



Collective Bargaining for Platform Workers: a Hope for new Developments?

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The aim of this paper is to discuss possible response of collective bargaining to digital platforms' development. There is still a strong need of collective representation, but traditional institutions of collective labour law should be adapted to the needs of the changing world of work.

The paper starts with a short characteristic of online labour platforms and the role of algorithmic management. Organising workers is a precondition to collective bargaining, however particular features of platform work pose challenges to organising platform workers. Algorithmic management based on data collected from workers influences pay conditions and work organisation. If platforms were obliged to share it, the data could be used to the workers benefit. This can be also achieved through collective bargaining.

In the following parts the efforts of traditional trade unions to organise and support platform workers as well as initiatives outside the traditional scheme of trade union activity. Recently trade unions around Europe are increasing efforts to organise and support them. As a next step trade unions could design programs that analyse the data and present them to workers in easy to understand form through API (application programming interface) e.g. to select clients, organise working schedules, chose the best time or place of services etc.

Platform workers have proved that they can organise and successfully protest again unfair employment conditions. Sometimes legislators decide to intervene (French Labour Code, Italian local law). However, national regulations will not successfully replace collective bargaining, given the dynamics of platform development and differences between them in terms of work organisation. Examples of successful collective bargaining for platform workers are followed by reflection on specific areas most relevant for platform workers that can be covered by collective agreements. These include pay rates, health and safety, equal treatment, data transparency, and portability of ratings.

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It is also shown how automated procedures can act in advantage of workers. Algorithms could also be applied in the very process of conducting collective bargaining similarly to automated bilateral and multilateral negotiations. The proper functioning of algorithm fully depends on how it is programmed and unsuitable programming can increase discrimination. Having access to the mechanisms standing behind the algorithm trade unions could detect unfair ones.

New technologies can be disruptive for traditional trade union and collective bargaining structures, but at the same time, they can be widely use to the workers' advantage to support them in their collective efforts towards shaping fair working conditions.

1. Labour platforms: new technologies and new management tools

Technological developments that lead to the 4th industrial revolution, has brought changes in the employment paradigm. Non-standard employment is welcome by many employers and young workers wishing to reconcile private and professional life alike¹. Some scholars perceive it as a chance to modernize labour law in a way to guarantee all workers, regardless of their basis of employment remuneration, fair dismissal and healthy and safe employment conditions². Labour platforms, one of the most recognisable phenomenon of digital economy are defined as digital networks that coordinate labour service transactions in an algorithmic way³. They are used in various branches of economy such as: retail and transportation, through health and education, to personal relationships in social media⁴. However, there is no uniform model of labour platform and the notion covers diverse forms of business organization. Also, their profiles of activity vary: from online professional services, clerical work, software development and technology work, interactive services, through online micro-tasks, transportation and delivery services and on-location services (e.g. housekeeping, beauty services, on-location photography services and similar)⁵. Platform organization has significant impact on collective rights of workers, including collective bargaining, so for the purpose of further analysis, it is useful to present classification of online platform proposed by Eurofound⁶.

¹ Andrzej Marian ŚWIĄTKOWSKI: *Elektroniczne technologie zatrudnienia ery postindustrialnej*. Kraków, Wydawnictwo Naukowe Akademii Ignatianum w Krakowie, 2019. 29.

² ŚWIĄTKOWSKI op. cit. 30

³ Annarosa PESOLE – Cesira URZI BRANCATI – Enrique FERNÁNDEZ MACÍAS – Federico BIAGI – Ignacio GONZÁLEZ VÁZQUEZ: *Platform Workers in Europe. Evidence from the COLLEEM Survey*. Luxembourg, Publications Office of the European Union, 2018. 7., 12–13.

⁴ OECD *Digital Economy Outlook 2015*. Paris, OECD Publishing, 16. See also *Measuring the Digital Economy: A New Perspective*. OECD Publishing, 2014. <http://dx.doi.org/10.1787/9789264221796-en>; Janine BERG – Marianne FURRER – Ellie HARMON – Uma RANI – Max SIX SILBERMAN: *Digital labour platforms and the future of work. Towards decent work in the online world*. International Labour Office, 2011. 6.; Valerio DE STEFANO: *Negotiating the algorithm”: Automation, artificial intelligence and labour protection*. Geneva, International Labour Office, 2018. 5.

⁵ PESOLE et al. op. cit. 35–36. See also Alex J. WOOD – Mark GRAHAM – Vili LEHDONVIRTA – Isis HJORTH: *Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy*. *Work, Employment and Society*, Vol. 33., Iss. 1. (2019) 58.

⁶ EUROFOUND: *Platform work: Maximising the potential while safeguarding standards?* Publications Office of the European Union, 2019. 6. [hereinafter: EUROFOUND (2019)]

1. On-location platform-determined routine work group covers low-skilled work delivered in person (e.g. Uber drivers, food-delivery services). Workers are usually not regarded as employees (often as self-employed), but the platform very actively intervenes in the way the work is performed.
2. On-location client-determined moderately skilled work, represented by household task service platforms, where clients can choose workers for tasks, which are performed in person (e.g. ListMinut, Oferia) role of the platform is closer to an intermediary.
3. On-location worker-initiated moderately skilled work platforms act rather as an intermediary and workers are free to choose their task, sometimes even to negotiate pay directly with the clients. Workers might perceive themselves rather as small entrepreneurs using platform as a tool facilitating access to clients than dependent employees.
4. Online low skilled and moderately skilled click-work (e.g. Crowdfunder, AMT) where tasks are performed online and assigned by the platform to workers.
5. Online contestant specialist work is high-skilled online work where the client selects the worker by means of a contest. These are professional often creative tasks and sometimes workers are required to provide a sample of their work.

An important difference between the traditional form of business organization and internet platforms, and at the same time one of their common features, is the widespread use of algorithmic management defined as work settings in which “human jobs are assigned, optimized, and evaluated through algorithms and tracked data”⁷. In labour platforms, many tasks that were traditionally performed by middle management such as matching workers and service recipients, assigning tasks, evaluating gig workers’ performance (through summary statistics of ratings and comments), providing information to transacting parties, and even implementing human resource management decisions, are carried out by applying algorithmic methods⁸. These algorithms are heterogeneous, dynamic socio-technical systems, enacted through the practices of those who utilize them⁹.

2. Challenges in organising platform workers

The development of labour platforms fuelled the discussion about the dusk of labour law and the diminishing role of collective representation. Less than 5 years ago it was difficult to imagine that

⁷ Min Kyung LEE – Daniel KUSBIT – Evan METSKY – Laura A. DABBISH: Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers. In: *Proceedings of CHI 2015, 18 – 23 April 2015*. Seoul, Republic of Korea, <https://dl.acm.org/doi/10.1145/2702123.2702548>

⁸ Mohammad H. JARRAHI – Will SUTHERLAND: *Algorithmic Management and Algorithmic Competencies: Understanding and Appropriating Algorithms in Gig work*. International Conference on Information, 2019. 2.

⁹ Mohammad H. JARRAHI – Will SUTHERLAND – Sarah Beth NELSON – Steve SAWYER: Platformic Management, Boundary Resources for Gig Work, and Worker Autonomy. *Journal of Computer Supported Cooperative Work (CSCW)*, 2019. 6.

platform workers will have access to trade unions or traditional forms of collective bargaining or co-determination¹⁰.

Organisation of platform workers is prerequisite of social dialogue and building industrial relations in the platform economy. This is a challenging goal for many reasons. Trade unions are by nature build upon common trust and common goals. In labour platforms, direct relations between workers are often scarce or absent. Some platform workers rely heavily on online communication channels such as online forums and social media, while others, like food delivery workers can meet their colleagues in waiting hubs or while picking up the food¹¹. This does not facilitate building community and undertaking activities to defend common interests. Lack of personal contact affects to the largest extent online low or moderately skilled click-work and also online contestant specialist work. Communication by means of electronic media does not allow to create atmosphere of trust and solidarity between people in comparative situation¹². It is therefore structurally hard to create solidarity that links 'scattered' workers with heterogeneous interests, not to mention that cooperation could be discouraged, and workers online activity monitored. Also, the turnover tends to be high and some platforms workers compete for the job¹³.

It is also reported that digital economy workers, unlike ones employed in traditional branches of economy, must attempt to organise colleagues using their own time and resources, relying on their smartphones and computers, which can easily be deactivated from their platform in retaliation.¹⁴

The attitude of platform work providers may also vary even within the same platform depending also to their approach towards classifying them as employees or entrepreneurs¹⁵. In case of worker-initiated moderately skilled work platforms, workers could rather perceive themselves as real independent contractors, while online contest workers might perceive each other as competitors rather than possible trade union colleagues. In these groups, trade union participation does not seem likely to increase even if obstacles stemming from the form of employment were overcome. These differences are not unique for platform workers, but they rather reflect tendencies in the fragmented labour markers¹⁶.

¹⁰ Chrostophe DEGRYSE: *Digitalisation of the economy and its impact on labour markets*. Brussels, ETUI 2016. 35.

¹¹ Ming YIN – Mary L. GRAY – Siddharth SURI – Jennifer W. VAUGHAN: The Communication Network Within the Crowd. In: *Proceedings of the 25th International World Wide Web Conference (WWW)* 11 April 2016. 9.

¹² ŚWIĄTKOWSKI op.cit. 119.

¹³ Antonio ALOISE: Negotiating the digital transformation of work: non-standard workers' voice, collective rights and mobilisation practices in the platform economy. *ETUI Working Paper MWP*, 2019/03. 14.

¹⁴ Jeremias PRASSL: *Humans as a Service: The Promise and Perils of Work in the Gig Economy*. Oxford, Oxford University Press, 2018. 113.

¹⁵ Alex J. WOOD – Vili LEHDONVIRTA – Mark GRAHAM: Workers of the Internet unite? Online freelancer organisation among remote gig economy workers in six Asian and African countries. *New technology Work and Employment*, Vol. 33., Iss. 2. (2018) 98., 24.; Gemma NEWLANDS – Christoph LUTZ – Christian FIESELER: Collective action and provider classification in the sharing economy. *New technology Work and Employment*, Vol. 33., Iss. 3. (2018) 263–265.

¹⁶ Kurt VANDAELE: *Will trade unions survive in the platform economy? Emerging patterns for platform workers' collective voice and representation in Europe*. Brussels, ETUI, 2018. 27.

Paradoxically one of the first examples of early attempts to organize was observed online crowdworking platforms (such as Amazon Mechanical Turk), where at the beginning workers organised themselves to achieve common goals by creating 'first aid' communities¹⁷. One of the most successful example is the Turkopticon started by Lilly Irani and Six Silberman in 2009¹⁸. It allows people working for Amazon Mechanical Turk to use similar tool to these applied in algorithmic management practice of the platforms; the ratings. Only this time the worker can install an overlay on the web browser, in order to follow the ratings given to service providers by previous contractors, and thus avoid performing work for those who have committed abuses¹⁹. There are multiple other examples of online self-organization of platform workers, including those carrying out microtasks. They range from online forum software chat channels instant messaging software and private social media groups²⁰. Their general purpose is increasing the information that is available to them, comparing entities for which they provide services, and as a result, gaining a better negotiating position²¹.

While information sharing is an important preliminary step towards collective dialogue, it is not indicative of formal organisation²². The key to organizing platform workers, as they are highly computer literate, proficient in digital communication and near-constantly online²³.

3. Trade union initiatives to organize platform workers

At first trade unions tended to focus primarily on standard employment, but this attitude is changing²⁴. Still, it is difficult to find trade union initiatives aiming at on-location worker-initiated work or online contest work, therefore many platform workers still do not have collective representation and most initiatives cover workers doing on-location platform- determined tasks (such as food couriers and

¹⁷ Various online tools such as blogs, websites etc. used by platform workers in order to share information on gig-providers, insurance, useful apps, provide instruction and, ultimately, increase bargaining power. (Antonio ALOISI: *Commoditised Workers. Case Study Research on Labour Law Issues Arising from a Set of 'On-Demand/Gig Economy' Platforms*. *Comparative Labor Law&Policy Journal*, Vol. 37., No. 3., 2016. 680.

¹⁸ <https://turkopticon.ucsd.edu>

¹⁹ Lilly IRANI – Max S. SILBERMAN: *Turkopticon: Interrupting Worker Invisibility in Amazon Mechanical Turk*. 2013. <http://crowdsourcing-class.org/readings/downloads/ethics/turkopticon.pdf> 616.; DEGRYSE op.cit. 37.

²⁰ Vili LEHDONVIRTA: *Algorithms that Divide and Unite: Delocalisation, Identity and Collective Action in 'Microwork'*. In: Jörg FLECKER (ed.): *Space, Place and Global Digital Work. Dynamics of Virtual Work*. London Palgrave Macmillan, 2016. 70.; YIN et al. op. cit. 1.

²¹ Joanna UNTERSCHÜTZ: *Digital work – real bargaining: how can the sustainability of social dialogue be ensured in the digital era?* In: Jeff KENNER – Izabela FLORCZAK – Marta OTTO (eds.): *Precarious Work. The Challenge for Labour Law in Europe*. Cheltenham, UK – Northampton, MA, USA, Edward Elgar Publishing, 2019.; see also BERG et al. op. cit. 220–239.

²² Mehtap AKGÜÇ – Miroslav BEBLAVÝ – Elina CIRULE – Zachary KILHOFFER: *Industrial Relations and Social Dialogue in the Age of Collaborative Economy (IRSDACE) Comparative Report*. Jobs & Skills Unit – CEP, December 2018. 26.

²³ Jeremias PRASSL: *Collective voice in the platform economy: challenges, opportunities, solutions*. Brussels, ETUI, 2018. 13. <https://www.etuc.org/en/publication/collective-voice-platform-economy-challenges-opportunities-solutions>

²⁴ *Negotiating our way up. Collective bargaining in a changing world of work*. Paris, OECD Publishing, 2018. 241., 243.

drivers) because this form of work facilitates organization of workers²⁵. These workers often share common interests and are able to exchange opinions when they meet between the assignments. Their negotiation position is also much stronger. They do not develop personal bonds with clients as those who perform on-location client-determined moderately skilled work. At the same time, they were able to successfully organise collective actions that had an impact also on the way platforms are perceived by the consumers²⁶.

In some cases, in order to organize platform workers, trade unions took the strategy to challenge workers' misclassification as self-employed. One of the well-known examples is the case supported by GMB, followed by similar cases in Italy and France²⁷.

Numerous examples confirm that traditional trade unions embrace atypical (including platform) workers or even adapt their structure to be able to serve this group of people²⁸. One of them is the German trade union IG Metall that inspired by Turkopticon created the FairCrowdWork platform, which has collaborators among many trade unions from Europe and beyond. This site goes further than Turkopticon by presenting not only ratings of the platforms, but also information on working conditions and remuneration offered by forums that use their services, as well as the exchange of views and experiences and use of legal assistance offered by the trade union. IG Metall is also open to self-employed members since January 1, 2016, with a focus on crowd- and platform-based workers²⁹. It is also one of the co-initiators of the Frankfurt Declaration on Platform-Based Work. The paper calls on the diverse stakeholders to "platform-based work" to work together to ensure basic labour rights and social protection as well as the right to organize.

Another example is Unione Italiana Lavoratori Turismo Commercio Servizi (UILTuCS) - an Italian trade union, which offers individual support to platform and app workers as well as seeks the means to organise and represent them in negotiations with industry representatives. Couriers and Logistics Branch of the Independent Workers of Great Britain is defending the rights of workers in the British courier and logistics industry, including self-employed workers for major courier companies and food delivery companies such as Deliveroo and UberEats.³⁰ Freelancers Union 118, signed a partnership with Lyft, offering the possibility for Lyft drivers to obtain benefits such as entering the pressure

²⁵ *On-location client-determined moderately skilled platform work: Employment and working conditions*. Eurofound, 2019. 33., 37., 58., 64. <https://www.eurofound.europa.eu/sites/default/files/wpef19058.pdf>

²⁶ VANDAELE op.cit. 15., 17.

²⁷ Jeff KENNER: *Uber drivers are 'workers': the expanding scope of the 'worker' concept in the UK's gig economy*. In: KENNER-FLORCZAK-OTTO (eds., 2019) op. cit. 195–215.; J. UNTERSCHÜTZ: *Digital labour platforms: dusk or dawn of labour law?* Manuscript. 11–13.; Hannah JOHNSTON – Christopher LAND-KAZLAUSKAS: *Organizing on-demand: Representation, voice, and collective bargaining in the gig economy*. Geneva, International Labour Office, 2019. 5.

²⁸ ALOISI (2016) op.cit. 18–19.; *Employment and working conditions of selected types of platform work*. Publications Office of the European Union, Luxembourg, 2018. 53–54.; AKGÜÇ et al. op. cit. 7–8.

²⁹ FES: *The German employment model, the trade unions and "Working 4.0"*. <http://library.fes.de/pdf-files/bueros/bratislava/14649.pdf>

³⁰ See e.g. *Brighton Deliveroo Strike leads to unionisation* <https://iwgbclb.wordpress.com/2017/02/07/brighton-deliveroo-strike-leads-to-unionisation/>; *UberEats & Deliveroo Update*. <https://iwgbclb.wordpress.com/2016/09/07/ubereats-deliveroo-update/>.

group's health plan³¹. Swedish Unionen has also been very active in funding research initiatives into labour questions related to the platform economy³². This union has suggested that social partners' organisation, authorisation and regulation of online talent platforms could be modelled on the basis of those found in the Swedish temporary agency work sector³³.

There are also smaller unions formed to represent precarious workers like the Independent Workers Union of Great Britain (IWGB) in the UK or the New York Taxi Workers Alliance (NYTWA)³⁴.

All these unions use online channels to reach out to platform workers and offer services designed especially for this group of members. This shows that, on the one hand, workers need representation of their collective interests, and on the other hand, among trade unions there is rising awareness concerning the needs of platform workers. Industrial relations in many countries develop in a way that allows to include platform workers often regardless of whether they are recognised as workers or employees.

In the future, worker-centred API (application programming interface) could create an entirely new form of unionization for the platform age, enabling workers to use data gathered by the platform. S.P. Choudary suggests even that „Just as industrial-age workers were represented by unions, worker-centred APIs would allow platform workers to be represented by algorithms”³⁵. Trade union applications would be an easy solution for platform workers to see, compare and adhere to the offer of trade unions just by downloading and activating an application. The same tool could be used to calculate and collect trade union fees. At the moment, this statement may seem far-reaching, but there is no doubt that trade unions should make even much wider use of digital technology in order to meet the needs of workers whose working conditions are strongly determined by algorithmic management.

4. Collective bargaining for platform workers

Despite earlier predictions, platform workers' representatives managed to conclude several collective agreements. In July 2018 the Danish trade union 3F PSHR and “Hilfr.dk”, a platform providing cleaning services, signed the “first-ever collective agreement for the platform economy”³⁶. The agreement not

³¹ ALOISI (2016) op. cit. 685.

³² Nordic Council of Ministers: Nordic labour markets and the sharing economy. *Report from a pilot project*, Issuu 7 February 2017. https://issuu.com/nordic_council_of_ministers/docs/tn2017508web_crossmark (accessed 14.02.2020); Karolien LENAERTS – Zachary KILHOFFER – Willem P. DE GROEN – Romain BOSC – Nicolas SALEZ – Werner EICHHORST – Margard ODY – Nikos ASKITAS – Nicolas MEYS: *Online Talent Platforms, Labour Market Intermediaries and the Changing World of Work. Study prepared for the World Employment Confederation – Europe and UNI Europa by CEPS and IZA*. 63. <https://www.ceps.eu/ceps-projects/labour-market-intermediaries-online-talent-platforms-and-the-changing-world-of-work/>

³³ LENAERTS et. al. op. cit. 63.

³⁴ JOHNSTON–LAND–KAZLAUSKAS op. cit. 10–11.

³⁵ Sangeet Paul CHOUDARY. *The architecture of digital labour platforms: Policy recommendations on platform design for worker well-being*. Geneva, International Labour Office, 2018. 34.

³⁶ *Historic agreement: first ever collective agreement for the platform economy signed in Denmark*. <https://blog.hilfr.dk/en/historic-agreement-first-ever-collective-agreement-platform-economy-signed-denmark/>

only reclassified platform workers as employees, but also introduced the minimum wage, sick pay and holiday allowance and pension contributions for those working regularly for the platform as well as a provision for data protection³⁷. Unionen, a Swedish trade union, incorporated workers of Instajobs and Gigstr platforms into already negotiated sectoral agreements.

“Hermes”, the British courier company and the GMB union concluded an agreement offering drivers guaranteed minimum wages and holiday pay in a deal to provide trade union recognition³⁸. In May 2019, the Italian food-delivery company Laconsegna and three trade unions signed a collective agreement that clarifies that riders are employees. They are covered by the national collective agreement for the logistics sector and benefit from all social protections³⁹.

Recently social partners in the food delivery sector in Italy (Assodelivery and UGL Trade Union Organization) signed the “National Collective Agreement for the discipline of the activity of delivery of goods on behalf of third parties carried out by self-employed workers, so called riders”⁴⁰. However the agreement is already criticised, especially for being signed with less representative trade union and confirming riders’ status as self-employed contrary to the Italian jurisprudence, as well as introducing piecework pay⁴¹.

New technologies applied by the owners to organize and manage the platform can be used also by social partners to carry out bilateral (e.g. platform worker in case of micro-task platforms) or multilateral (platform- worker-client in case of talent platform or tasks carried out on site) real-time automated negotiation. This allows the parties to set their priorities and limits in the negotiation process, which will be carried out in real-time without the need for the parties to confirm every step in the process.

The technical solution that enables automatic negotiation is the API (Application Programming Interface). API technology is widely used in contemporary business. They can be used to facilitate customer service or by an insurance company having an API for each brokerage firm connected or each insurance they use to keep insurance fees up to date⁴². They can also be used to extract useful information from two or more web applications⁴³.

³⁷ EUROFOUND (2019) op. cit. 15.; Collective Agreement between Hilfr ApS. CBR. No.: 37297267 and 3F Private Service, Hotel and Restaurant 2018 <https://www.3f.dk/~media/files/mainsite/forside/fagforening/privat%20service/overenskomster/hilfr%20collective%20agreement%202018.pdf> (accessed 14.02.2020).

³⁸ ALOISI (2019) op. cit. 20. The Authors further quotes examples from Germany and the Netherlands.

³⁹ EUROFOUND (2019) op. cit. 10.

⁴⁰ <https://irel.fmb.unimore.it/national-collective-agreement-for-the-discipline-of-the-activity-of-riders-and-letter-from-the-legislative-office-of-the-ministry-of-labour-to-assodelivery/>

⁴¹ Melissa HEIKKILÄ – Paola TAMMA: Delivery companies unveil labor deal with Italian far-right union. *Politico*, 9.16.2020. <https://www.politico.eu/article/delivery-companies-unveil-labor-deal-with-italian-far-right-union/> EUROPEAN ECONOMIC AND SOCIAL COMMITTEE: Press release on the national agreement on Italian Riders – by CGIL, CISL and UIL. <https://www.eesc.europa.eu/en/news-media/news/press-release-national-agreement-italian-riders-cgil-cisl-and-uil>

⁴² Stephen FISHMAN: *Experience APIs ownership and governance model*. <https://blogs.mulesoft.com/biz/api/experience-api-ownership/>

⁴³ Duane MERRILL: *Mashups: The new breed of Web app*. <https://www.ibm.com/developerworks/library/x-mashups/index.html>

API technology is particularly suitable for interactions between platforms and trade unions or their workers, as humans do not interact directly with the API and as a consequence do not have direct access to data on the server. In fact, they are already applied by at least some platforms.

In order to make this technology viable for the purpose, trade union interaction with the platform as well as conducting collective bargaining, some preconditions must be fulfilled. First of all, the platform and workers' representatives should agree on what categories of data are to be shared and perhaps also how it is used by trade unions or workers directly. The second step is developing an API by the platform that allows drawing the necessary data from their database. Finally, another software must be developed by the trade union which uses the data. Even though the procedure seems long and complicated there are multiple benefits of using this solution.

The API technology may facilitate automated negotiations, provided that the platforms were obliged to share the data they collect on various aspects of workers' activities (such as pace of work, geolocation, workers' preferences in terms of tasks, routes etc.). This can be achieved either by self-regulation (codes of conducts, non-binding agreements, declarations) or by regulators on national, EU or international level.

There is already an evidence of end employers negotiating over the use of artificial intelligence, big data and electronic performance monitoring ("people analytics") at the workplace, as well as their implications for occupational health and safety, privacy, evaluation of work performance and hiring and firing decisions use of technology not only in monitoring workers but also in directing their work⁴⁴.

5. Negotiating pay rates

Some existing collective agreements covering platform workers already contain minimum rates of pay. This is especially useful for on-platform determined routine work, and online click work, where pay rate depends on many factors and establishing minimum rate of pay does not reduce significantly workers unfavourable position in the market. Efficiency of pay negotiations could be raised by applying automated negotiation protocols.

A negotiation protocol constitutes the set of rules that define how negotiations will proceed, including the proposals that the agents are allowed to make⁴⁵. The process can be described as follows: at the beginning of this process, each agent has a portion of the space (or aspects of negotiation) in which it is willing to make agreements. One of the most difficult task is to attribute a rating to each

⁴⁴ OECD (2018) op. cit. 233.

⁴⁵ Fatima SHANTEEN – Sarit KRAUS – Michael WOOLDRIDGE: *Principles of automated negotiation*. Cambridge, Cambridge University Press, 2015. 6.

of these areas in order to make the agreement possible. For example, for a particular worker, the place where the task is to be carried out (or a direction of a ride – to or from the airport) may be given the same or even higher rating than the price, as worker may be willing to accept a task at the lower price if she does have to commute far in order to perform it. On the other hand, for the client, the time may be a crucial factor. During the negotiation process, the participants may determine the direction of the search. The search terminates when the required number of participants find mutually acceptable points in the agreement space or when the protocol dictates that the search should be terminated (for whatever reason) without making an agreement⁴⁶.

6. Health and safety

Occupational health and safety (OSH) hazards in platform work can be divided into three categories: physical risks for online and offline work as well as psychosocial risks⁴⁷.

Ergonomics of online work may cause physical problems: many workers consequently have musculoskeletal disorders, including ones in fingers, wrists as well as the neck and shoulder, which take RSIs (Repetitive Strain Injuries) caused by screen work.⁴⁸ Radiation from electromagnetic fields is also reported as a cause of health issues.⁴⁹ In the case of forms of employment that are not covered by social security, third party liability insurance covering accidents at work could also be negotiated.

The new forms of management, including continuous real-time evaluation of worker performance on smart production lines, can become important sources of stress, just as the monitoring, control, evaluation of workers' performance also causes stress.⁵⁰ 'Techno-stress' is described as 'any negative impact on attitudes, thoughts, behaviours, or body physiology that is caused either directly or indirectly by technology'.⁵¹ Workers may suffer from information overload.⁵² Technology-enabled surveillance can lead to enhanced speed and efficiency pressure on workers, as this Taylorist information control and discipline involve subjecting work tasks to detailed digital measurements and statistical analyses of individual worker performance⁵³.

⁴⁶ Nicholas R JENNINGS – Peyman FARATIN – Alessio R LOMUSCIO – Simon PARSONS – Carles SIERRA – Michael WOOLDRIDGE: *Automated Negotiation: Prospects, Methods and Challenges*. Group Decision and Negotiation 10, 2001. 199–215.

⁴⁷ OSHA: *The future of work- Crowdsourcing. a review on the future of work: online labour exchanges, or 'crowdsourcing': implications for occupational safety and health* <https://osha.europa.eu/en/tools-and-publications/publications/future-work-crowdsourcing/view> (accessed 14.02.2020).

⁴⁸ Jan POPMA: *The Janus face of the 'New Ways of Work', Rise, risks and regulation of nomadic work*. Brussels, ETUI, 2013. 18.

⁴⁹ POPMA op. cit. 17.

⁵⁰ DEGRYSE op. cit. 14., 45.

⁵¹ POPMA op. cit. 10.

⁵² DEGRYSE op. cit. 44.; POPMA op. cit. 11.

⁵³ WOOD et al. (2019) op. cit. 61–62.

Workers also report difficulties connected to the blurring frontiers between private and working life and virtualisation of human relations in the workplace as potential triggers of specific occupational diseases such as Techno addiction,⁵⁴ burn-out or FOMO (Fear of Missing Out), a form of social anxiety leading to an obsessional relationship with professional communication tools.⁵⁵ Difficulties in combining work and private life can manifest as 'techno invasion'- excessive presence and use of digital tools by workers.⁵⁶ There is also a threat to privacy violation and cyber-bullying.⁵⁷

Most of the above-mentioned issues are more suitable for traditional collective bargaining. However, there are areas where APIs could be also applied. For example, in order to balance working time and reduce OSH hazards connected to long working hours. Workers would be also able to see what is the relation between the time spent seeking assignment or waiting for one and the time assignment is carried out and as a result real rates of pay. This is especially the case for online and offline work 'virtual' workers may face the problem of prolonged working hours and non-daytime shifts which may lead to fatigue or sleep disorders⁵⁸.

7. Data transparency

Transparency issues in general as well as sharing the data collected from workers also constitute an excellent area for collective bargaining. One of the most important features of algorithmic management is constant performance evaluation of workers. Personalized management decisions are possible only on the basis of information on workers' behaviour. These are usually based on data retrieved from tracking devices on computers, cell phones used by workers while performing their tasks. It may be argued, that some information gathered by the platform is excessive. Moreover, platform workers do not always are aware of the information processed and may not have access to the database to correct or withdraw the data concerning themselves.

It could be relatively easy to increase the transparency of algorithmic management processes, as they rely upon an explicit set of rules. However, companies are reluctant to disclose them, therefore, creating very low transparency for workers and customers to gain an information advantage⁵⁹.

⁵⁴ POPMA op. cit. 12.

⁵⁵ DEGRYSE op. cit. 40., 44.

⁵⁶ POPMA op. cit. 13–14.

⁵⁷ Gérard VALENDUC – Patricia VENDRAMIN: *Work in the digital economy: sorting the old from the new*. Brussels, ETUI, 2016. 36.; Alec FELSTINER: *Working the Crowd: Employment and Labor Law in the Crowdsourcing Industry*. *Berkeley Journal of Employment and Labor Law*, Vol. 32., No. 1. (2011) 57.

⁵⁸ POPMA op. cit. 32.; DEGRYSE op. cit. 44.

⁵⁹ Mareike MÖHLMANN – Lior ZALMANSON: *Hands on the wheel: Navigating algorithmic management and Uber drivers' autonomy*. In: *Proceedings of the International Conference on Information Systems (ICIS 2017)*, December 10–13, Seoul, South Korea.15.

Another problem lies in the very nature of algorithms based on big data and statistics: they are often too complex to understand, and since they are adaptive in nature, they also frequently change⁶⁰.

Access to the data is partly facilitated by the EU Directive on Transparent and Predictable Working Conditions (COM (2017) 797 final). Amongst other issues, it deals with working time, including the provision of information to ensure predictability. Platform workers are covered by this Directive⁶¹. It is also interesting that the motive 13 includes reference to multiple employers: “[...] different natural or legal persons or other entities may in practice assume the functions and responsibilities of an employer [...]”. This could be helpful while establishing responsibilities of the platform and its clients towards workers. However, the text of the Directive does not offer simple solutions in the areas such as sharing the data with workers or the rules governing the algorithm.

8. Equal treatment of workers

Since platforms have the best access to large-scale information about their workers’ hourly rates and pay, as well as control over membership, shaping of profile categories, feedback scores, platforms themselves could best be suited to enact pre-emptive measures through their affordances and codes to de-facilitate and counteract discrimination.⁶² This area is also an important subject matter of collective bargaining.

Despite common preconception, even in case of algorithmically managed systems there is always a conscious (human) decision that feeds into the algorithm and the data model the algorithm will use to solve a particular problem⁶³. Consumer-sourced rating systems may introduce biased and discriminatory decisions about workers⁶⁴. Empirical findings from investigating ‘a global online platform’ demonstrate women’s average hourly requested rates are 37% lower than men’s⁶⁵.

As Miriam Kullman indicates: an algorithm may harm individuals in four ways: (1) it may intentionally discriminate, (2) an individual’s record errors may unfairly deprive someone of a job opportunity or equal pay, (3) a statistically biased data model may systemically disfavour a particular group because of the way it was created, and (4) a model may systematically operate to the detriment of members of

⁶⁰ Alex ROSENBLAT – Luke STARK: Algorithmic Labor and Information Asymmetries. A Case Study of Uber’s Drivers. *International Journal of Communication*, Vol. 10. (2016) 3762.

⁶¹ PRASSL (2018b) op. cit. 18

⁶² Adrienne RENAN BARZILAY – Anat BEN-DAVID: Platform Inequality: Gender in the Gig-Economy. *Seton Hall Law Review*, Vol. 47. (2017) 430.

⁶³ Miriam KULLMANN: Platform Work, Algorithmic Decision-Making, and EU Gender Equality Law. *International Journal of Comparative Labour Law and Industrial Relations*, Vol. 34., No. 1. (2018) 6.

⁶⁴ Alexandra MATEESCU – Aiha NGUYEN: *Algorithmic Management in the Workplace*. Data & Society Research Institute, 2019. <https://datasociety.net/output/explainer-algorithmic-management-in-the-workplace/>

⁶⁵ RENAN BARZILAY – BEN-DAVID op. cit. 398.

a particular group, even if the model itself is not biased⁶⁶. Simply removing a sensitive data from the database (eg. one on gender, age, etc.) is not the right solution. Instead, if the discriminatory practice is discovered, the algorithm design should be corrected⁶⁷. In the light of anti-discrimination laws it is irrelevant whether decisions that violate equal treatment principle are based solely or strongly influenced by the work of algorithm or made by humans without applying new technologies.⁶⁸

9. Portability of ratings

Another matter for negotiation, apart from transparency in ratings is allowing the 'portability' of workers' existing good ratings from one platform to another would reduce the dependency of workers upon a single platform.⁶⁹ More specific issues include deactivation by low rating, deactivation by cancellation and acceptance rate, time to accept the request and time to wait for the passenger, and surge pricing⁷⁰.

Performance evaluation is enabled by tracking data gathered from client reviews⁷¹. This way tasks that were normally duties of middle management is outsourced to clients, who are not always fully aware neither of the criteria of assessment nor of the possible consequences for workers. To achieve good ratings, drivers must modify their behaviour⁷². It can also lead workers to add more "emotional labour" especially for drivers, but also to other workers who interact directly with clients⁷³.

If the platforms were obliged to share the data on workers' ratings it could be possible to create a program gathering the information on ratings from different employment platforms and present it to the one the worker starts co-operation with. This operation is not necessarily an easy one, as it should be considered to what extent the ratings from one platform are comparable to the other. If the ratings were based only on the customers' opinions it could be easy to acknowledge that they should be honoured from one platform to another, especially if the activities are similar e.g. food delivery platforms; food delivery and transport. It must be borne in mind that in many cases other factors could

⁶⁶ KULLMAN op. cit. 7.; Pauline T. KIM: Data-Driven Discrimination at Work. *William and Mary Law Review*, Vol. 58. (2017) 857., 883–890. <https://scholarship.law.wm.edu/wmlr/vol58/iss3/4>

⁶⁷ RENAN BARZILAY – BEN-DAVID op. cit. 429.; KIM op. cit. 899.

⁶⁸ Frederik ZUIDERVEEN BORGESIU: *Discrimination, artificial intelligence, and algorithmic decision-making*. Strasbourg, Council of Europe, 2018. 22.; KULLMAN op.cit. 15.

⁶⁹ Valerio DE STEFANO: *The rise of the "just-in-time workforce": on-demand work, crowdwork and labour protection in the "gig-economy"*. International Labour Office, 2016. 22.

⁷⁰ Giovanni BIRGILLITO – Marialaura BIRGILLITO: Algorithms and ratings: tools to manage labour relations. Proposals to renegotiate labour conditions for platform drivers Transport Planner. *Tplan Consulting University of Castilla-La Mancha Labour and Law*, vol. 4., no. 2. (2018) 33.

⁷¹ MÖHLMANN–ZALMANSON op. cit. 5.

⁷² ROSENBLAT–STARK op. cit. 3772.

⁷³ Mareike GLÖSS – Moira MCGREGOR – Barry BROWN: Designing for Labour: Uber and the On-Demand Mobile Workforce. In: *CHI '16: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*. May 2016. 1639. <https://dl.acm.org/doi/10.1145/2858036.2858476>

play an important role such as the promptness of the service delivery, its quality etc. In this regard, J. Prassl suggests that adequate solutions could be shaped on the basis of EU legislation on company takeover and the General Data Protection Regulation (GDPR), adopted in April 2016, by regarding digital worker's ratings as personal data.⁷⁴

10. Concluding remarks

The main purpose of the freedom of association remains the same: workers join their efforts to defend their rights, bargain collectively and as the need arises to organise a collective action. Most publicity was gained by drivers and food delivery courier's protests (Uber, Delivero)⁷⁵, which to a certain extent reminded of the first strikes organised by early capitalist factory workers. The new technologies also present new possibilities to organise collective action. With access to workers' applications it would be very easy for a trade union to organise a protest simply by disconnecting workers temporarily (obviously with their prior consent).

Still some issues remain unsolved, such as the status of platform workers⁷⁶. Even though according to the ILO criteria employment status is not the precondition to benefit from the freedom of association, but in practice in many countries obstacles for atypical workers and self-employed persist. This is however an issue beyond the scope of this paper.

Observation of platform workers' activities in the collective sphere as well as actions undertaken by trade unions leads to the conclusion that this new form of work organization requires solutions that go beyond the use of new electronic media of communication.

Both workers and the unions still seem to operate within the old and well known scheme of collective bargaining developed in 19th century. In some cases, this policy is efficient, e.g. for on-location platform-determined routine work, where the relation between the platform and worker to the largest extent resembles traditional employment model, with specific differences stemming from the nature of the platform work and especially algorithmic management system. However, those workers whose activities are closer to homework, especially online moderately skilled click-work and on-location client-determined moderately skilled work are often left to their own devices as far as shaping employment conditions is concerned.

⁷⁴ PRASSL (2018A) op. cit. 112.

⁷⁵ Antonio ALOISI: Commoditised Workers. Case Study Research on Labour Law Issues Arising from a Set of "On-Demand/Gig Economy" Platforms. *Comparative Labor Law & Policy Journal*, vol. 37., no 3. (2016) 681. Seattle App Based Drivers Association, <http://www.abdaseattle.org> (accessed 18.06.2018.). Hilary OSBORNE – Sarah BUTLER: Collective action via social media brings hope to gig economy workers. *The Guardian*, August 19, sec. Business. <https://www.theguardian.com/money/2016/aug/19/collective-action-via-social-media-bringshope-to-gig-economy-workers>, Accessed 2 June 2019.

⁷⁶ Joanna UNTERSCHÜTZ: Digital Labour Platforms: Dusk or Dawn of Labour Law? In: Jerzy WRATNY – Agata LUDERA-RUSZEL (eds.): *News Forms of Employment. Current Problems and Future Challenges*. Wiesbaden, Springer, 323–327.

Platform work in all varieties poses challenges not only to labour law but also to social law and especially social security systems. New technologies that register so many workers' activities might be helpful as well, but for many social security schemes this would require deeper and more systemic changes.

Certainly, the influence of digital economy for labour law in general and industrial relations in particular seem to go beyond the mere use of new tools, especially in the recent times. It was especially visible, when the use of electronic communication for the purpose of work became a necessity for many workers during the outbreak of the COVID19 epidemics. Some of the ad hoc solutions created as a response to various restrictions in normal functioning of the companies will remain as permanent solutions.

Without disregarding traditional forms of workers' organization and conducting collective bargaining, which remain useful and valid for majority of workers, it can be stated that digitalisation and automation processes pose not only a challenge, but also an opportunity for workers and their representatives to reach for new solutions and take advantage of the new technology.