

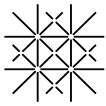
Unions in the postal services of the future.

A global survey on labor union representatives' assessment of digitalization in the post and logistics sector.

Dr. Jacqueline Kalbermatter, Dr. des. Simon Schaupp, Verena Hartleitner, Prof. Dr. Oliver Nachtwey

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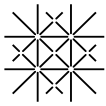


Executive Summary

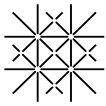
This study is an explorative analysis of labor union representatives' assessment of digital transformation in the postal and logistics sector and the consequences for union activities in different regions of the world. It consists of two parts: Part I is a review of existing research on the topic of digitalization and labor relations in the postal and logistics sector. Part II represents the core of the study, consisting of a qualitative survey of union representatives from that sector regarding their stance towards digitalization and respective union strategies. The sample consists of 29 detailed written statements of union representatives from all continents, answering to a set of open questions.

Key findings of the study are:

- Digitalization in the postal sector is deeply entangled with the global trend of **privatizing** formerly public or state-owned services. Privatization increases competitive pressure and thus the need for rationalization, which is currently met via digitalization. The increase in platform-companies and e-commerce is a central hinge between privatization and digitalization.
- In almost all of the regions surveyed, digital technologies are the basic technological infrastructure that enables postal work. There is a set of specific **technology bundles** which are consistently used in all of these regions. These are:
 - Physical automation, especially automatic sorting
 - Tracking/Tracing of parcels and letters
 - Enterprise Resource Planning (ERP) Software
 - Various digital financial services
 - Digital navigation, route planning
 - Handheld devices central to delivery work
- The surveyed union representatives consistently report a **net job loss** as a consequence of digitalization, although it also has created some new jobs. Older workers in particular are reported to be on the losing end of digitalization. Accordingly, strategies to combat (further) job losses dominate, specifically: the prevention of collective redundancies, voluntary early retirement and compensation payment, internal job transitions, as well as up-skilling or re-skilling programs and measures.

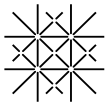


- Respondents report an increase in **precarious** forms of employment, such as subcontracting, temporary work or bogus self-employment. The key challenge for labor unions in this context lies in organizing workers beyond the core workforce and establishing regulatory measures for large-scale private competitors in the postal sector and, especially, in the logistics sector.
- In terms of working conditions, respondents refer to work **facilitation** through automation and digital assistance. However, they also underline that especially algorithmic work control leads to increased **surveillance** and **work intensification**. Therefore, union representatives see a need for regulation that in many cases is just beginning and generally consists in a combination of national legal frameworks and collective bargaining agreements.
- This intensification of work is perceived in turn as a factor in increased **stress** and thus as a risk for workers' health. Yet, respondents also see the potential for digital systems to **prevent accidents**. While some unions have health and safety standards guaranteed by their CBAs, national legislation or codetermination in health and safety committees are a common practice.
- **Four patterns** among the cases surveyed can be distinguished regarding **underlying conditions of the postal sector** and **union strategies** for tackling upcoming challenges related to digitalization:
 - The **first pattern** is the most dominant and occurs in unions organizing workers in state and semi-state companies. Their strategies are aimed at maintaining monopoly or competitiveness in a liberalized market with regards to digitalization. This is expressed in strong alliances between unions and state-owned companies.
 - The **second pattern** can be identified in labor unions that not only organize workers in state-owned companies, but also a few workers in private companies. While these unions have successful strategies such as collective agreements and prevention of job losses for workers in state companies, their main challenge lies in the fact that no collective agreements have been negotiated with private companies.
 - The **third pattern** reflects the situation for unions organizing workers in private companies operating in a highly competitive postal and logistics sector. Related to



this competition, problems concerning working conditions in general and digital monitoring in particular appear to be even more severe, and one dominant strategy consists of agreements that prohibit the use of technology to track individuals or for individual performance management.

- The **fourth pattern** is based on unions' assessment that no problems exist related to digitalization. Therefore, no specific labor union strategies are indicated. This pattern includes unions whose affiliates work in both private and state companies.
- Overall, the surveyed union representatives see digitalization as inevitable. Yet, they consistently argue that **new regulations** are needed because older standards often times do not address the specific problems of digitalized work.



Introduction

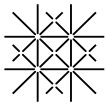
Digitalization represents a challenge for all economic sectors. Companies around the globe experience increasing pressure to digitalize their processes in order to stay competitive. The sectors of post and logistics are no exemption from this general trend. In logistics, digital infrastructures have long become the backbone of global coordination, but the postal sector has also seen a wave of privatization over the last decades, which constitutes the institutional background of an increasing demand for digital rationalization. This study evaluates how labor unions in the global postal & logistics sector react to digitalization. It consists of two parts: The first part is a literature review that recapitulates the state of research on labor relations and unions regarding digital transformation in the postal and logistics sector. This part briefly reconstructs how digitalization in the postal sector is connected to privatization and what other studies have identified as the effect of digitalization on working conditions, employment and union strategies. This review provides a context for the empirical part of the study, but it also identifies gaps in existing research. Most studies neglect the role of labor unions in digitalization. Even more importantly, previous studies have mostly focused on high-tech regions in the global north, while the global south has received little attention and regional comparisons are absent. The study aims to close these gaps.

Methodology

The second part of the study consists of an explorative analysis of how union representatives in different regions of the world assess the digital transformation. The basis for this is a qualitative survey with 17 open questions that was sent to union representatives in charge of the postal & logistics sector. The questionnaires addressed the interviewee's assessments in five areas: (1.) The extent of digitalization in their region and branch. (2.) The effects of digitalization on employment. (3) The effect of digitalization on working conditions. (4) The effect of digitalization on the health and safety of workers. (5) Union strategies in dealing with the digital transformation. Overall, 29 questionnaires were returned with complete answers. Of these, 13 stem from European countries (Austria, Belgium [3], Bulgaria [2], Czech Republic, France, Germany, Ireland, Netherlands, Switzerland, UK) 5 from Asia-Pacific (Bangladesh, India, Japan, Malaysia, South Korea), 6 from Africa (Ghana, Kenya, Morocco, Mauritania, Palestine, Tunisia) and 4 from the Americas (Argentina [2], Brazil, Chile, USA). The responses were analyzed using the standards of qualitative content analysis (Schreier, 2012).

Report structure

This report is divided into two parts: The first part recapitulates the state of research on digital transformation in the postal & logistics sector. Thereby it identifies three central topics in the existing literature: Privatization, changes in the digital labor process and labor conflicts. The second



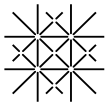
part contains the results of analyses of union representatives' assessments. Chapter 1 addresses the extent of digital technologies. In this, a number of recurring technology bundles can be identified, the most important being: automated sorting, tracking and tracing, handheld computers and digital resource management. Based on this, chapter 2 focuses on the interviewees' assessment of the effect of digitalization on employment. Here, respondents see new jobs created in the course of digitalization, but most agree that there has been a net job loss. Chapter 3 analyses the assessment of the effect of digitalization on working conditions. In this regard, some respondents view digitalization as facilitating work in their sector, but many criticize new forms of surveillance and work intensification. Section 6 shows that interviewees see this intensification as leading to new forms of stress but that they also identify possibilities for using digital technology to create a safer workplace. These results are compiled in chapter 5 in the form of patterns and exemplified by specific countries. In regard to all of these topics, the surveyed union representatives see a need for regulation, as many existing norms fall back behind the new digital realities.

Part I: Context

This part of the study reviews existing literature on digitalization and labor relations in the global post and logistics sector. It begins by elaborating on the entanglement of digitalization with the broader economic trend of privatization, which has taken place in postal services all over the world during the last decades. It then continues to present research on the digitalized labor process in postal and logistics work, emphasizing the importance of algorithmic work control. The last section presents research on changes in industrial relations in the course of digitalization and corresponding union mobilization strategies.

1. Under Pressure: Privatization and Liberalization

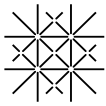
Research on the postal sector previously focused on the effects of liberalization and privatization (Bouffartigue et al., 2018a; Flecker et al., 2016; Haidinger, 2012; Hermann, 2011; Holst & Singe, 2013; Jakubowski et al., 2018; UNI, 2009). Especially in parcel delivery, privatization resulted in a fragmentation of the labor market, namely into three spheres in which the institutions of labor regulation play different roles: the spheres of globally operating logistics groups, the spheres of small-scale subcontractors and the spheres of self-propelled micro-entrepreneurs (Holst & Singe, 2013). Generally, studies on the effects of liberalization in the postal market indicate not only a decrease in employment numbers, but also atypical employment contracts with less employment security and lower wages (Hermann, 2011; Jakubowski et al., 2018; UNI, 2009). Based on the



Universal Postal Union data (2019c, p. 18), from 2007 to 2017 total employment numbers decreased by almost six percent while part-time employment rose by four percent.

These effects are connected to the fact that other competitors or providers do not uphold the working conditions that former domestic monopolists offered. Further, existing research geographically concentrates on regions within Europe. Research in countries of the global south reveals customer satisfaction with digital innovation in post offices (Isa & Kiumarsi, 2019; Narula, 2019), yet there is little research on the transformation of work. The Index for postal development reveals a higher inequality between countries in 2019 compared to the years before (Boffa et al., 2019), with the aggregate of countries in the MENA region catching up on e-commerce while countries in the Americas and African countries reveal little growth in the postal sector except in individual cases like Nigeria (on barriers to e-commerce see Kshetri, 2007). In general, the global rise of e-commerce is the central hinge between liberalization and digitalization in the postal and logistics sector. While the total volume of letters is dropping, the number of parcels is growing fast through e-commerce (Laudon and Traver, 2012). Still, as empirical research confirms, parcel delivery as a form of employment goes along with various hardships: Moore and Newsome (2018) find that self-employed delivery workers must cope with informalization and the transfer of risk by the service partner to their own disadvantage, (e.g. fines, change of demand and intensity). Similar trends are reported from other European countries (Holst & Singe, 2013).

These previous studies highlight the restructuring of the sector whereby technological change only appears as a secondary topic and the specificity of digitalization as an all-encompassing transformation has been deferred. Little data is available on how technological innovation alters jobs, working conditions and union mobilization in most countries. However, the challenges that unions face because of liberalization and privatization cannot be clearly separated from the effects of technological change: these developments are interlocked, especially since privatization increases the pressure for rationalization and cost optimization once again. In fact, technological innovation stabilizes rationalization processes that started beforehand. In a study on the effects of liberalization on the logistic sector in Europe, Haidinger (2012) shows that employed deliverers are facing an intensification of work, meaning delivering more parcels in less time, being surveyed by analogue and digital devices. Digital control supplements lean management methods, since competitiveness and time agreements with contractors require full productivity without interruptions. In an empirical case study, Jeahrting (2019) identifies two strategies for achieving control over the labor process in logistic companies: The first consists in repressive measures and time control. The other works through incentivization and bonuses. Unions hence face a two-fold issue when addressing liberalization as well as technological innovation in the labor process. Firstly, "the challenge is to renew the trade union basis: from statutory workers to a wide range of different

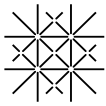


wage earners as compared to the past." (Bouffartigue et al., 2018a). More concretely, a proliferation of contract types takes place that deprives postal workers of traditional standard labor contracts and confronts them with precarious employment contracts. This weakens the traditionally held strategic power of high union density in the sector, since its "standing is jeopardized by the blurring of clear-cut sectoral boundaries, fueling inter-union competition and enabling employers to evade higher-wage collective agreements through outsourcing" (Benvegnú et al., 2018). Drivers and couriers working in delivery experience a regression of collegial support, an increase in work intensity, individualization and the extension of working time (Haidinger, 2012; Moore & Newsome, 2018).

The developments described above affect workers directly as they are alienated from their work owing to its transformation (Flecker et al., 2016) or precarious working conditions like in local courier services (Concetta Ambra & Pulignano, 2018; Pupo & Noack, 2014). Thus, postal workers are "particularly sensitive to the deterioration of their working conditions and the 'meaning' of their work, i.e. elements that are particularly difficult to negotiate at the centralized level, and which give rise especially in certain countries like France or Spain – to a high level of conflict that is dispersed and not very visible." (Bouffartigue et al. 2018 a, p. 28).

2. The Digitalized Labor Processes in Post and Logistics

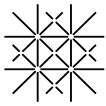
New digital services and products: Studies of digitalization in the service sector have emphasized the factor of a rationalization in consumption (Staab, 2016). In the postal sector, the digital market generates visions for the post of the future, which include the reorganization of operators into digital corporations, innovations in the field of digital services, public-private cooperation with governments, the rise of e-commerce and e-banking services (UPU, 2019a, Finger et al., 2014; Jaag & Finger, 2017). There are numerous examples of innovative services within the post, such as e-commerce, local logistics, e-health and services for older people, digital trust services and financial services (UPU, 2019a). The digital corporation requires a diversification of products and an integration into the digital market, thus relying on digital data as resource and product at the same time. For example, data collection services become a by-product of postal delivery through mounting sensors to delivery vehicles (Ravnitzky, 2011). Alternatively, LaPoste presents in its strategic plan a vision of becoming the main provider of proximity services including domestic health services, e-commerce and urban logistics (LaPoste, 2018). In the process of launching e-services and digital platforms by national post organizations, workers are attributed a central role as postal operators introduce and set up the new services in contact with the customers, e.g. through identification and other installations for AI-mediated postal services (Lewandowski et al., 2019).



The digitalization of the postal sector also affects financial services that have a long tradition in postal services: Globally, 91% of all postal operators offer some form of financial service, while only 8% are fully-fledged postal banks (UPU 2019b). UPU's study on the financialization of the post reveals the potential of a digital environment, to provide inclusive financial services especially in unbanked or underbanked populations, but also to build up trust in customers by direct communication through multiple channels (UPU 2019 b).

Algorithmic work control: in most cases, algorithmic work control takes the form of 'labor measured by technical systems of key performance indicators with the aim to establish targets of required work effort, rendering workers more accountable and monitoring them more closely' (C Benvegnú et al., 2018, S. 90). ICT also allows for digital self-evaluation integrated into algorithmic control, as workers receive instant feedback when they engage in inefficient or non-compliant acts (Schaupp & Diab, 2019). More broadly, digitalization at the level of the labor process has been described as intensifying and accelerating work processes, as well as alienating workers through the abstraction of work and surveillance (Altenried, 2019; Moore et al. 2018). In particular, electronic performance monitoring has been identified as intensifying control over workers and producing subsequent health risks as a result of stress. Yet in most countries, there are no regulations or laws in place that protect workers under these new technological developments (P. V. Moore et al., 2018; Todolí-Signes, 2019). Field studies in warehouses have shown that the organization of work changes completely as work becomes standardized through the "scan and stow" mechanism, whereby logistic workers transport items through the warehouse instructed by an analogue or digital shopping list and equipped with a hand scanner (Barthel & Rottenbach, 2017). Algorithms calculate the routes, time and working performance is monitored and controlled through performance review with supervisors: in fact, algorithmic work control proves to be most effective in combination with bonus or incentives policies that reward individual performance (Jaehrling, 2019). In postal services, tracking and tracing objects can be observed in 91% of postal service organizations analyzed in a survey by UPU (UPU 2019a).

More concretely, Haidinger (2012) finds that contracts with drivers specify rules, e.g. punctuality, car availability and "shaven face", and also monitor all steps in the delivery process via cameras, GPS-Tracking and electronic handheld devices that send feedback data to the center. The study finds that even though this transparency is not always experienced negatively, it diminishes drivers' autonomy and impedes collegial ties, as collective organization of non-delivered parcels with the aim of reducing working time is replaced by individual competition and longer working hours (Haidinger, 2012). In general, GPS Tracking through electronic devices as well as radio-frequency identification (RFID) systems are used in courier services, e.g. in Austria (Benvegnú et al, 2018: 90).

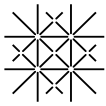


3. Industrial relations and unionization

Industrial relations research suggests that there are six essential elements to union assertiveness: organizing, partnership relations with employers, political action, union restructuring, coalition-building and international solidarity (Frege & Kelly, 2004). All of those elements seem to be affected by digital transformation.

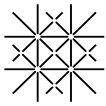
Postal work is traditionally a field characterized by a relatively high level of unionization and widespread collective bargaining agreements, as well as collaborative social partnership. In a study on industrial relations in the European postal sector, three types of collective bargaining agreements have been identified in the context of current transformations: 1. 'Regular' collective bargaining agreements at the company or sector level to govern key employment relations such as wages, working time, employment contracts, etc. 2. Specific agreements aimed at managing social change: These agreements are concluded at the company level and can include precise measures e.g. regarding digitalization or have the character of framework agreements that set out broader principles for change. 3. Integrative agreements for merging arrangements on employment conditions for different types of staff members, e.g. mail versus parcels and blue collar versus white collar workers (SDC, 2017, p. 48). Thus, Moore et al. (2018) report on several collective agreements on algorithmic work control, with the aim of protecting human dignity and occupational health and safety of workers. Seifert (2018) also emphasizes the key role of transnational collective bargaining on the issue of data protection and UNI (2017) has issued a series of cutting-edge proposals on ethical artificial intelligence at the workplace. De Stefano (2018) highlights the crucial role of collective regulation and social partners in governing the impact of technology at the workplace to ensure a vital "human-in-command" approach.

The main problem for these approaches is that over the last decades, union density in the postal sector has decreased in the course of privatization (Flecker et al. 2016). Challenges for organizing and unionization include the individualization and isolation of subcontracted workers in courier services as well as the segmentation of the workforce in warehouses and sorting centers (Pupo & Noack, 2014). In warehouses, a high number of workers is recruited on a temporary basis parallel to a fixed number of permanent workers, so that worker mobilization is limited through this system of segregation (Lindemann & Boyer, 2019). Further, Benvegna et al. (2018) find that the segmentation of the workforce is increased by the precarity of workers with migrant backgrounds. In a study on Latina "perma-temp" workers in US warehouses, gender and race are shown to be intertwined with the instability of contingent jobs in the logistics industry, so that targeted recruitment and differentiated treatment consolidates subordination (Lindemann & Boyer, 2019).



Yet, workers' mobilization in the postal and logistics sector proved to be high in the last years (Benvegnú et al., 2018; Benvegnú, 2018; Bouffartigue et al., 2018b, Tassinari & Maccarrone, 2020). In France, the last years have produced over 1000 small local conflicts provoked by the reorganization of the state postal services and automated redistribution centers. The main source of mobilization lies in the deterioration of work and the change in professional profile, which is in turn connected to a loss of job identity among postal workers (Bouffartigue et al., 2018a; Jounin, 2019). Similarly, in the UK, new management programs of conciliatory employer involvement are contested in the tradition of persisting confrontational industrial relations (Beale & Mustchin, 2014). Sub-contracting and bogus self-employment are becoming relevant issues for union mobilization alongside issues such as working time, working conditions and onerous work done by ageing workers (Bouffartigue et al., 2018a). Further, successful grassroots organizing campaigns have been launched in the growing sub-branches of logistics, e.g. in the last mile delivery sector: grassroot organizing among workers in delivery was able to overcome isolation and foster solidarity among workers contracted under bogus self-employment (Heiland & Schaupp, 2020). What unites the successful examples in this sector is that they follow a participatory approach of social movement unionism (Cant, 2019; Heiland, 2020; Leonardi et al., 2019; Tassinari & Maccarrone, 2020; Woodcock & Gaham, 2020).

Researchers find that in warehouses, as well as in the last mile of delivery, new strategies of organizing workers are urgently needed as regulations in both sectors are circumvented by piece rate payment, flexible working hours and employers' evasion of CBAs (Benvegnú et al., 2018, p. 85). Research on organizing strategies reveals that conventional union strategies hardly impress companies like Amazon, who seem "to be indifferent concerning the institutional contexts: it applies the national collective agreement where this does not necessarily involve confronting with unions; it does not apply it in the opposite case" (Cattero & D'Onofrio, 2018). It is likely that classical collective bargaining agreements do not reach those affected most by digitalization, since employers easily evade the enforcement of labor standards through outsourcing processes and a segmented workforce (Benvegnú et al., 2018). Haidinger (2015) proposes three aspects for organizing outsourced labor: targeted organizing in subcontracting firms, self-organization with union support and re-regulating delivery employment. Other approaches integrate community support in grassroot organizing campaigns (Benvegnú, 2018; Curcio, 2014): In Italy, a model of grassroot organizing that includes "rank-and-file unionization, social activist support, and the usage of ethnic networks" has proven to be most sustainable (Benvegnú et al., 2018). Additionally, landmark gains have been achieved through so-called commodity-chain organizing, which links legal arbitration to international campaigns against big retailers by revealing their exploitative role in the global production chain (De Lara et al., 2016). Thus, in some cases, mobilizations in the logistics



sector have developed high bargaining power where workers occupy strategic positions in the global supply chains, so called “choke points” (Ness, 2018, S. 2).

In summary, existing research shows that digitalization profoundly changes the postal and logistics sector. The first section of this chapter demonstrated that digitalization is deeply entangled with the privatization of the postal sector that has taken place within the last decades. The second section summarized different studies on the effects of digitalization on the immediate labor process in post and logistics. In this, existing studies emphasize that work in this sector is increasingly data-centered and that algorithmic work control especially transforms the labor process. The last section has referred to studies on the effect of industrial relations with regard to digitalization. These show that the postal sector is traditionally characterized by a high level of unionization and collaborative social partnership between employers and unions. However, in the course of privatization and new digital business models, unionization is found to decrease and industrial relations are found to become increasingly characterized by informal conflicts.

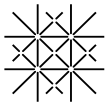
Part II: Explorative study on union representatives’ assessment of digital transformation

In this second part, the results of the study on union representatives’ assessment of digital transformation will be presented with regard to the following issues: In a first step, the extent of digital technologies in the countries is described from the labor union’s perspective (chapter 4). In a second step we describe the impact of the deployment of digital technologies on employment (chapter 5), working conditions (chapter 6), as well as health and safety (chapter 7) according to union representatives. In chapter 8, these results are condensed into four patterns and finally, in chapter 9, we derive conclusions for labor union work in the postal and logistics sector.

4. The extent of digitalization

In almost all of the surveyed regions, digital technologies are the basic technological infrastructure that enables postal work. There is a set of specific technology bundles that are consistently used in all of these regions. These are:

Automatic sorting and transportation: Digital technologies are used primarily to save labor costs. The most common application in postal work is the automated sorting of letters and parcels. This is present in almost all of the regions surveyed. Many postal service organizations also apply additional robotics to move objects within warehouses or to load them onto transport vehicles.



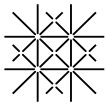
Some high-tech regions, such as Japan and Germany, are also beginning to implement self-driving delivery vehicles or drones.

Tracking and Tracing: While physical automation was widespread before digitalization, a key digital innovation for postal work is object tracing during delivery. With the use of different technologies, such as GPS or RFID, the location of letters and parcels can be identified in order to gain a higher level of process control. This enables postal companies to increase efficiency, to prevent the object losses and to inform customers about the status of their shipment.

Handheld devices and navigation: Digital tracking is not only applied to the transported objects but also to postal company workers themselves. Interviewees from all regions report that delivery work is controlled by digital navigation software that generates delivery routes and instructs delivery personnel where to go next. In most cases, however, this comes along with various forms of behavior monitoring. This can take the form of enforcing safety regulations (especially for safe driving) but also of controlling performance (especially work speed). This is enabled by the fact that, in most cases, control technologies are not only installed into transportation vehicles but also take the form of handheld devices that workers need to carry at every step in their work (for example for scanning parcels or collecting customer signatures). That fact brings with it the technological ability of far-reaching surveillance.

Enterprise Resource Planning/HR-Software: Managerial technologies, such as Enterprise Resource Planning (ERP) or Human Resources (HR) software are widespread in all economic branches around the globe. Thus, postal companies also allocate their corporate resources using such software. For the union representatives interviewed here, this becomes especially relevant in the case of HR-software. In this regard, several interviewees report semi-automatic work allocation and worker performance evaluation. For these purposes, the software creates worker profiles which also contain partially detailed data on work speed collected via tracking devices. In some cases, interviewees report that “artificial intelligence” (AI) is used for automatic process optimization.

Financial technologies: Postal service organizations have long provided financial services as one of their major business branches (cf. Berthaud & Davico, 2013). Digitalization further increases the importance of this trend. In all of the surveyed regions, postal companies use various forms of digital banking applications. In some instances, postal companies completely replace their postal banking offices with online-banking services. Innovations in financial technologies such as blockchain are also beginning to impact postal banking services.

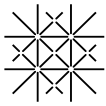


Digital communication: Interviewees report a trend towards digitalizing communication both internally as well as with customers. In most regions, there are internal digital communication systems, for example to inform workers about their tasks. Most regions have some sort of intranet to distribute information. In some cases, such as France, this is extended using digital voting tools in order to include workers in decision-making processes. Customer relations are also digitalized to various degrees. This ranges from information-websites and email or social media contact up to automated communication via chatbots.

Labor platforms: Another techno-organizational development in the postal and logistics sectors is the emergence of digital labor platforms, i.e. platforms that distribute work to independent contractors. Some posts (like in Belgium, France and Germany) have founded their own platforms but the biggest delivery platforms are provided by transnational corporations like Amazon, Uber or eBay. One of the platform model's important risks is the deterioration of labor standards through various forms of bogus self-employment. This also poses a challenge for unions, as new strategies are required to organize this growing group of precarious workers.

Overall, the use of these technology bundles is quite consistent and homogenous across the surveyed regions. There are only very few exceptions to this picture. For example, respondents from Palestine report that digitalization plays no role in postal work. Another exception is represented by respondents from high-tech regions such as Japan, France and Germany, who report the use of autonomous vehicles or "artificial intelligence", which are, however, mostly in experimental stages.

In the general assessment of digitalization, there is a consensus among the union representatives that the digitalization of postal work is inevitable. Most respondents see digitalization as central to increasing efficiency. This, in turn, is considered as a prerequisite for staying competitive in the face of new business models in the post and logistics sectors, especially online retail and platform-based delivery companies. This demonstrates that digitalization is not only a technological development and that it is deeply embedded in the political development of market liberalization and privatization in the postal and logistics sector. Thus, while none of the interviewed union representatives is opposed to digitalization as such, respondents from all regions emphasize that digitalization can only be sustainable if it is not done at the expense of workers. Interviewees therefore see the need for unions to be informed about and involved into the processes of how new technologies are implemented.



5. Impact on Employment

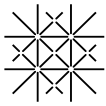
One of the central points that can be identified in the union representatives' assessments of the impact of digitalization on employment is the fear of job losses. While labor union representatives in some countries already report a loss in jobs as a result of digitalization, others are expressing their concerns in general about ongoing digitalization being accompanied by job losses. It can thus be stated that this is one of the key issues and challenges that trade union representatives recognize in the context of digitalization – whether or not it has already taken place. Accordingly, strategies relating to job security are generally considered especially relevant to trade union work currently and in the future.

In the following, we present the challenges that trade union representatives perceive vis-à-vis the development of employment in general and job loss in particular in the context of digitalization and the consequences for trade union work.

Job losses

Union representative statements regarding the impact of digitalization on employment present a very consistent picture: In principle, digitalization is accompanied by the loss of jobs, which is particularly evident in the area of sorting as a result of automation. In several countries, even the increase in online retail and IT jobs, which some union representatives note, will not compensate for the job losses. There are only a few union representatives who report an explicit stagnation in employment in the respective country. This is the case for Bangladesh, Belgium, Germany, India, Ireland, Japan and Palestine. A closer look at the cases indicates that the stagnation of employment in these countries can be explained mainly according to three key factors.

Firstly, the case of Palestine illustrates that digitalization basically plays a marginal role in the postal sector and therefore has little impact on employment: “There is no digitization in the Palestine Post, but limited post offices use the IPS system for international mail”. *Secondly*, the case of Ireland demonstrates that the stagnation in employment may partly be explained by the fact that the reduction in the labor force in sorting as a result to automation is almost balanced out by the increase in delivery post – as the following quote from the union representative reflects: “The increased use of parcels automation technology has led to a reduced number of staff involved in the processing of parcels. This has been offset somewhat by increased volume which in turn has increased the number of delivery posts”. *Thirdly*, for Germany and Belgium, where digitalization in the postal sector has already advanced further, but no job loss is reported. In these cases, the stagnation of jobs can be partly attributed to the combination of expansion in e-commerce and collective agreements, which provide for transfers in other areas and exclude dismissals.

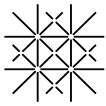


Key union strategies regarding job losses

As seen above, labor union representatives essentially share the view that digitalization is inevitable and that the main challenge in this digital transformation lies in job losses. It is therefore not surprising that the broader picture that emerges from the statements of the union representatives is a common shared aim to protect as many jobs as possible. Although this objective could not be translated into specific union strategies in each of the countries, it is reflected in the overall picture, which is mainly marked by strategies for preventing further job cuts or developing appropriate social plans. Four central strategies can be identified on the basis of the questionnaires: Preventing collective redundancies, voluntary early retirement and compensation payment, internal job transition, as well as programs and measures for upskilling or re-skilling.

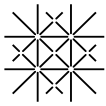
Apart from Germany and Belgium, **protection provisions regarding redundancies** are explicitly mentioned only in Brazil and the USA as a labor union strategy to address dismissals caused by companies' digitalization policies. According to the statements of the union representatives, both of the latter countries have already experienced significant job losses in the last few years and consider protection provisions for dismissals to be important for counteracting job cuts.

Another strategy, which is partly linked to the first one, consists of **voluntary early retirement and compensation payments** for workers. Again, there are only few cases where labor union representatives refer to these two practices to combat job losses. They each occur in combination with the other three union strategies. While early retirement is reported to be implemented in practice in Bulgaria and in the USA, a union representative from Morocco reports that they are in negotiations with the employers' organization on this issue: "We have suggested including a provision on voluntary redundancy in response to the likely social plan because we realize that historic postal operators around the world are seeing major reductions in postal activity". This quote underlines what the assessments of union representatives in general tend to reflect. It is dominated by the view that the almost unstoppable job losses resulting from digitalization should at least be mitigated by appropriate policies. In addition to the issue of job losses, the union representatives' assessments of retirements place them in the context of digital transformation more generally: union representatives from India and Malaysia discuss retirements in response to the fact that older workers are struggling to cope with new digital technologies. While for India it is stated that the resistance of older workers to new digital technologies has been almost silenced by their retirement, the union representative from Malaysia is considering early retirement as a solution to the difficulties faced by older workers: "Digitalization is making older workers redundant and the workers themselves could not adapt to the new technologies and may be given earlier retirement offers".



Furthermore, **internal job transitions** are also being discussed by various union representatives with regard to job cuts. A tendency can be identified in this respect, with some union representatives complaining that there is a lack of job transitions within the postal sector, either because new jobs created by deployment of digital technologies are being occupied by recruitment of additional workers or because jobs in the core workforce are completely rationalized by automation. For example, a union representative in France concludes: “It has certainly created new jobs that require technical skills (developers, programmers, coders etc.). There has been no redeployment of our mail carriers to these new jobs, or only very few”. In contrast, union representatives in Chile, Germany, Morocco and the USA state that the employment changes are counterbalanced by internal job transitions – although only in Germany have no job losses been recorded and for Chile it is explicitly mentioned that only a few jobs have been lost as a result of this strategy: “Not many jobs have been lost because the company has assured that workers take other tasks, creating new positions (‘router’ and distribution assistant), and in this way converting one position into another”. Finally, the following statement by a Moroccan union representative highlights the close link with the fourth strategy: “The most important point to make is that digitalization is a general threat to levels of employment. In order to mitigate its impact as much as possible we support training so that workers can be re-assigned and jobs maintained”.

As the above quotation reflects, **upskilling or re-skilling programs and measures** is the last labor union strategy to be mentioned concerning digital transformation, which at the same time also appears to be the most dominant topic and strategy of labor unions overall. This is not only considered a way to encourage internal job transitions, but also, more broadly, to enable workers to better cope with their daily workload in dealing with new technologies – as for example an Malaysian union representative points out: “the upskilling and reskilling is very important and required to make the implementation of the digitalization such as training for the automation systems where the workers need the information, knowledge and skills the handling the machine or any automation tools or systems”. Thus, the majority of labor union representatives also indicate that formal or informal training opportunities exist in the country concerned. In addition, training opportunities were being negotiated in Argentina, Bulgaria, Tunisia and Belgium at the time of the interview, but not yet implemented. Although the countries in which there are no programs represent the minority, there are still seven countries without appropriate training. In particular, these are: Bangladesh, Germany, Japan, Kenya, Mauretania, the Netherlands, Palestine. While training courses related to digital technologies do not seem to be essential for union representatives from some of these countries, those from Bangladesh, Germany and Mauretania appreciate the relevance of such training. The German case can be highlighted here, where internal job transitions and the exclusion of dismissals are enshrined in collective agreements and therefore informal training measures seem to play a role here, but not explicit programs for upskilling or re-skilling.



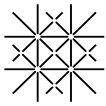
Even if upskilling or re-skilling programs and measures exist in various countries, two main problems can be identified (see also UPU 2019a, p. 138). *Firstly*, some of these are not programs in a narrow sense, but rather measures that are intended to ensure the company's operations and, according to some union representatives, do not correspond to the workers' need for further training opportunities. This is highlighted in the following quote from a French union representative: "There are often simplified e-learning courses that are not sufficient for redeployment of workers (example, after working 30 years as a mail carrier a person would not have the same skills with new technology and the company will not make any serious training effort".

Secondly, there are restrictions on access to these programs for workers, since some of them are only available to workers in positions with promotion opportunities or to management, as is explicitly stated by union representatives in Austria and Brazil. The following quotation from a respondent from Brazil illustrates this gap in terms of access: "For managerial positions, yes, several training courses are offered and are mandatory. (...) In terms of operational staff, courses are limited to basic knowledge for professional activity at a secondary level. It is not uncommon for operational workers who want to gain knowledge to find resistance".

Precarious employment and competitive pressure

In addition to the loss of jobs, some union representatives also note that digitalization is accompanied by precarious employment conditions. As the following quote from the UK union representative points out, the deterioration of working conditions is closely linked to the high competitive pressure in the postal sector: "(...) the expansion of low cost, insecure employment in parcel delivery is threatening a race to the bottom on pay and conditions across the whole postal sector." A closer look at the assessment of the labor union representatives reveals three company strategies associated with the digitalization of the postal sector that lead to insecure working conditions: Temporary work, subcontracting and bogus self-employment.

Temporary work is mentioned by union representatives from Argentina and the Netherlands as an explicit problem of digitalization. They state that new tasks that have been established in the process of digitalization are carried out by temporary workers. This is also connected to a further company strategy: **subcontracting**. While a union representative in Brazil generally records that there "is a clear tendency to automate or outsource as many activities as possible", subcontracting is used in the Netherlands for specific sorting processes and in the US for delivery services. Finally, **bogus self-employment** is perceived in the UK as a particularly relevant problem related to digitalization – as highlighted in the following quote: "The other major employment trend resulting from the rise of e-commerce has been the growth of self-employment in the unregulated parcel sector amongst competitors to Royal Mail such as Hermes, Yodel and Amazon".



These new forms of work pose elementary challenges for the labor unions. On the one hand, the statements of the union representatives reflect that the difficulties lie in organizing workers outside the core workforce. For example, the UK union representative points out that they represent only a few bogus self-employed workers in the union. On the other hand, the protection of workers towards these forms of work goes beyond the question of union membership. The case of Brazil emphasizes that especially for private companies, where such forms of work are widespread, collective agreements cannot be enforced, despite the fact that these workers are labor union members: “Some of our affiliates also represent private logistics and postal companies. Still, there are no collective labor agreements with these companies.”

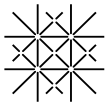
In summary, the main concern of union representatives is job loss, whether or not it has already taken place in the country concerned. Accordingly, strategies to combat (further) job losses dominate, namely preventing collective redundancies, voluntary early retirement and compensation payment, internal job transition, as well as programs and measures for upskilling or re-skilling. Furthermore, the rise of precarious employment conditions such as temporary work, subcontracting and bogus self-employment is also identified as a central problem in the context of digitalization.

6. Impact on Working Conditions

As outlined above, a central pillar of the current wave of digitalization consists in algorithmic work control. This is also reflected in the responses analyzed here, as algorithmic work control in a broad sense is mentioned most prominently by the union representatives in regard to the impact of digitalization on working conditions. In postal work, examples for this technology bundle are navigation devices or assistance systems for sorting. The interviewed union representatives observe that this facilitates the labor process in a variety of ways, but also involves risks and problems for workers. The most important factors are work facilitation, an increase in transparency and the risks of surveillance and work intensification.

Work facilitation

A dominant position for union representatives is that digital technologies have positive effects for workers by supporting their tasks. An interviewee from Bulgaria reports a “reduction of manual handling, which removes the risk of mistakes and means a greater volume of items can be processed.” Similar remarks are made by a Belgian union representative that “all the tasks done in the past are now simpler and quicker”. Thus, algorithmic work control can make the labor process easier and relieve workers, especially those with lower qualifications. This, however, also carries



the risk of deskilling, as digital support systems potentially allow work to be shifted to untrained workers. Thus, for example, the interviewee from Belgium reports that temporary workers can be included more easily, because algorithmic work control partly substitutes for training. A representative from Germany also voices the criticism that algorithmic work control potentially leads to a decrease in worker autonomy.

Transparency

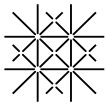
Interviewees from all continents note that digitalization leads to an increase in workplace transparency. For example, a representative from Kenya remarks that responsiveness and access to information are increased, which makes decision making less tedious. In Brazil, digital monitoring is used for identifying any probable errors and signaling them to the respective manager. Interviewees from Chile, Tunisia and the UK say that this transparency can be utilized to ensure that working time is accounted for correctly and that all working time is actually paid. However, digital monitoring may also be deployed to couple payment directly to workers' performance. Thus, a representative from Belgium reports that the daily scan rate for parcels is used as a basis for non-recurrent bonuses.

Surveillance

Most interviewees name the risk of digital surveillance as a downside to this increase in transparency. "Workers usually perceive the monitoring negatively", writes a representative from the Czech Republic. An interviewee from the UK notes that a GPS device continuously logs the position of delivery workers and makes a record if the device is stationary for more than one minute. The representative criticizes this as "unnecessary and too intrusive". In the US, a representative reports, letter carriers face "constant harassment and threats of discipline" on the basis of digital tracking. Similarly, the interviewee from the UK assumes that "the company's aim is to use new monitoring and surveillance technology as a vehicle to introduce draconian working arrangements and as measurements to be used against our members by applying constant pressure through continuous improvement techniques."

Work intensification

Representatives from all regions agree that algorithmic work control leads to an intensification of work. Thus, a representative from India explains that "every official in the department is monitored after digitalization", which means that "one has to work hard without wasting time". Therefore, digitalization in many cases is perceived as "a new source of stress that takes its toll on the human body", as a Tunisian union representative writes. According to the interviewee, this is because



“the modern worker is at the man/machine interface and faces a dilemma: he has to accomplish his tasks quickly but always feels under pressure because he is slow, so he feels he is inefficient, and he is subject to pressure from management.” Similarly, a representative from Brazil states that in digital postal work “there is no integration of moments for reflection, leisure or occupational health in the workday”. This is due to an “alert system” that is active for almost all activities, which leads to a “greater concern about possible punishments”.

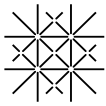
Regulation

Due to the dramatic impacts of digitalization on working conditions, the interviewees share the view that regulation is necessary. Most unions have entered into negotiations, especially over the extent of digital monitoring. Generally, unions use a combination of national legal frameworks and collective bargaining agreements to regulate the deployment of digital technologies. Representatives from Europe, like Ireland and Germany, utilize the European General Data Protection Regulation (GDPR) against surveillance (see also De Stefano 2018). Importantly, this law prescribes that the purpose of all data collections has to be stated explicitly and all other use is prohibited. This is taken by unions to prevent misuse of data in the sense of radical surveillance. Several European unions also preclude that data be used for individual performance evaluation and subsequent disciplining of workers in their collective bargaining agreements. Similarly, letter carriers in the US are protected by a grievance decision that states that data from handheld devices must not be used to discipline a carrier. In Belgium, there are unofficial agreements under which the company “pledges” not to use the data against an agent. If a manager breaks the agreement, the issue is settled via top management. Several representatives (most explicitly Mauretania and Argentina), point out that their collective bargaining agreements need to be updated to explicitly address digitalization issues.

In summary, it can be noted that the interviewees make an ambivalent assessment of the effect of digital technologies on working conditions. While many see the potential for work facilitation and transparency, this is generally outweighed by the potential for surveillance and work intensification. Therefore, all interviewees see a need for regulation, which in many cases is just beginning to be enacted.

7. Impact on Health and Safety

The health and safety of workers is a major concern for labor unions. All regional responses to the survey contain observations on difficult working conditions that cause stress, one of the main



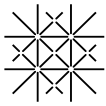
health factors in digitalization at the workplace. In fact, several respondents describe adverse effects on workers' health through high levels of stress. Regarding worker safety, respondents notice the potential of digital systems to reduce the risk of accidents. Union strategies on the topic vary from concrete programs (e.g. psychological stress relief or prevention) to bargaining for safety measures.

Health

The union representatives share the view that digitalization has a negative impact on workers' health, which rests mainly on two explanatory factors: stress and the fear of job loss. For example, a Brazilian union representative states that "workers' health has been directly affected by the concern about results at the present time and uncertainties about the future". Others name the enormous increase of stress as a health effect.

The source of stress is being attributed to four main causes: *Firstly*, union representatives from Belgium, Brazil and Kenya point to the performance pressure induced by competition among colleagues as well as performance measurement through tracking technologies or piece rate monitoring. While performance pressure is "generating greater concerns for possible punishments", competition at the workplace leads to a "less social" working environment and "more workplace pressure". *Secondly*, respondents from Bulgaria, Morocco, Tunisia and the UK call attention to stress experienced as a result of the general increased tempo of work. *Thirdly*, Tunisian and Indian union representatives also propose that stress can be provoked by interacting with digital interfaces that depend on digital literacy and produce a different form of communication that requires more concentration than face-to-face contact. Lastly, the highest level of stress, named by respondents of Brazil, Netherlands, UK and Kenya, results out of the fear of being sanctioned, or, in a related anxiety, the fear of job loss or uncertain employment. More concretely, anxiety is described as the source as well as the effect of stress, meaning workers enter a vicious cycle of pressure due to this uncertainty.

Another health factor is physical strain through work intensification, named in combination with stress or physically straining work through higher loads of heavy items, e.g. through the increase in parcel delivery. Additionally, eye vision problems are mentioned as one effect already addressed by a Belgian union that negotiated for vision assistance coverage. A union representative from Morocco also notes vision problems. Furthermore, the topic of health was linked by several union representatives to considerations on the ageing workforce in postal and logistics labor. Respondents consistently argued that work can be facilitated for old workers by making allowances for fewer physical tasks as well as rendering work more humane through mechanical assistance, e.g. for couriers.



Safety

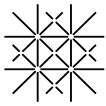
Regarding safety, respondents take up different positions as to how digital technologies impact the level of risk. On the one hand, they mention practical aspects of security technologies that, for example, lead to reducing road accidents through digital driving assistance. Hence, new technology such as telematics “is used to prevent traffic accidents and detect abnormal situations such as long-time stop during delivery”, as a union representative from Japan notes. On the other hand, respondents consider work acceleration, worker exhaustion and the distraction of interacting with digital surfaces as a new form of risk in the workplace.

The majority of union representatives stated that no investigations have been made into the health effects of digitalization. While the representative from India emphasized that positive effects have not been observed, the responses from Bulgaria, Chile, Czech Republic, Germany and Malaysia make it clear that there has not yet been any directly observed or studied effect by digital technologies on the physical and psychological wellbeing of workers.

Regulation

The majority of union representatives reports medium to high levels of health and security regulations, so that their members are protected under CBAs, national legislations or health schemes, and additionally form an active part of health and security committees. The forms of health and safety regulations vary. *The first model of health and security committees*, whose “task is to deal with all matters pertaining to workers’ health and working conditions” as formulated by the French representative, are formed on the basis of social partnership relations between employers and union representatives, or sometimes institutionalized within national legislation. Respondents from Austria, Belgium, Bulgaria, France, Morocco and Japan describe taking active part in such committees of unions and social partners. These committees are widely appreciated because they are highly active and work towards the codetermination of health and safety measures. Still, the committees are dependent on developments in national legislation, as the case of France shows, since the organizations’ powers “were recently reduced under new legislation”, meaning less time and financial resources for their work. *The second model of civil servants’ insurance* means that the governments of some countries, as reported by the representatives from India and Malaysia, guarantee workers coverage under government health schemes in post and logistics services. *In a third model*, the union has set *standards for employer-provided* health coverage through the CBAs, as representatives from Argentina, Brazil and Chile make clear.

These existing regulations, however, do not take into account new forms of adverse health effects under digitalization, since “there is no agreement between the union and the administration of the



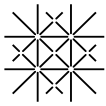
digitalization of the company”, as a Tunisian union representative states. Another respondent from the US notes that there have been attempts to bargain for the inclusion of health effects under digitalization in the CBA. So far, this has not been successful, and bargaining is ongoing.

Unions do not yet make broad assessments the health effects of digitalization and are for the most part content with the level of activity in health and safety committees as well as existing regulations. Only a few unions have tried bargaining for the inclusion of new health risks into existing CBAs. In the case of Tunisia, the union reflects on “how the use of digital tools is connected to protecting statutory rest periods, which are in place to protect [the] health and safety of the workers”. A Belgian union has negotiated financial support for eye vision problems due to extensive work with screens.

To conclude, labor union representatives name both positive and negative ways in which digitalization has affected workers’ health and safety. New technology allows for better safety management practices and accident reduction. Nevertheless, the majority of respondents also describe the physical and especially psychological health effects of digitalization. Notwithstanding, when directly asked about the impact on health, most participants were uncertain or ignorant and mentioned the lack of data on this topic. The most reported health risk induced by digitalization is stress coupled with anxiety. Different sources of stress include the intensification and acceleration of work, performance pressure and fear of sanctions through monitoring as well as anxiety connected to the uncertainty of future employment. While not all unions have health and safety standards guaranteed by their CBAs, national legislation or codetermination in health and safety committees are a common practice. Union strategies vary from providing psychological stress relief or prevention programs to bargaining for very concrete measures such as financial support for eye vision problems. In general, very few union strategies in the field of health and security were mentioned.

8. The digitalization of postal services from a labor-union perspective: A global trend, similar challenges, different approaches

As the results of the survey among union representatives from all over the world show, the digitalization of postal services is a globally developing trend that is already advanced in all the regions studied. At the same time, the overall view of their assessments regarding employment, working conditions, as well as health and safety issues related to the deployment of digital technologies provides a relatively homogenous picture. Even if the digital transformation in postal services has progressed at different speeds in the countries and underlying conditions of the postal sector differ

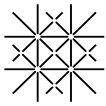


significantly, union representatives perceive similar challenges vis-à-vis digitalization. The union strategies for tackling these challenges, however, vary from country to country.

In this section, these differences and similarities with respect to the underlying conditions, challenges and labor unions' approaches will be focused and further differentiated. With regard to these aspects, four patterns can be identified:

The **first pattern** of a union's assessment and strategies is related to the fear of state-owned companies losing their monopoly as a result of increased competitive pressure from private companies or that the state-owned companies will be unable to maintain competitiveness in a liberalized market (cf. UNI, 2009). This pattern is the most dominant among all cases surveyed and can be identified both for unions organizing workers in state organizations or companies as well as in posts which have been privatized but where the state is still the majority shareholder. As the Moroccan case illustrates, for unions this is relevant in the sense that they see the defense of the state company's monopoly as an important factor in ensuring that it continues to be successful and job losses are prevented. This also partly explains the strong strategic alliance of unions with their respective companies. In addition, the case of Morocco shows what is also dominant in other countries, namely how union strategies focus on the level of employment. A similar correspondence between assessment and strategic orientation can be found in other unions whose affiliates work in state or state-owned companies, specifically in Bangladesh, Belgium, France and India. All of them emphasize that digitalization is central to the competitiveness of the state or state-owned company, which in turn is tied to job security. Accordingly, their strategies include supporting workers in the use of digital technologies, training measures and, in Belgium, collective agreements to prevent summary dismissals. In concrete terms, a South Korean union representative also points out that the government is considering privatizing the postal company because of developments related to digitalization. The union is therefore concerned about job losses. What is already apparent in these cases is also reflected in the strategic orientations of other unions: strong alliances between unions and state or state-owned companies that are also maintained with regard to digitalization. These similar alliances, which vary in terms of their specific characteristics, occur in Austria, Argentina, Bulgaria, Chile, Czech Republic, Kenya, Mauretania, Switzerland, Taiwan, Tunisia and USA. Here, co-determination, mutual cooperation, demanding, adapting and updating collective agreements in accordance with the challenges of digital transformation and in particular with joint collaboration in implementing training programs are among the dominant strategies.

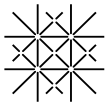
In contrast to the first, the **second pattern** includes cases where union representatives explicitly indicate that although they mainly represent workers in state-owned postal companies, they additionally have some affiliates working in private logistics and postal companies. Thereby, union



organizing opportunities and strategies differ between those for workers in state-owned companies on the one hand and those in private companies on the other: In Brazil, union strategies regarding digitalization are mainly aimed at preventing job losses in the state-owned company – especially since there has been immense job losses in which 20 percent of all workers at the state company have been reduced in the last 5 years. Even though there are different successful strategies such as preventing redundancies and promoting training opportunities, the union representative states that the text of the collective agreement is vague and has not yet been applied. On the other hand, one of the major challenges lies in the fact that there are no collective agreements with private companies at all. This pattern is also shared by the union from Ireland, which besides some affiliates working in private companies has a union density of 95 percent in the state-owned postal company. While the union representative does not explicitly address the issue of organizing workers in private companies, a picture similar to the Brazilian case seems to emerge with regard to collective agreements: The Irish union representative reports that a collective agreement on the extent to which digitally monitoring workers' performance has been negotiated with the state-owned company.

The **third pattern** differs from the previous ones in two respects: On the one hand, the case of UK reflects the situation in a country where the postal company is operating in a fully liberalized market. Here again, the union representative raises the problem of strong competitive pressure in the postal sector, culminating in a race to the bottom in terms of working conditions. On the other hand, it is precisely here that reference is made more strongly than in previous cases to working conditions in general and monitoring in particular as a major challenge of this competition. The dominant strategy here lies in established agreements that prohibit the use of this technology to track individuals or for individual performance management. A similar situation exists in Germany and the Netherlands. The German union obtained collective agreements with certain companies in the postal and logistics sector which on the one hand prohibit the use of data for performance monitoring and on the other hand provide for transfers in other areas and exclude dismissals. However, sub-contractors are digitally monitored in parcel delivery. In contrast, the union representative from the Netherlands reports no specific measures to tackle digital monitoring or job losses due to digitalization, even though he mentions similar problems. In addition to the stress caused by digital monitoring, the Dutch union representative also points out that outsourcing, sub-contracting and temporary work are among the most pressing problems related to digitalization within the otherwise privatized postal company.

Finally, Japan is another country where the postal company was privatized a few years ago and digital transformation is already quite advanced. Japan's case is characterized by the fact that there has been no recorded job loss as a result of digitalization – which, as in other countries, can



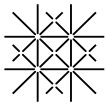
probably be attributed to increasing e-commerce. This case stands out because unlike many other countries, the union representative does not generally mention any specific problems tied to digitalization. The representative notes that work performance data is digitally collected, but does not problematize the issue, and exclusively names positive effects in regard to health and safety. Correspondingly, no specific labor union strategies concerning digital policies and no upskilling or re-skilling programs and measures are indicated. This is also the case for Palestine, but here digitalization plays only a marginal role for the postal service.

As the above cases show, there are observable similarities within the patterns in the sense that generally comparable problems are recognized: Increased competition in the postal sector, job losses and deteriorating working conditions are among to the main problems. However, the patterns vary depending on the specific situation in the national postal sector, on the one hand, in terms of the perceived priority of these problems. On the other hand, this is also reflected by the focal points of the unions' strategies.

9. Conclusion: The double-edged role of digitalization for labor unions

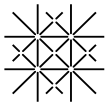
On the basis of these results, it can be concluded that digitalization is a double-edged sword for labor unions in the postal and logistics sector: *On the one hand*, the union representatives are mainly concerned about job cuts due to companies' digitalization policies, but they also recognize deteriorating working conditions in this context. With regard to the latter, the most pressing problems are seen to be not only the deployment of temporary work, subcontracting and bogus self-employment by companies in dealing with strong competition in the digital postal and logistics sector, but also digital surveillance and work intensification. According to the union representatives, both the fear of job loss and a high level of stress have a negative impact on the health of workers.

On the other hand, in addition to the positive effects of digitalization, such as increased transparency and work facilitation, labor unions also have the perception that there is pressure for digitalization in their members' companies so that they remain competitive and job losses can be prevented. This is especially the case for labor unions organizing workers in state companies that are in intense competition with large private companies and facing the risk of privatization. This is ultimately linked to the dominant attitude of union representatives, who generally consider digital transformation in the postal and logistics sector as an inevitable process. They also agree, however, that under no circumstances should it come at the expense of workers.



Against this background it is hardly surprising that labor union strategies aim in particular to combat (further) job losses. In this respect, the following strategies have been identified: Preventing collective redundancies, voluntary early retirement and compensation payment, internal job transition, as well as upskilling or re-skilling programs and measures. However, given the predominant concern about job loss, these strategies are pursued in only a few countries – with the exception of upskilling or re-skilling programs and measures, which are deployed in the majority of countries. The challenge here lies in the fact that these trainings are partly simplified courses that only benefit the operational process of the companies and are limited to workers in positions with promotion opportunities or to management.

Yet, the main challenge for unions lies in developing strategies to counter the deterioration of working conditions. On the one hand, it is difficult to organize workers beyond the core workforce and establish regulatory measures for large-scale private competitors in postal and especially in the logistics sector. On the other hand, it is evident that the majority of union representatives have little information about the impact of digitalization on the labor process itself (especially in comparison to labor market effects, which are more easily quantifiable). Therefore, further research is needed to identify specific local problems in the digitalized labor process and ‘best practices’ of union strategies. Regarding the latter, it seems especially important for unions to gain an understanding how to expand and activate their membership in digitalized workplaces. In this, digitalized working environments and precarious employment pose new challenges. Current research shows, however, that revitalized unions can also emerge from this challenging field (Heiland, 2020; Vandale, 2018; Woodcock & Graham, 2020). This in turn is the precondition for workers to be able to co-determine the use of digital technologies through collective bargaining. Only such a participatory approach can ensure that digitalization follows human needs and not the other way around.



Glossary

Algorithm: a set of rules for computers to execute under predetermined conditions. Some algorithms are “self-learning”, i.e. adapt themselves based on new input.

Collective agreement (CBA): contract negotiated through collective bargaining for employees by one or more trade unions with the management of a company or an employers' association.

E-commerce: electronically buying or selling of products over the Internet, e.g. Amazon.

Logistics: transportation and storing of things between the point of origin and the point of consumption.

Platform company: Company that connects supply and demand sides of economic transactions via websites or internet applications.

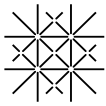
Postal services: services involving the clearance, sorting, transport and delivery of postal items.

Precariousness: summary term for insecure employment conditions, such as temporary work, subcontracting, absence of social security etc.

Technology bundles: groups of similar technologies.

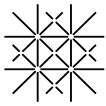
Upskilling / reskilling: training program for employees to allow for job transitions.

Work control: coordination, evaluation and sanctioning of working activities by technical or managerial means.

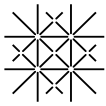


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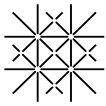
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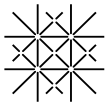
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