coordination on the tripartite arena. Unions and employers' organisations in Sweden and Germany therefore have a larger potential to create a com-

mon understanding of digitalization of service work. This also increases their ability to make an impact on future legislation on the topic. However, one might ask the critical question, whether all these commissions have had significant impacts in practice. Have their recommendations been implemented at workplace level, and what are their effects? Considering the dropping union densities in private services in Sweden and Germany, the bargaining power of union to implement recommendations via collective agreement is limited. Implementation of legislation can also be a challenge. This is especially true with regards to work via digital platforms, if this work is not registered by the public authorities in one way or another. This brings us back to the German discussion on data control – who owns and have access to data? This will be a decisive aspect in future regulation of digital work. In addition to this, one might ask if the organisations and the government have the capacity to deal with the data. It does not help to have data access, if data cannot be analysed.

Our analysis suggests that only the unions and employers' organisations in Germany have made a formal use of the bipartite arena on the subject of digitalization. They have concluded collective agreements on the consequences of digitalization at enterprise level. Examples mainly cover larger and organised companies like Telekom. The question is of course, if bipartite initiatives will work also for SMEs, which make up the majority of the private service sector in Germany, but often are less well organised than the larger companies.

In general, the unilateral arena seems to be the main arena for *initiatives* on digitalization of work by unions and employers' organisations in all three countries. The tripartite coordination in Sweden and Germany is initiated by the governments – unions and employers' organisations are participants. Bipartite coordination only seems to have been initiated in Germany by organisations at larger companies. These conclusions might reflect the dropping union densities in private services in all three countries. Union density is lowest in German private services – with the exception of certain large companies – but significant drops in union densities have also been observed in Danish and Swedish private services during the last decade. In this landscape of weakened bargaining mandates and resources, the unions might prioritise to make an impact via lobbyism initiatives and affect legislative processes as well as accept invitations to participate in commission work.

It can be a challenge to the Danish and Swedish models of labour market regulation that the bipartite arena has not been used more when considering that the Danish and Swedish labour markets are mainly regulated by collective agreements. This is especially true for Denmark, where no government-led commission work on digitalisation has been finalised, and the social partners still talk about the topic in quite different ways. Thus, commission work on digitalisation might enhance the social dialogue in Denmark.

The creation of work without jobs via digital platforms is still in the making in the sense that this part of the labour market only make up small parts of the Western economies. However, if this trend grows, it will challenge all sorts of regulation in the Western world – also legislation. The German labour market is to a larger extent regulated by legislation than the Danish and the Swedish labour market. For instance, they have a statutory minimum wage, which means they in principle have a safety net for new forms of digital work. The question is, however, if this regulation will work in practice, when it comes to work via online platforms. Many questions remain unanswered, when it comes to implementing the statutory minimum

wage in a manner that will also capture the platform economy in an efficient and ethically sound way. This calls for future research in implementation of regulation with regards to work via digital platforms.

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