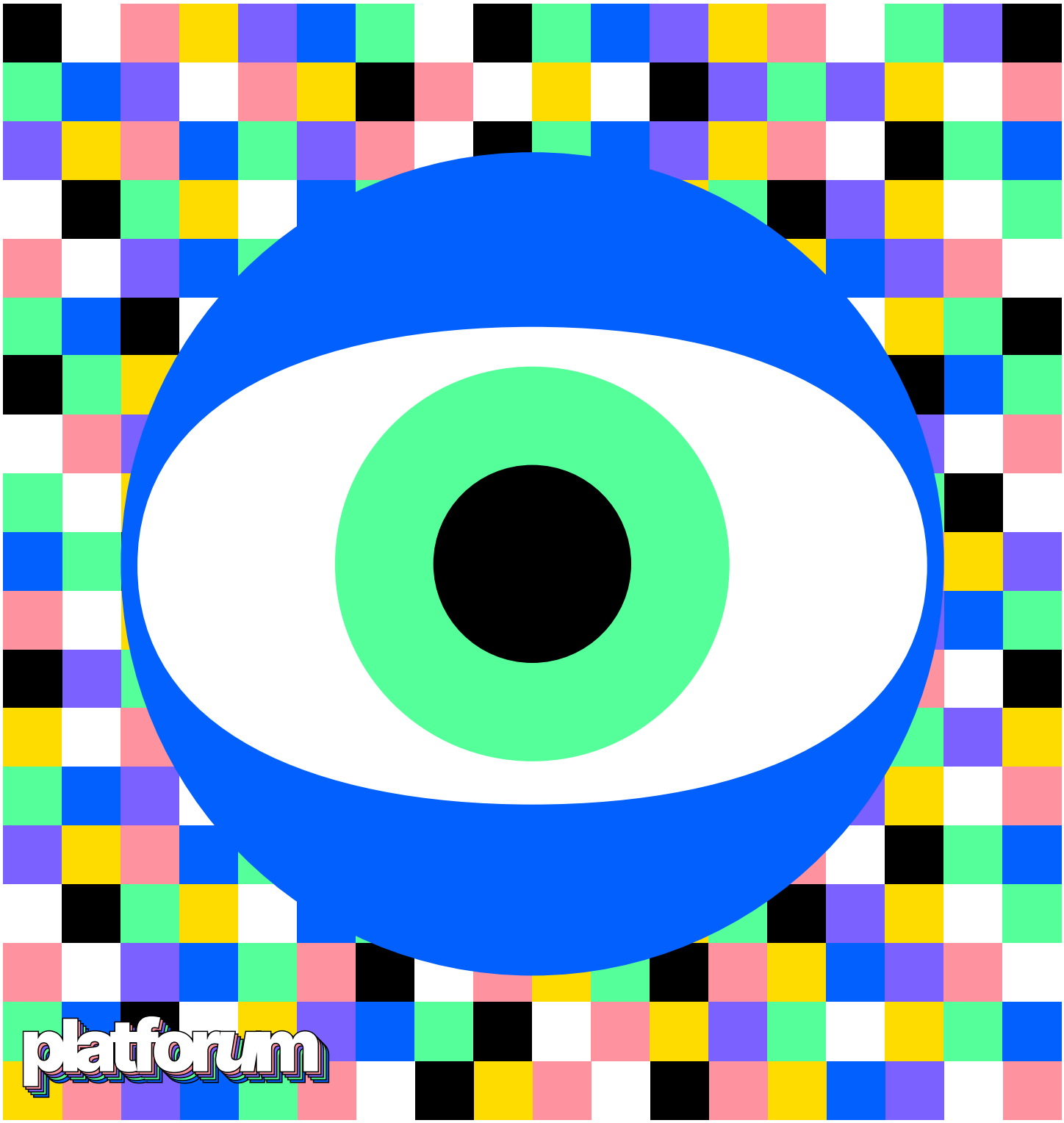
Negotiating the Algorithm

Trade Union Manual



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Chapters

Acknowledgements

This report has been put together with the help of a lot of people.

The ETUC held a workshop to discuss the topic with trade unionists from across Europe in Copenhagen on 12-13 February 2025. This workshop was a chance to test some of the ideas with people who are working in this area every day and get their thoughts and feedback. It was also an opportunity to trial some data recovery and analysis techniques with the help of Leonard Geyer from the GDPoweR project. This workshop helped immensely to refine and sharpen the main arguments of this report.

We also produced a qualitative survey on negotiating the algorithm for ETUC-affiliated trade unionists operating in the platform economy. The comprehensive responses (a summary of which can be found in Annex A of this report) were extremely clarifying in terms of the challenges workers face in negotiating the algorithm and their current capacities to do so.

Finally, in the research for this report a number of interviews were carried out to get expert testimony from those who have been engaged in this work for a number of years. These people are, in no particular order, Paul-Oliver Dehaye, 'Mo', James Farrar, Sebastian Kennes, Danny Spitzberg, Victor Bernhardtz, Sergi Cutillas, Christina Colclough, Merko Herberg, Felipe Corredor, Jessica Pidoux, Fernando García Pallas, Leonard Geyer and Daniel Cruz. These interviews provided indispensable insight.

Thanks to all of the above for their enthusiastic engagement in this project.

Executive Summary

Algorithmic management is the use of data-powered algorithms to deliver management instructions and control the labour process. The spread of algorithmic management has fostered new risks for European workers, especially those in the platform economy.

Algorithmic management is used to determine work allocation and pay in ways that are typically opaque and often discriminatory. Platform workers have to contend with intensive forms of surveillance which reduce autonomy and undermine privacy. Workers are evaluated in ways that are not transparent and with no opportunity for worker input. Perhaps worst of all, workers face algorithmically-determined punishments, up to and including the loss of their job, sometimes without ever being able to communicate with a human boss.

To address these problems, it's imperative that workers and unions 'negotiate the algorithm'. In this report we use this term on the basis it was originally intended; **to negotiate collective agreements between employers and unions over the use of algorithmic management.** But we also use it more broadly to refer to all trade union activity which relates specifically to the algorithmic management of workers, including case work, legal actions, political lobbying and research.

Workers already have transparency rights in the European Union in relation to their data via GDPR, and these are set to be significantly extended in the platform economy when the EU Platform Work Directive becomes national law in each member-state at the end of 2026. The algorithmic management section of the Platform Work Directive places limits on automated monitoring and decision-making, requires human oversight of automated systems and a human review of automated decisions, as well as a broad swathe of rights for workers and their representatives to information and consultation. **The Directive opens up significant opportunities for workers and unions which will have to be acted on pro-actively if they are to be seized upon.**

The stand-out collective agreements negotiated on algorithmic management in the platform economy in Europe so far have been at home cleaning platform Hilfr in Denmark and food delivery platform Just Eat in Spain. The former agreement focuses on ensuring company accountability for algorithmic decisions, while the latter emphasises transparency, and includes some degree of co-determination. Unions should seek to build on best practice and develop their knowledge base of how to negotiate collective agreements on algorithmic management.

As well as collective agreements, data tools can be used for workers and unions to access workers' data, even without the consent of the company. This can be useful for three main reasons:

1. accessing data can offer insights which can help workers better understand company operations and make better decisions.
2. When a collective agreement has been agreed, data tools can help monitor, test and verify that the agreement is being fully complied with by the company.
3. When a company is unwilling to come to the table and negotiate a collective agreement, the information derived from data tools can be used to challenge the company in other ways, such as informing legal cases, evidencing proposals for regulatory reform or as part of a union recruitment campaign.

There are a number of routes by which workers' data can be recovered: Subject Access Requests, download portals, data scraping, surveys, the 'sock-puppet method' and reverse engineering (or 'hacking') are just some of them. These tools are best used in combination with one another. Analysing the data can be challenging for the untrained eye, but like anything else it is a skill that can be learned. What is key is that unions' approach data tools with a clear purpose about what the problem is that they are trying to solve and how recovering and analysing data can help them do that. This "decision-driven" approach reduces the possibility of wasted effort.

There are numerous case studies all over the world evidencing effective use of the data tools described above. In Switzerland, Uber drivers recovered and analysed their data to inform their decision abut whether to accept the company's offer for the back-dated pay they were owed by the company. In Italy, researchers hacked Glovo's app to show that the company was breaching workers' GDPR rights in multiple ways. In Brazil, a simple 'counter-app' was used by hundreds of thousands of ride hail drivers to decide whether it was economical for them to accept or reject trip requests from the platforms. The vast majority of the case studies highlighted in this report have been grassroots initiatives, showing that it's possible to use data tools effectively without having vast resources.

For established unions, the use of data tools seems to be challenging for three main reasons:

1. many trade unionists do not see its relevance to their work;
2. data tools don't necessarily fit unions' organisational culture;
3. and it costs money and human resources to sustain the use of these tools and building of the knowledge over time.

While these challenges are real, they have to be weighed against the value of such an investment, which is not just for platform workers, but for all workers who are algorithmically managed in about 79% of companies in Europe. The platform economy is only the bleeding edge of a much larger phenomenon.

Building union capacity in this area is given greater urgency by the Platform Work Directive, firstly because the new law will trigger battles between platforms and workers over employment classification: workers' data can be used as evidence of subordination and therefore the case for employment contracts. Secondly, when the law is transposed, all platform workers' (employed and self-employed) will have the right to access their data and unions can potentially offer them the tools to facilitate the process and analyse the received data. Unions should look to use the time between now and the transposition of the Directive to build up their data capacities, with the ultimate ambition being to use this capacity across the whole union, not just for platform workers.

To build this capacity, union-organised training programmes should be developed for all members and organisers which work in sectors where algorithmic management is relevant. Unions should also look to build an in-house data team that can provide leadership around data issues, combining together issues of internal union data protection, digital organising tools and tools for the recovery and analysis of data. This in-house team would be well-placed to develop sector-specific strategies, and, on a case-by-case basis, to outsource expertise. This approach should be organised on a cross-union, confederal or even pan-European basis if unions do not have the resources to establish a bespoke data team.

None of this will be easy for unions focused on the immediate challenges of defending their members' terms and conditions. However, a strategic approach which recognises the increasing importance of algorithmic management across a wide variety of sectors could pay dividends in the long-term. A union fully-equipped to negotiate the algorithm could reap the rewards in recruitment and retention of members and be at the cutting edge of building workers' power in the data age.

This manual highlights the unique challenges that algorithmic management can pose for workers, while also underscoring the exciting opportunities for unions to evolve and grow stronger in response. Rather than replacing traditional union organizing, these new approaches should be viewed as valuable additions—like adding new spokes to an already strong wheel—enhancing what already works with innovative tools for the future.

When data recovery and analysis are done effectively, they become powerful assets for

unions and workers alike. They provide deeper insights, enabling more informed decisions and fostering greater confidence in negotiations. This approach holds significant potential not only within the platform economy but across all sectors where digital monitoring and algorithmic management are in play. Every worker deserves to understand the data their employer holds and how it's used—and by closing that information gap, workers can build stronger collective power. This is a promising path toward a more balanced, transparent, and empowered workplace.

Introduction

Over 1960-1961, workers at a Fiat car factory in Turin carried out an analysis of their workplace. They collected information through interviews with workers and even drew a map of the shop floor of the factory, working out the what, when, where and how of the production process.

Through this 'workers' inquiry', as it has later been called, the workers concluded that "far from being a firm that had successfully deployed new technology and advanced management techniques as a means to secure lasting industrial peace, Italy's leading car manufacturer stood on the threshold of a new cycle of mass workplace unrest within which younger workers were destined to play a central role."[1]

The analysis of the workers' inquiry turned out to be prescient: in the 'Hot Autumn' of 1969, a series of major strikes erupted across northern Italy, and at their centre were the Fiat factories in Turin.

What the Fiat workers' inquiry illustrates is that information and analysis have always been fundamental to worker organising, especially in the context of the roll-out of new technologies. The only difference today is that, due to the revolution in data that the computer age has brought about, there is a lot more information which can be collected on workers and the workplace than in 1960.

Up to this point, this data revolution has been primarily exploited by management. In most workplaces, and especially in the platform economy, management collects, stores and processes mountains of data on their workers and the labour process. This information is the basis for computer-programmed instructions, algorithms, which direct and control workers in ways that can be highly secretive and exploitative. While data and algorithmic management can be a major productivity boon, it also creates many dangers for workers.

In this report, we will explore what those dangers are, but the more pressing question we will address is: what can workers do about them? And here, the need for workers to do what the Fiat automakers did - collect and analyse information - is crucial. However, today it has to be done in a 21st century context, where cutting-edge data tools can help.

Of course, the starting point for unions is to negotiate collective agreements to regulate algorithmic management practices.

1 Steve Wright (2018). 'Genre, co-research and document work: the FIAT workers' enquiry of 1960–1961'. Archives and Museum Informatics 18(1).

In this report we look at the progress unions have made up to this point on collective agreements on algorithmic management and what ideally would be included in such a collective agreement.

However, if unions limit their relationship to workers' data to negotiating collective agreements, they are likely to be missing a trick, for three reasons.

Firstly, the information asymmetry between bosses and workers in relation to their data is an industrial relations advantage to the company. It gives managers deep insights into the work of individual workers and the workforce as a whole which inform key strategic decisions. If this information asymmetry could be narrowed through workers and unions accessing the same or similar information, it can be used to inform and improve the decision-making of unions: whether to strike, what to demand from a collective agreement, whether any working practices at a company are in breach of labour law, and so forth.

Secondly, even if a company does agree to a collective agreement with strong data protections and rights for workers, it may not be readily apparent to workers that all aspects of that agreement are being complied with because they cannot see what management is doing with their data. Having the data tools to monitor, test and verify that data and algorithmic management practices are compliant with the law and with collective agreements could be a major asset for unions.

Finally, and perhaps most importantly in the context of the platform economy, achieving a strong collective agreement is a major challenge. Most large digital labour platforms are unwilling to even entertain the prospect. In this context, 'adversarial' data tools - which means the use of data recovery techniques which are not reliant on the goodwill of management - are a means by which workers can both find out about how the algorithm works and what data is collected on them without the consent of the company, and then use that information to build their power. That may be to recruit new members to the union, evidence an employment status claim in court, or to lobby government for stronger regulations. The collective sum of these efforts can help bring management to the negotiating table to sign a collective agreement. If knowledge is power, then data is a means by which workers can build their knowledge and power.

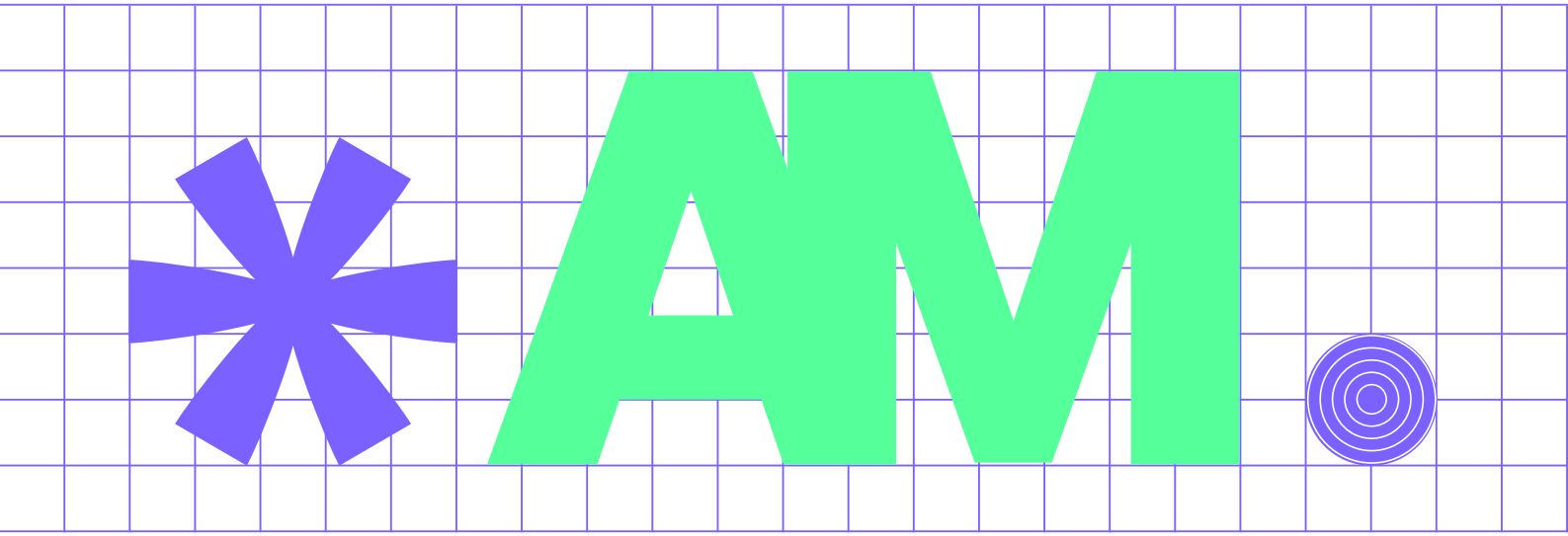
As one worker told us in the research for this study: 'Whatever the bosses can see, we need to be able to see as well'. Achieving that ambition is no easy task, but there are changes afoot that will increase the chances of at least moving in this direction. The algorithmic management section of the Platform Work Directive (which we explore in section 3 b) of

this report) will be transposed into national law by the end of 2026 at the latest and will significantly enhance the algorithmic rights of platform workers in the European Union.

This Directive could strengthen the data knowledge and power of workers, but only if it is used by workers to good effect. The law in itself will change little; it is how the law is used that will count. For trade unions in Europe looking to act on the Directive, strengthening their capacities to recover, analyse and make use of data should be a key objective.

In doing so, unions will be standing on the shoulders of generations of trade unionists before them, like those in Turin's Fiat factories in the 1960s, who understood that the more workers know, the greater vision they can have, and the better decisions they can make.

1. The fundamentals of algorithmic management



a) What is algorithmic management?

Algorithmic management can be best understood by splitting the term into its constituent parts. First, an algorithm is a set of rules which are followed to solve a problem. For example, if the 'problem' is which rider should be allocated the task of picking-up a takeaway delivery from a restaurant, the rules for a very simple algorithm may be that the rider who's GPS location is closest to the restaurant should be first allocated the task of delivering the takeaway. Algorithms were used long before computers, but when we talk about algorithms today we are usually referring to a computer-programmed algorithm, which functions through the processing of data (digitised information).

The 'management' part of algorithmic management refers to the control and direction exercised by bosses over workers via an algorithm. Managers decide the parameters in which algorithms operate and for what purpose. The algorithm therefore carries out management instructions through automated or semi-automated processes to workers, instructions which would have previously been handled by middle managers and supervisors. The information used to inform these algorithmic instructions is supported by data monitoring of workers' behaviour and performance.

Algorithmic management is therefore, as one ILO paper describes it, "the use of computer-

programmed procedures for the coordination of labour input in an organisation."[2]

Algorithmic management is only possible because computers now have the power to store, process and transmit information (data) at a scale much greater and a speed much faster than before the digital age. This enhanced data capacity is in stark contrast to workers, most of whom have little more information about management practices than they did before the digital age, sometimes even less in cases where workers' rights and trade union power have diminished and in decentralized workplacesThis increase in the information asymmetry between capital and labour is all too often translated into increased power for bosses over their workforce.

In companies like Uber, Freelancer or Amazon Mechanical Turk, workers are algorithmically managed through digital labour platforms, where labour services are sold and bought on digital applications (apps). The platform economy is not the only form of economic organisation where algorithmic management exists (as we will discuss more later), but it is the most intensive form of algorithmic management to date and is the focus of this study.

There are two final aspects of algorithmic management that are worth considering at this stage. Firstly, algorithmic management is always partial and conditional. All algorithmic systems, even in the platform economy, can and often do involve elements of human input at all stages of the labour process. For example, Deliveroo uses a work allocation system called Frank which is based on algorithms and machine learning, but the system also relies on human 'dispatchers' to monitor and control the algorithms. The dispatchers, one book-length study has found[3], have the power to "intervene strategically in the assignment of orders, the price of a delivery, and the assignment of a bonus to convince the courier to accept a particularly laborious order: a delivery along a bumpy route or with excessively heavy goods, for instance."

Secondly, there is a wide variety of algorithmic management systems which vary significantly in the intensity of automated processes. For advanced algorithmic management systems, the use of artificial intelligence (AI) and machine learning means that the algorithms self-learn and come up with their own solutions to problems, with management instructions in this context defined in broad terms. Other (cheaper) forms of algorithmic management will limit algorithms to, for example, matching tools which simply connect workers to customers and leave the rest of the organisation of the work, including pay, time, etc, to human decision-making outside the realms of the platform.

2 Sara Baiocco, Enrique Fernandez-Macías, Uma Rani, and Annarosa Pesole (2022). 'The Algorithmic Management of work and its implications in different contexts'. Independent Labour Organisation.
3 Tiziano Bonini and Emiliano Treré (2024). 'Algorithms of Resistance: The everyday fight against platform power'. The MIT Press.

Based on this brief overview of the contours of algorithmic management, we can proceed to dive deeper into the specific ways in which it impacts platform workers' labour.

b) Algorithmic management: functions and risks

We can break down the main functions of algorithmic management in the platform economy, and some of the risks associated with them for platform workers[4], into the following areas:

Work allocation: The core objective of most algorithms in the platform economy is to match customers paying for a service (demand) to workers to carry out that service (supply). While proximity is obviously a key data input for determining work allocation in on-location platform work like ride hail, there are a wide variety of others, including factors relating to the track record of that specific driver on the app such as performance indicators and task acceptance rates (this is known as 'profiling'). This can make it very difficult for a worker to know why they have or haven't been offered work relative to another worker.

Risks to workers from opaque work allocation include insecurity of income, as workers can go long periods of time without getting work allocated, and discrimination, as workers can lose work based on individual profiling by the platform. For example, a court in the Italian city of Bologna found in 2020 that Deliveroo's Frank algorithm was discriminatory because it penalised workers who were absent without taking into account the reason, such as illness or being on strike.[5] Automated task allocation also reduces worker autonomy, as workers typically have between 15-40 seconds to decide whether to accept a work request, often making it difficult to decide whether accepting a request for their labour will be economically beneficial for them or not after costs.

Pay: The use of algorithms to determine the wage offered to workers for carrying out a task is one of the main ways in which algorithmic management is significantly different from standard management practices. Rather than wage rates being determined by a set of consistent metrics, such as time and distance travelled in food delivery (e.g. €4 per kilometre), wage rates can vary wildly depending on a wide variety of data inputs into the algorithm, a practice known as 'dynamic pricing'. These data variables include market conditions. For example, in the ridehail sector, if consumer demand is especially high, 'surge-pricing' is used to motivate drivers to meet that demand. If supply is high and demand is low, wage offers fall significantly. Prices can also be personalised based on

4 This is by no means an exhaustive list of the risks of algorithmic management. See the survey evidence provided by platform workers and trade union organisers in Annex A for more.
5 Ben Wray (2021). 'Italian Union Hails Court Victory over "Discriminatory" Deliveroo Algorithm'. Brave New Europe - The Gig Economy Project.

profiling, including at what pay rate the worker has previously accepted for tasks. Bonuses for workers are also algorithmically determined based on meeting specific objectives, for example completing five trips within one hour. This 'gamification' of work can be used to motivate workers to work faster and longer.

The risks to workers from dynamic pricing and gamification are legion. Planning how many hours to work becomes very difficult when one does not have any clear indication of how much money they will earn. The huge variety in pay rates offered means workers can frequently earn below the minimum hourly wage. The use of profiling to decide pay rates also risks what professor Veena Dubal has called "algorithmic wage discrimination"[6], as two workers can be offered entirely different pay rates for the exact same work, based on criteria unbeknown to them. Gamification, like gambling, has addictive qualities and increases the risk of accidents at work from driving too fast or over-working.[7]

Control: Algorithms are used to exact control over the way in which workers execute tasks. For example, GPS location data means a food delivery platform always knows where the courier is, with those who divert from the prescribed route being susceptible to punishment. The time from picking up the food to the delivery point is also calculated to the second, with couriers deemed to go too slow facing the risk of reduced work allocation or de-activation from the app.

Algorithmic mechanisms of control reduce the autonomy of workers to problem-solve, making the work monotonous. It can also increase risks to workers due to the time-pressure they are under and the lack of autonomy they have to make their own decisions in real-time, for example for couriers in relation to particularly dangerous street junctions which are best avoided at particular times of the day.

Surveillance: Platform workers are intensively and constantly surveilled through the platform's collection of a wide variety of data, sometimes including when they are not working. Upwork, the 'cloudwork' platform, records the key strokes of workers and can take pictures from the worker's computer camera.[8] Worker surveillance is a means for platforms to exercise control over workers, including in cases of dispute, but the data that is collected is also a commodity in its own right which platforms can sell on to third parties.

As well as impinging on workers' privacy and autonomy, pervasive data collection can also affect workers' willingness to engage in resistance, with some self-censoring and conforming to company expectations out of fear that they are always being watched and

6 Veena Dubal (2023). 'On Algorithmic Wage Discrimination'. UC San Francisco Research Paper.
7 Sarah Mason (2018). 'High score, low pay: why the gig economy loves gamification'. The Guardian.
8 Caroline O'Donovan (2018). 'This "Creepy" Time-Tracking Software Is Like Having Your Boss Watch You Every Second'. Buzzfeed.

listened to. Intensive digital surveillance tips the power balance even more towards companies.

Evaluation: Platforms use both internal and customer digital ratings systems to assess worker performance. These ratings have direct effects on work allocation algorithms and if ratings are deemed to fall below a threshold, workers can even be deactivated from the platform. Lower customer ratings' in ridehail, for example, can reduce the willingness of customers to accept a ride from a particular driver, while in domestic care work customer ratings can be a means for customers to control workers. For internal ratings systems, workers have no knowledge of how they are being evaluated and no opportunity to offer feedback. Customer ratings are anonymised and there is no means for workers to challenge the ratings of customers or (in most platforms) to rate the customers in turn.

Ratings systems can be a major source of stress and anxiety for workers. Ratings pressure workers to fulfil customer demands even if they are unreasonable or even dangerous to workers. For instance, there have been reports of domestic care workers being pressured into fulfilling demands for customers which have nothing to do with their agreed work plan, in fear of a bad rating from the customer.[9] The one-sidedness of company and customer evaluations, which disempowers workers as they have no means to defend themselves, can increase the possibilities for discrimination based on ethnicity, gender and/or disability.

Punishment: Automated systems can take the decision to suspend or ban workers from the platform, a sacking which in the language of self-employed platform work is euphemistically called 'app de-activation'. The reasons for automated de-activations vary widely, from what the algorithm deems to be poor performance based on low ratings to an assessment that a worker is committing fraud due to failing a facial ID check or erroneous GPS location data. Despite the seriousness of a worker immediately losing their source of income due to a de-activation, workers often have no recourse to appeal and no ability to speak to a human being to challenge the decision.

Platform de-activations are one of the most typical sources of complaint and anger from platform workers due to the gravity of losing their income and the feeling of injustice that it stirs. The fear of being de-activated from the platform can have a disciplining effect on workers, pressuring them to conform to company expectations and reducing their autonomy. Automated de-activations can have inbuilt forms of discrimination, such as black and minority ethnic (BAME) Uber Eats riders who have failed the company's facial ID checks and been de-activated as a consequence,[10] despite Microsoft (the proprietor of the

9 Karolien Lenaerts, Milou Habraken, Dirk Gillis, Noah Vangeel and Laurène Thil (2024). 'Digital platform work in the health and social care sector: Implications for occupational safety and health'. European Agency for Safety and Health at Work.
10 Shiona McCallum (2024). 'Payout for Uber Eats driver over face scan bias case'. BBC.

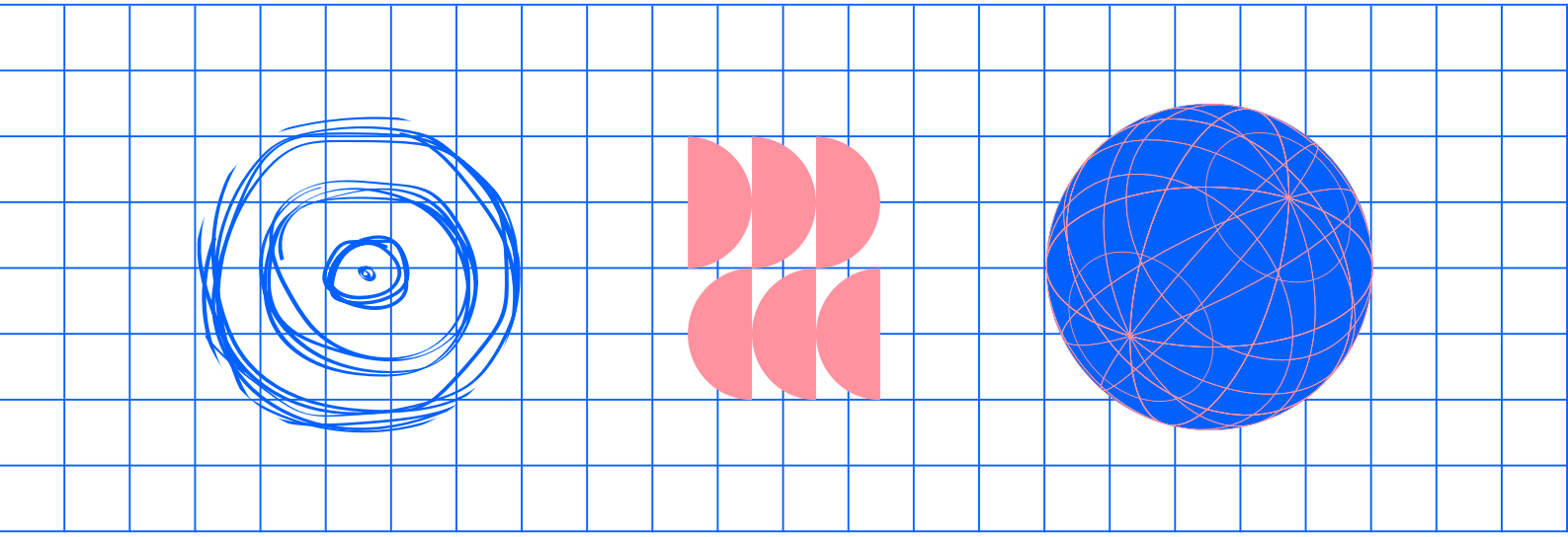
technology) admitting that the facial ID checks do not work as well on BAME people as they do on white people.[11]

Non/late payment: Platform workers frequently have problems with not being paid for their work, receiving late payments and/or having to do unpaid labour. This is partly an issue because most digital labour platforms have very limited HR departments, making it difficult for workers to speak to a human when they have a problem. It is also related to a policy of siding with the customer over the worker in case of a dispute, especially when the worker is self-employed and therefore can be dispensed with by the platform at almost zero cost. Finally, the payment system technology of platforms' sometimes fails, with workers bearing the brunt of those failures.

In cloudwork, where workers carry out tasks from their own home on digital labour platforms for clients such as translation or secretarial services, 25 per cent of workers have experienced non-payment. Once a worker has accepted a task offered by a client, they are also frequently asked to do more work than what they had agreed to, with cloud workers spending 8.5 hours on average per week on unpaid labour.[12]

11 BBC (2020). 'George Floyd: Microsoft bars facial recognition sales to police'.
12 Fairwork (2023). 'Fairwork Cloudwork Ratings 2023: Work in the Planetary Labour Market'. Oxford, United Kingdom.

2. What do we mean by 'negotiating the algorithm'?



'Negotiating the algorithm' is a term first used by labour law academic Valerio De Stefano to refer to collective agreements between employers and workers' organisations over "the use of digital technology, data collection, and algorithms that direct and discipline the workforce".[13] While in this report we use the term in the specific sense intended by De Stefano, we also use it more broadly to refer to all trade union work which relates specifically to the algorithmic management of workers.

It's important that this term is not understood in a literal sense. Unions are not negotiating with the algorithm, they are negotiating with management like in any other company. The difference is that the management's instructions to workers are largely or partially mediated through an algorithm.

This distinction is important for two reasons. Firstly, platforms like to present algorithms as if they are something incomprehensible and independent from human control. This presentation is a means to reduce management accountability for the consequences of automated decisions. The reality is that management is accountable for all of the actions of an algorithm, which is under its control and does not act independently of its instructions.

Secondly, it's crucial that negotiating the algorithm is not considered to be something separate and distinct from negotiating with management over bread and butter questions of pay and conditions. The issues workers face relating to algorithmic management do

13 Valerio De Stefano (2019). '"Negotiating the Algorithm": Automation, Artificial Intelligence, and Labor Protection'. Comparative Labor Law & Policy Journal, vol. 41 n°1.13

include questions of privacy and transparency, but - as we have shown in section 1 b) of this report - they also pertain to the core questions of pay and conditions, as well as to how unions organise and build power in these companies. It's therefore critical that algorithmic management issues are not siloed within union organisation.

We can split up the full breadth of what negotiating the algorithm entails into the following five areas:

1) Collective bargaining: Negotiating collective agreements with companies over the wages and conditions of the workforce is a core activity of trade unions. In the platform economy, where wages and conditions are heavily conditioned by algorithmic management, it is imperative for unions to negotiate over the basis upon which algorithms are used in the organisation of work. We explore this in full in section 4 of this report.

2) Case work: Unions represent workers when they face specific problems at work affecting them as an individual. This is called case work and is an especially important part of union work in the platform economy because of platforms' heavy reliance on automated processes for managing workers, meaning when workers have even basic problems they have no human point of contact and are therefore difficult to resolve, thus requiring union intervention. The personalised aspect of algorithmic management, with each worker treated differently by the algorithm, also increases the propensity for problems to affect individual workers differently.

3) Legal actions: One of the main ways in which unions in Europe have represented platform workers to date is through legal actions in court, especially in relation to employment status.[14] Court actions can be slow and costly but they can win substantial sums for workers in back-dated pay and set legal precedents which have a wider influence beyond the case of the specific worker involved.

4) Political lobbying: The business model of large digital labour platforms like Uber has been based on 'disrupting' standard European regulatory regimes in relation to labour law in order to minimise labour costs, presenting a challenge for regulators. Unions have been central to pushing for governments to take enforcement action to pressure platforms to comply with existing labour laws and lobbying governments to reform labour laws to ensure workers' have rights in the context of algorithmic management, most notably in the case of the EU Platform Work Directive (which is discussed in detail in section 3 b) below).

5) Research: Algorithmic management remains a relatively new phenomenon and is

14 Christina Hießl and Silivia Rainone (2024). 'Judicial Creativity in the Platform Economy: Normative Insights for Broadening the Scope of Labour Law'. Cheltenham, Edward Elgar.

changing all the time as platforms' technological capacities grow. Research into algorithmic management can uncover new avenues for union organising, open up new collaborations with other unions and civil society, and help open up 'the black box', a term widely used to describe the lack of transparency over platforms' algorithms.

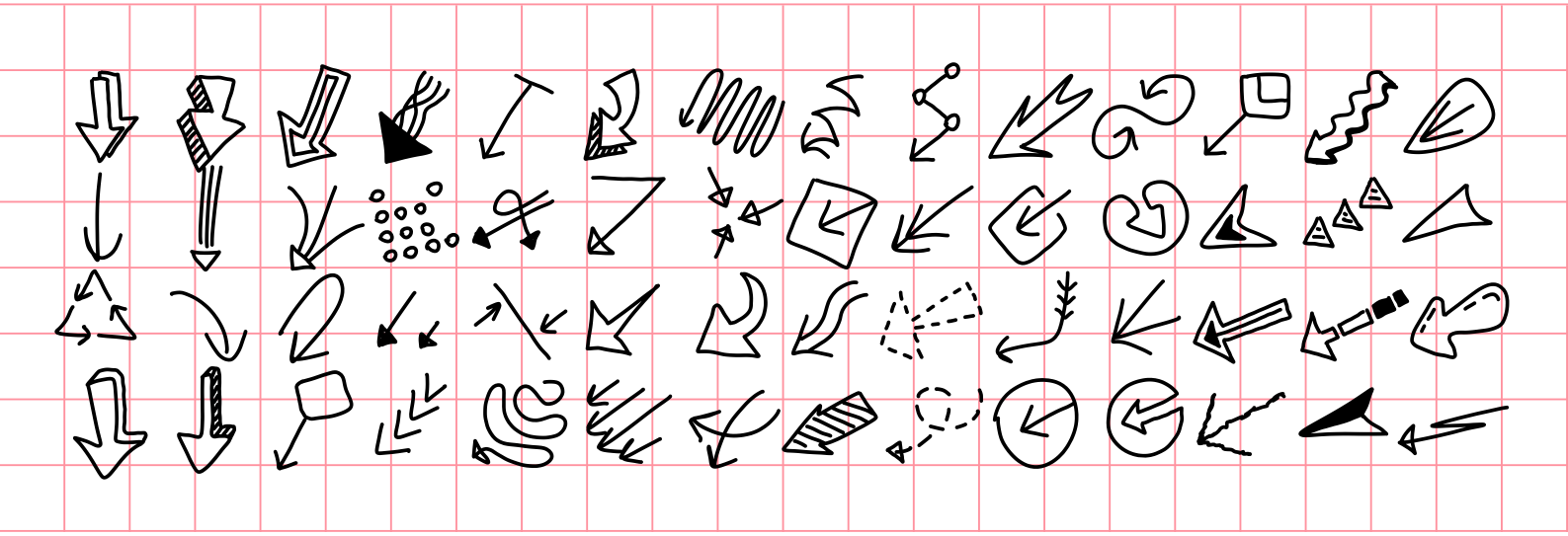
In sum, having a broad perspective about what negotiating the algorithm looks like, including but not limited to collective agreements, is important for unions operating in the platform economy especially, because most platforms are currently unwilling to recognise unions and negotiate with them. Unfortunately, there is no guarantee that will change once the Platform Work Directive is enacted.

In all of the five cases cited above, trade union work can be significantly enhanced through accessing data on algorithmic management practices using data tools. This data can help inform collective agreements, provide evidence for specific case work, justify an argument in court, and as evidence to lobby politicians or for a press release.

Of course, unions must continue to operate using also traditional methods, in addition to skills in data recovery, analysis and communication. What's more, the face-to-face organising on the ground is a pre-requisite for effective use of data tools, since that is how you will get worker buy-in to share the personal data with the union and that's how you will learn about what the problems are and how specifically data tools can help.

The argument here is that developing unions' data capacities can be an important addition to a union's armoury which can complement traditional methods, by providing the union with information that can be used to more effectively organise and bargain for better conditions. Data tools can help reduce the information asymmetry between capital and labour and thus build the power of workers and unions.

3. The legislative framework



a) GDPR

The European Union's General Data Protection Regulation (GDPR) entered into force in May 2018 and remains a world-leading legislation in terms of establishing a degree of control and rights over personal data, acting as a model for regulation in various countries since its introduction, including Japan and South Africa.

GDPR applies to all companies operating in the EU, whether the data is processed in the EU or not, and is equally applicable to workers whether they are employed or self-employed. A European Trade Union Institute (ETUI) paper[15] identified various ways in which GDPR is particularly relevant to defending platform workers' rights, including:

- **Ratings:** Workers have a right to access a copy of ratings systems used by platforms (Article 15.1 and 15.3) because they are considered to be personal data (Article 4.1). Workers can request that rating systems are corrected if inaccurate (Article 16). Hidden internal evaluations of workers are illegal (Article 15.1-15.4). Workers have the right to 'obtain human intervention' in relation to automated decision-making systems (Article 22.3).

- **Transparency:** Under article 15.1 on right of access, platforms must state how workers are rated and the consequences for such ratings.

15 Michael 'Six' Silberman and Hannah Johnston (2020). 'Using GDPR to improve legal clarity and working conditions on digital labour platforms'. ETUI.

- **Account de-activations:** Workers who have been temporarily or permanently suspended can use a Subject Access Request (SAR), explained in more detail in section 5 b), to access all personal information relating to that decision (Article 15). If the worker believes inaccurate or incomplete information was used to make that decision, workers can request that the information is corrected which “could lead to a reversal of the suspension or closure decision.” However, this is only applicable if the platform’s terms and conditions state that account suspension only applies in limited circumstances (which some do and some don’t).

- **Access:** As mentioned in section 5 b), a SAR can be sent to the company relating to any aspect of personal data held on the worker by the platform (Article 15) and a response is legally required within one month (two month extension if the request is deemed to be very complex).

However, there are opt-outs within GDPR which platforms have frequently used to avoid releasing data, including that data disclosures would “not adversely affect the rights and freedoms of others” (article 15.4) and would not undermine intellectual property and trade secrecy (recital 63). Despite the fact that recital 63 goes on to say that such considerations should not act as "a refusal to provide all information to the data subject”, these opt-outs are often used by platforms to provide little or incomplete information in SAR responses.

Another argument that has been consistently made by companies is that because they use software which is owned by a third-party, GDPR is not applicable to them. There is little defence for this position within the terms of GDPR, since a clear differentiation in the text is made between a third-party, where there is no contractual relationship between that company and the firm the worker is hired by (‘the data controller’, in the language of GDPR), and a company which is “acting under the authority of the controller or of the processor”, where there is a contractual relationship between the two companies in place for use of the software. In the latter case, it is the controller which still has responsibility for the workers' personal data and therefore GDPR is still applicable.

If workers are unhappy with a SAR response they can take their case to Data Protection Authorities (DPA), but there is a poor track record of DPAs pursuing actions against companies for lack of compliance, partly due to DPAs having insufficient resources. The next port of call for workers is litigation, which is costly and takes a long time for a resolution.

There are important court cases which have been won by workers against platforms in

relation to their personal data rights, using GDPR as the basis for their claim. One of the most important was a case brought forward by the App Drivers and Couriers Union (ADCU) and Worker Info Exchange (WIX) on behalf of Uber and Ola drivers in the UK and Portugal to the Amsterdam District Court (the Netherlands is where Uber's European operations are headquartered) in 2021, which was later taken to the Amsterdam Court of Appeal by ADCU and WIX.[16]

In section 5 f) we examine this court case in detail, but here it is sufficient to say that the Court of Appeal found in the first case, on the basis of Article 22 of GDPR, that Uber had to explain all the factors involved in deciding to permanently de-activate four Uber drivers for 'fraudulent activity'. In the second case, the Court found, on the basis of Article 15 of GDPR, that Uber and Ola Cabs drivers' had the right to their personal data in relation to profiling, including how work is allocated and how prices are determined.

However, Uber's incomplete response to the Court's verdict, despite facing heavy fines for non-compliance, highlights the challenges in getting multinational platforms to comply with GDPR and the enforcement mechanisms which exist to pressure them to do so.

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Indeed, a lack of effective enforcement measures has been the major complaint by not only worker organisations but also those representing civil society in relation to GDPR. Eighteen civil society organisations signed a letter to the European Commissioner for Justice in 2022 proposing a series of recommendations, including the harmonisation of national procedure rules in relation to DPA complaints, increased resources for DPAs and for DPAs to make better use of existing enforcement tools, to enable GDPR to reach its "potential".[17]

All of this is equally applicable in relation to worker-related GDPR issues and will continue to be relevant in the context of the new algorithmic rights in relation to the EU Platform Work Directive, which we will turn to next.

b) Platform Work Directive

The European Union Platform Work Directive[18] (PWD) was finally adopted in October 2024 and has to be transposed into national law by December 2026.

16 Amsterdam Court of Appeal (2023). 'ECLI:NL:GHAMS:2023:796'.
17 EDRi (2022). 'Civil society call and recommendations for concrete solutions to GDPR enforcement shortcomings'.
18 Official Journal of the European Union (2024). 'Directive (EU) 2024/2831 of the European Parliament of the Council of 23 October 2024 on improving working conditions in platform work'.

PWD establishes new rights for workers in the platform economy, which can be broadly split into two parts. The first is in relation to employment status. There will be a legal presumption of employment for platform workers in the EU, but the exact functioning of this procedural tool will be determined at the nation-state level.

The second part establishes new rights for platform workers in relation to algorithmic management. This is what we will focus on here. The key articles are the following:

- Article 7 establishes **limits on automated monitoring and decision-making**. Platforms cannot process a worker's personal data in relation to: their emotional or psychological state; private exchanges; when they are not using the app; on the exercising of fundamental rights including worker organising; things that are personal to the worker including sexual orientation and migration status; biometric data when used to establish that person's identity.

- Article 8 establishes the need for platform's to conduct a **data protection impact assessment** to ensure their algorithmic systems are in line with GDPR. The views of platform workers and their representatives should be consulted when conducting a DPIA and the assessment should be provided to worker representatives.

- Article 9 on **transparency of automated monitoring and decision-making systems**. Information must be provided on "all types of decisions" by automated systems, including how profiling influences decisions taken and an explanation of the grounds for important decisions, e.g. account termination. Information must also be provided on all data categories monitored, the aim of the monitoring and if that data is transferred and to whom. Workers and their representatives shall receive information on changes to automated systems "prior to the introduction of changes affecting working conditions". Workers will have "the right to the portability of personal data generated through their performance of work" with the cost paid by the platform.

- Article 10 on **human oversight of automated systems**. Decisions on temporary or permanent de-activations are taken by a human being. Member-states carry out an evaluation every two years on the impact of automated decisions on platform workers, with platforms required to make modifications and/or discontinuation of automated systems if specific problems are found. The evaluation is made available to worker representatives. Platforms will have competent staff to ensure effective oversight of automated decisions.

- Article 11 on a **human review of automated decisions**. Workers have a right to an explanation for "any" automated decision. They must have a "contact person" at the digital labour platform "to clarify the facts, circumstances and reasons having led to the decision." Worker representatives can request a review of an automated decision, with a response from the platform required within two weeks. Any decisions which have been found to infringe the rights of platform workers must be rectified within two weeks. Where rectification is not possible then "adequate compensation" is required for damages caused.

- Article 12 on **health and safety in respect to automated systems**. Platforms must evaluate the risk of automated monitoring and decision-making systems to worker's health, including assessing whether there are appropriate safeguards and introducing preventive measures where necessary. Any automated systems found to be unsafe must be banned. Reporting channels should be established to report any violence or harassment against platform workers.

- Article 13 on **information and consultation**. Worker representatives will be entitled to be informed and consulted about "decisions likely to lead to the introduction of or to substantial changes in the use of automated monitoring or decision-making systems." Furthermore, worker representatives can be assisted by "an expert of their choice" to assess any information provided by the platform. The cost for this, "provided that they are proportionate", shall be paid for by the platform when they have more than 250 workers in the member-state concerned.

- Article 17 on **access to relevant information on platform work**. Member-states and platform work representatives can access information from the platform on: number of workers disaggregated by level of activity and employment status; the general terms and conditions of the workers; the average duration of activity, the average weekly number of hours worked per person and the average income for a worker who works on a regular basis (provided on request); the intermediaries (sub-contractors) which the platform has a contractual relationship with. This information must be updated every six months and each time terms and conditions are modified (every year for small platforms).

To what extent are these provisions an advance on GDPR, which the text of PWD states is the "general framework" which PWD builds upon? In an ETUI briefing on the topic,[19] labour law researchers Antonio Aloisi and Silvia Rainone find that in many cases, like Article 7 on limiting automated monitoring and decision-making, PWD establishes new red lines on data

19 Antonio Aloisi and Silvia Rainone (2024). 'The EU Platform Work Directive: What's new, what's missing, what's next?'. ETUI.

collection which GDPR did not do. In others, like Article 11 on a human review of automated decisions, the Directive clarifies an aspect of the law which wasn't clear in GDPR.

Additionally, Aloisi and Rainone find that the individualised dimension of GDPR is partially overcome in the PWD, as it establishes "important prerogatives for workers' representatives", including in cases of self-employed workers, bogus or otherwise. However, there are some provisions which do not apply to self-employed workers: the right to human oversight (Article 10), health and safety (Article 12) and the right of worker representatives to access information and consultation on substantial changes to algorithmic processes (Article 13). The fact that Article 10 does not apply to self-employed is a significant weakness, since it means that 'robo-firings' (mentioned in section 1 b)) will not be a thing of the past unless these workers are classified as employees, in which case automated de-activations would be in breach of labour law anyway.

As Aloisi and De Stefano have pointed out, the Directive means that platform workers "could mobilise stronger data-protection rights than workers in conventional labour-market sectors."[20] However, as they also argue, the Directive "could have prompted fully-fledged collective-bargaining rights" by opening up the algorithm to collective agreement, rather than just assessment and consultation, by unions. While Article 17 does permit unions to access information on "general terms and conditions" every time they are updated, how this is interpreted by platforms may not be the same as how unions would interpret it.

The Directive will put the responsibility on unions and workers to push the platforms for data and explanations, just as is the case now with GDPR, except with more clearly defined parameters about what data they can access and the role of unions in that process. If we can think of the algorithmic management part of this Directive as a beefed up GDPR for platform workers, we also must consider the main difficulties unions and workers currently have with accessing data through GDPR: non-compliance and data protection authorities unwilling or unable to pursue enforcement actions. Undoubtedly, these will remain significant challenges when the Directive enters into force.

In this context, Article 13 of the Directive could be highly significant. The fact that platforms have to pay the cost of data experts to assess information provided by the platform to worker representatives could make it easier to sustain the involvement of data scientists in union work in the platform economy over a long period of time.

However, there are significant limitations on Article 13. First, we understand that the cost of a data expert will only be covered for the scope of Article 13, not in respect to all of the

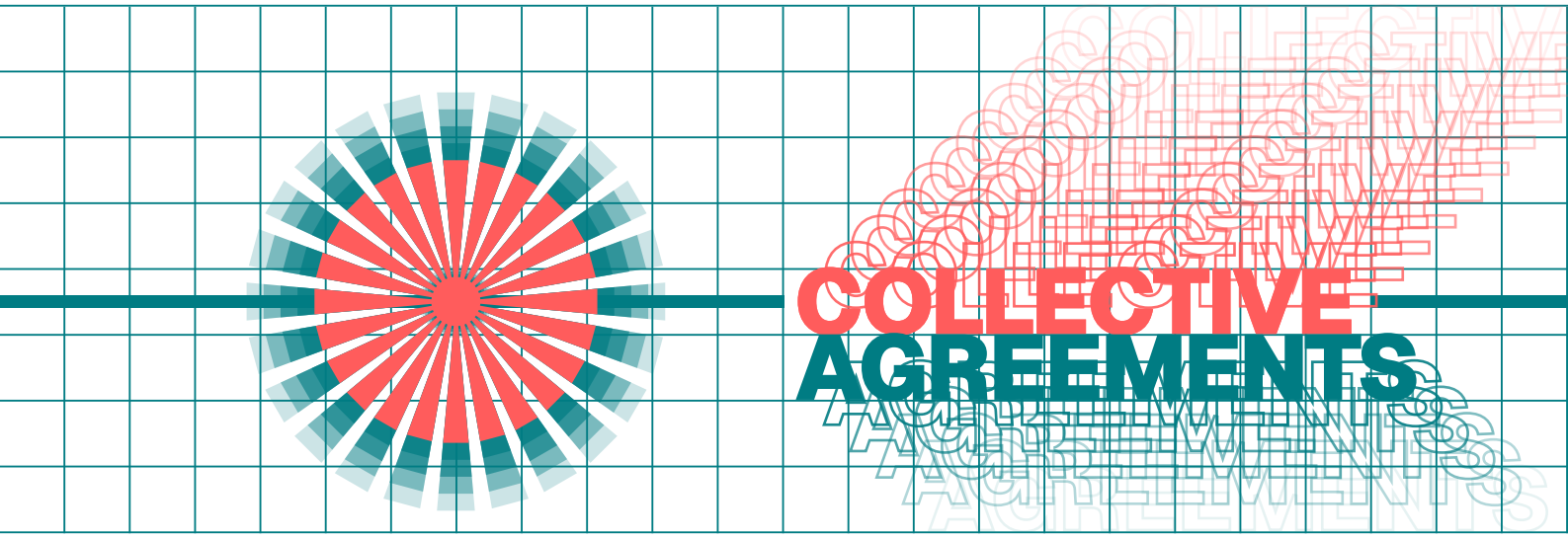
20 Antonio Aloisi and Valerio De Stefano (2024). '"Gig" workers in Europe: the new platform of rights'. Social Europe.

provisions in the algorithmic management section of the Directive. Secondly, the absence of self-employed workers from this provision could make it difficult for unions to access collective data on the platform in the early stages after the law is enacted, when many platforms are likely to be still refusing to employ their workers and there will be a legal conflict between unions and platforms over their employment status.

Under Article 26 of the Platform Work Directive, member-states do have the power to go beyond the minimum floor of rights established in the Directive. The extension of Article 13 to self-employed workers and the right to access data experts in the context of all of the provisions of the Directive would be one way in which member-states could enact legislation which goes beyond the constraints of the Directive.

Another would be to extend the application of the algorithmic management chapter of the Directive to all workers, not just those who do platform work, since algorithmic management extends well beyond the platform economy and there appears to be no good reason why these rights should not be applied to all workers who are algorithmically managed.

4. Collective agreements on algorithmic management



a) Objectives and proposals

The importance of collective agreements in the processing and governance of data is already on a European legal footing via Article 88 of GDPR. As De Stefano and fellow labour-law academic Simon Taes have found, "this article defines collective agreements as essential for fair and lawful data processing in the context of employment. It refers explicitly to data processing for recruitment and management purposes, which means that collective agreements could provide adequate safeguards when AI-enabled tools and algorithmic management practices are implemented in workplaces."[21]

What should a collective agreement between unions and management on algorithmic management contain? UNI Global Union has developed a "gold standard" for workers' data protection[22] which has been designed primarily in the context of digital monitoring for those in standard jobs, but the proposals are relevant in the context of algorithmic management and platform work as well.

The proposals are summarised by the following sentence: "Union representatives must have the right to access, influence, edit and delete data what is collected on them and via their work processes." This is a strong principle from which to start from when thinking about what unions should be aiming for from collective agreements.

21 Valerio De Stefano and Simon Taes. 'Algorithmic management and collective bargaining'. ETUI, Volume 29 Issue 1.
22 UNI Global Union (2017). 'Top 10 principles for workers data' privacy and protection'.

There are ten proposals in all, which we summarise as follows:

1. **The right to access to and influence over the data collected on workers**, including: that consent cannot, and should not, be the legal basis of data processing at work; the ability to obtain this data (including information on its origins and how it is processed) upon request in an intelligible form; the right to data portability; and the right to communicate personal data to workers' representatives.

2. Employers should have in place the following **data processing safeguards**: inform workers before the introduction of digital monitoring (DM) technologies or before any significant changes to DM systems; running a privacy impact assessment before introducing new DM systems; the employer should provide guarantees in writing that the workers' data privacy and dignity will be respected by any new system introduced.

3. Respect the **data minimisation principle**, which is: "Collect data and only the right data for the right purposes and only the right purposes, to be used by the right people and only the right people and for the appropriate amount of time and only the appropriate amount of time." Employers should be able to demonstrate compliance with this principle.

4. **Transparency in data processing**, including: the categories of personal data processed and a description of their purpose; and the recipients or categories of recipients of the personal data.

5. **Respect for privacy laws and fundamental rights**, including the UN Declaration of Universal Human Rights and the ILO's code of practise on the protection of workers' personal data. Data processing should respect the privacy of data relating to the worker's individual and social relationships.

6. Workers have the **right to an explanation for when data is used**. This includes data sourced internally and externally by the company. This is a safeguard against discriminatory uses of data, such as in predicting a worker's future health.

7. The **collection of biometric data and personally identifiable information** should only be used when no other less intrusive means are available and only with appropriate safeguards. It should be based on scientifically recognised methods.

8. Employee **geo-location data** must only be collected if it is necessary for the execution of the work and must not lead to continuous monitoring of workers.

9. **A data governance body** should be established in the company to govern data formation, storage, handling and security issues. This body should include shop stewards and all members of the body should receive data training.

10. All of the above should be implemented and enforced by **a collective agreement**. In the absence of such an agreement, it should be implemented via the data governance body mentioned in point 9.

As we saw in Section 3 b), some of these proposals, such as the right to an explanation and limits on specific types of data collection, are contained within the Platform Work Directive, but other aspects, such as the data minimisation principle and a data governance body, go significantly beyond the EU legislation.

There are some algorithmic management-specific proposals that should also be considered. For instance, Worker Info Exchange has proposed[23] banning "the use of opaque algorithmic decision-making technology to dynamically set variable pay and assign work". While this is less of an issue in the employment context than when workers are self-employed, in the UK Uber ridehail drivers have been employed since 2021 (albeit via a third status)[24] and even subject to a recognition agreement with trade union GMB,[25] but despite this dynamic pricing was rolled out from 2022 onwards[26] and remains in place. Algorithms which discriminate based on profiling can potentially be an issue beyond factors like pay and work allocation, and therefore is relevant to employees who work fixed hours as well.

Privacy International (PI), a UK information rights advocacy group, has proposed that all decisions taken algorithmically should be accompanied by an explanation to the worker on how it was made and how it can be challenged. This explanation should include any relevant context for the decision, such as customer ratings.[27]

On evaluation of worker performance, unions could require that platforms which use customer ratings' systems provide a means for workers to rate customers in turn. Also, if algorithmically-determined internal ratings systems are used, they should be consistent and objective so workers understand how they are being rated and what the consequences of these ratings are. As the Spanish union CCOO has proposed, all algorithmically determined evaluations should be sent directly to the workers so that they can continually

23 Worker Info Exchange. 'Platform Workers Manifesto: 10 priorities to fix a broken gig economy.'
24 Ben Wray (2021). 'Uber U-turns, classifying UK drivers as workers'. Brave New Europe - The Gig Economy Project.
25 Ben Wray (2021). 'Britain: Grassroots unions question the value for drivers in GMB's formal recognition agreement with Uber'. Brave New Europe - The Gig Economy Project.
26 Ben Wray (2023). "Is 'dynamic pricing' ripping-off gig workers?". Brave New Europe - The Gig Economy Project.
27 Privacy International (2024). 'Accompany all algorithmic decisions with an explanation of the most important reasons and/or parameter(s) behind the decision and how they can be challenged'.

monitor them.[28]

Additionally, some forms of data collection should be prohibited full-stop, such as neurosurveillance.[29]

Also, algorithms could be subject to an independent audit, with software engineers agreed to by the union and the employer given full access to the source code to guarantee that what is included in a collective agreement is being complied with. PI have proposed that workers' representatives should have access to a "sandboxed" version of the algorithm so that they can test it themselves.[30]

Finally, while point 9 in the UNI union proposal on the data governance body provides some degree of co-determination over the algorithm, it's possible to go further and propose collective governance of data so that unions are not just responding to changes unilaterally made by employers, but are involved in negotiating the algorithm at the design stage and with 'live' access to the algorithm's 'control room', so that they can immediately address problems and monitor the relationship between supervisors, the algorithm and workers.

b) The state of play

Although collective agreements in the platform economy in Europe remain the exception, rather than the rule, there are now several across the continent which have been signed. However, only two stand-out in terms of seriously tackling algorithmic management: the agreement between cleaning platform Hilfr and the 3F union in Denmark, signed in 2024, and the agreement between the food delivery platform Just Eat and the UGT and CCOO unions in Spain, signed in 2021. Let's look at each in turn.

Hilfr and 3F union agreement in Denmark

This is the first agreement[31] in a home cleaning platform to take account of issues around algorithmic management, a significant milestone. The first agreement,[32] signed in 2018, simply stated that the platform needed the consent of workers for the use of their personal data. The 'Hilfr 2' agreement is a significant step forward from this.

28 Patrick Brione (2020). 'Gestión Algorítmica: Guía destinada a los sindicatos'. CCOO.
29 Ekaterina Muhl and Roberto Andorno (2023). 'Neurosurveillance in the workplace: do employers have the right to monitor employees' minds?'. Front. Hum. Dyn. 5:1245619.
30 Privacy International (2024). 'Allow workers, their representatives and public interest groups to test how the algorithms work'.
31 An English text version of this collective agreement was sent to ETUC as part of the research for this report. It is not publicly available at time of writing.
32 3F and Hilfr (2018). 'Collective agreement Between Hilfr ApS. CBR.no.: 37297267 and 3F Private Service, Hotel and Restaurant'. English version: translation by the Danish Confederation of Trade Unions.

Hilfr 2 is only applicable to Hilfr employees[33], which constitute about 40% of the total workforce as of 2020. Hilfr 2 focuses on ensuring the company is accountable for the algorithm it operates. The agreement states that any algorithmic decision can be challenged in Danish labour law “as if they have been made by a human", therefore ensuring the company is legally accountable for the algorithm. Secondly, Hilfr is required to provide a comprehensive explanation for automated decisions which significantly affect employees, and if Hilfr does not or cannot provide such an explanation the decision is rendered invalid. Third, on health & safety issues, workers have co-determination, a power which overrides any algorithmic instructions the workers may receive.

Hilfr 2 also prohibits the collection of data for third-party use, with all data collection needing to be justified by the company as necessary for the platform’s operations. Any worker who’s profile on the app is deleted will also be treated as a case of compulsory redundancy. The agreement also includes a mandatory template which Hilfr must use when seeking consent from each worker for data collection and processing.

One of the most interesting aspects of the agreement is a requirement for workers to have “equal and fair access to customers for all employees”, with no “direct or indirect obstacles” placed in their way. This is intended to ensure that employees and self-employed workers have the same ability to access work on the app, which could potentially restrict the use of profiling in the company’s matching algorithm (discussed further in section 1 b)).

Finally, the agreement also requires Hilfr to display 3F’s logo and a link to their website on the employee page of the platform (the 'digital clubhouse'). This link gives workers access to information about their rights, puts workers in contact with one another and even allows them to hold ballots and elect union representatives. Potentially this could significantly enhance the strength of the union in Hilfr.

The Hilfr 2 agreement in respect to algorithmic management is a landmark for collective agreements, not just in the care section of the platform economy but in the platform economy as a whole. The agreement was only signed in May 2024 so how it functions in practise will be important to monitor.

Just Eat and UGT/CCOO agreement in Spain

This agreement includes a chapter on the right to information regarding the algorithm and AI, based on the rights included in the Rider Law discussed in detail in Annex B.[34] Unions

33 A Hilfr worker is offered an employment contract automatically after they have completed 100 hours of work on the platform. They can continue to work as self-employed if they wish.
34 SIMA-FSP (2021). ‘Acta de Acuerdo’ (in Spanish).

will be informed about the use of algorithmic systems as they relate to "working conditions and access and maintenance of employment of the workers, including profiling".

This information should include the "parameters" of these AI systems as well as the "rules and instructions that feed the algorithms". The agreement also guarantees "a degree of human supervision" of the algorithm to prevent the violation of fundamental rights. Finally, there is an "Algorithm Commission" which includes employer and union representatives which oversee the implementation of the chapter. This is an impressive agreement that establishes a strong set of rights and a degree of co-determination.

However, having consulted union sources on the implementation of the agreement, the chapter on algorithmic management has not so far been used in a significant way. This is primarily because the key problems which most platform workers face around work allocation and being able to communicate with a human being are not as relevant in the context of Just Eat riders in Spain as they have employment contracts. Work allocation is directed by supervisors, not algorithms, and they can access a supervisor to speak to when they have a problem. Just Eat is considered to have the least intensive form of algorithmic management of all the main food delivery platforms operating in Spain.

That is not to say algorithmic management is not relevant in the case of Just Eat, as issues like distance for trips, geo-location and surveillance are still managed algorithmically and can still be problematic, but it is not deemed to be among the most pressing issues Just Eat workers face, and therefore there has been no role so far for the Algorithm Commission, which is yet to be constituted. Union sources consulted said they believe that over time the rights established in this agreement will become a greater priority, for instance when Just Eat updates its algorithmic management model it will be important for the union to access the data to have a complete picture of what changes have been made. However, in the present context it has not been considered a priority for union work.

It's important to note that the very fact of a collective agreement based on an employment relationship nullifies some of the most pressing problems platform workers face when it comes to algorithmic management, especially around pay and work allocation.

Beyond the platform economy

Beyond the platform economy, there have also been significant collective agreements relating to AI and algorithmic management, although they are still not the norm. A survey of European trade unions in the services sector by Friedrich Ebert Stiftung (FES) in 2024[35]

35 Simona Brunnerová, Daniela Ceccon, Barbora Holubová, Marta Kahancová, Katarína Lukáčová and Gabriele Medas (2024). 'Collective Bargaining Practices on AI and Algorithmic Management in European Services Sectors'. FES Competence Centre on the Future of Work.

identified 31 collective agreements that contain provisions relating to AI. The survey found that 69% of agreements do not have anything relating to AI in them. However, 42% of unions were engaged in discussions and negotiations on AI, even if they haven't concluded a formal agreement, while 62% believed that use of AI systems was a relevant topic for collective bargaining. When asked why a collective agreement hadn't been signed, the most common response was that AI had only just started to be discussed as an issue, while the second most common was that it was not necessary yet and they had other priorities.

UNI Europa and FES have developed a database of AI and algorithmic management provisions in collective bargaining agreements in Europe.[36] There are 23 collective agreements identified which have such provisions. The most typical item is about the right to training on new AI tools and the risks related to their usage, which is referred to 20 times, followed by employee/trade union involvement when new technologies are introduced, which is referred to 15 times. Reference to privacy/data protection legislation is in 10 agreements, as is the role of unions in data protection. Rules on the use of AI and algorithmic management tools in monitoring and surveillance are referred to just twice, one of those being the Just Eat collective agreement in Spain referred to above. What this demonstrates is that collective agreements on algorithmic management are still in their infancy, although there are already precedents to draw on.

Perhaps the most comprehensive example highlighted in the database was a 2020 agreement between IBM's German subsidiary and the Works' Council on the use of AI systems in the workplace. The agreement[37] includes that the Works' Council has co-determination rights over a new AI system introduced in the workplace and that such new technologies should be based on the following:

- Transparency in the AI system, including which input data influences which decisions
- Explainability (traceability) of the result
- Ensure human decision-making
- Establishing an AI Ethics Council and ensuring a control loop
- The AI Ethics Council conducts an evaluation of the risks, including to labour rights and the decisions taken as a result of that evaluation will be made jointly
- Factors for evaluation of the AI system includes proof of quality assurance

Like in the case of Just Eat, the IBM collective agreement shows that it is possible to negotiate the algorithm with powerful multinational companies. What that looks like exactly will depend on the specifics of the technologies which have/are being introduced and the

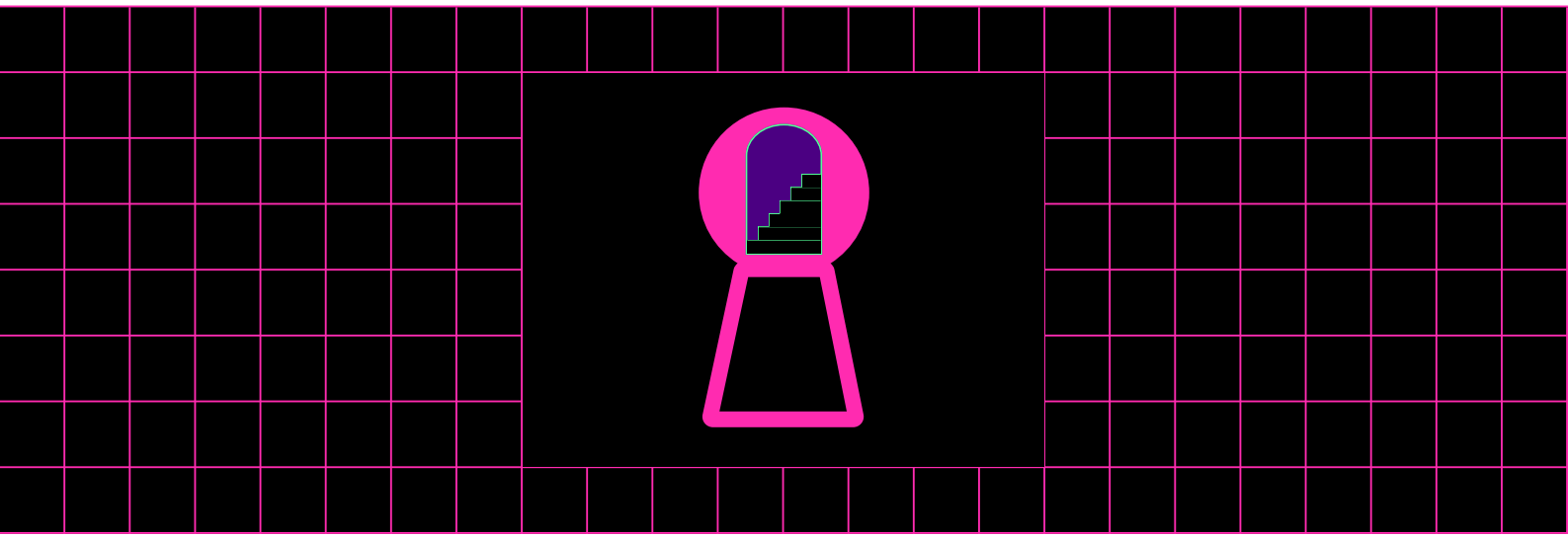
36 UNI Europa and Friedrich Ebert Stiftung (2024). 'A database of AI and algorithmic management in collective bargaining agreements'.
37 IBM and IBM workers' Works' Council (2020). 'Konzernbetriebsvereinbarung über die Einführung und den Einsatz von Systemen der Künstlichen Intelligenz / Artificial Intelligence' (in German).

balance of power between workers and management, but in both standard jobs and platform work there is a clear need for workers to regulate the use of algorithmic management systems. Collective agreements are the most full proof way to do that.

But what if the union is not yet in a position to negotiate a collective agreement, but needs access to information on how the workers are algorithmically managed in order to defend their members? And even if a collective agreement has been signed, how can unions monitor the company's use of algorithmic management systems to ensure that what has been agreed is being complied with?

This is where the need for independent data tools, which are not reliant on management, comes in, and that is what we will turn to next.

5. Opening the ‘black box’: Methodologies and case studies in using data tools



a) What do we mean by opening the ‘black box’?

The algorithms of major digital labour platforms are often referred to as a ‘black box’ due to the tendency of platforms to maintain opacity in how they work. It’s imperative for unions to open up this black box. However, accessing the algorithm should not be understood in a similar way to looking under the bonnet of a car at the mechanics of how that car is powered: the engine and so forth. The mechanics of an algorithm is the source code. But looking at the source code, while potentially valuable for a software engineer to analyse, isn’t the first priority for unions when it comes to accessing the algorithm.

What unions should be prioritising is explainability. Unions need to work out what decisions are made algorithmically which affect workers and they need an explanation for what rules the algorithm follows in processing those decisions. Everything the algorithm does has a reason behind it that can be explained, just like in standard management settings where the instructions delivered by middle managers have a reason behind them that can be explained by senior management.

Unions should never accept that there’s an excuse for a platform not to explain a decision just because it has gone through an automated or semi-automated process. Platforms cannot be allowed to hide behind a veil of technological obfuscation, and unions must avoid

getting lost in the complexity of coding and software engineering when navigating its way around algorithmic management.

Of course, if a software engineer can get their hands on the source code and offer an analysis of the plumbing of a platform's algorithm, this can be important information that can help develop a more-rounded understanding of how the company operates and can help verify whether the explanations offered by the platform are accurate or not. But platforms will not give this up easily and it shouldn't be deemed essential to challenging the company's informational dominance.

The core of what unions are trying to do is to understand what decisions have been made, how they've been made and their outcomes, as this is the transparency which can be the basis for accountability, as summarised in Figure 1 below. The goal is not transparency for transparency's sake, it is transparency as a pathway to holding the platforms' to account.

b) The fundamentals of data tools

We can think about the work that unions need to do through a structure which corresponds with the three steps in Figure 1: data recovery (access), data analysis (transparency) and data communication/action (accountability). Let's look at each in turn.

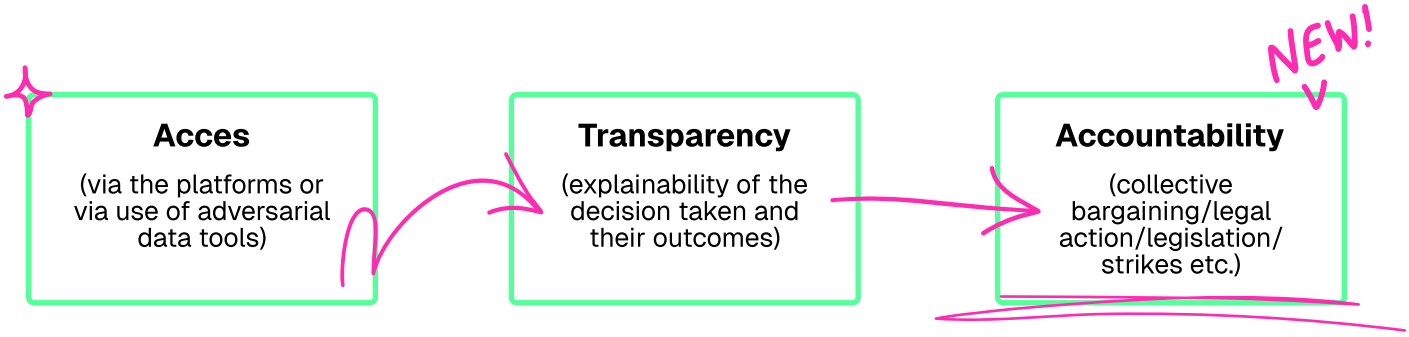


Figure 1: opening the black box to hold platforms' to account

Data recovery

The starting point is to obtain the information which workers require. If platforms hand over this data voluntarily, such as part of the terms of a collective agreement, all the better. But even in such a context, it may be useful to use independent methods of data recovery to test and verify that what the platform has provided is accurate in content and scope. Typically, platforms will not hand over this data voluntarily, and in this context independent data recovery tools and tactics are the only means of accessing this information.

The first tactic is to make **an official request for the data to the company**. On the basis of article 15 of GDPR (more on GDPR in section 3 a) above), a worker can submit a Subject Access Request (SAR) to their employer for their personal data. It's also possible to submit a Data Portability Request (DPR) on the basis of article 20 on the right to data portability. A SAR and DPR can also be submitted on behalf of someone else if you have written permission from that person that you can do so.

The range of information you are entitled to through a SAR is broad, including the categories of personal data which are processed and any existence of an automated decision-making process including profiling. The data that can be recovered through a DPR is more narrow, but the benefit is that it needs to be supplied in a machine-readable format, which is better for data analysis. It's also possible to do a combined request.

There are two main problems which workers tend to come up against with SAR and DPR. Firstly, the response of the platform is usually incomplete, as they seek to hide information under the auspices of trade secrecy and privacy considerations. The data is often not provided in a legible form, despite this being a requirement of GDPR. It is possible to appeal a SAR or DPR response to a data protection authority (DPA), which can in theory take action against platforms which do not provide adequate responses to SAR/DPR, but in practise DPAs tend to be poorly resourced and pretty toothless.

Secondly, the individual worker making the SAR/DPR can be identified by the company and potentially targeted. While it is illegal to target workers for exercising their legal rights, it is difficult to prove especially when they don't have employment contracts and, in any case, the fear of being targeted can be enough to make a worker feel like making a SAR/DPR is not worth the risk. This is where the need for the union to establish trust with workers and strength within the company is vital.

Nonetheless, SAR/DPR is an important means of obtaining data from the platforms and will become even more important when the range of information platform workers are entitled to expands significantly when the EU Platform Work Directive is passed (more information in section 3 b)). While SARs/DPRs are not difficult to do, training of union reps and organisers in the best way to submit a SAR/DPR and what to ask for would help ensure their precision. The academic project GDPoweR has done exactly this, conducting 'data recovery workshops' with platform workers. These workshops take 20 minutes per worker and once completed, the worker is then able to make a comprehensive SAR/DPR by themselves. GDPoweR has created a model template for a SAR/DPR which is open source, so any worker or union can make use of it.[38]

38 Leonard Geyer and Dirk Gillis (2024). 'Research Design Addendum I – Data requests, information letters & consent forms', pg 8. GDPoweR.

The second method is **data download portals**, which some of the big digital labour platforms provide to their drivers and riders, as well as to third parties for a fee. On these portals, it is possible to obtain basic data, such as distance travelled and the start and end time of trips, but the platforms carefully select what data to include and not include and therefore there are strict limits on what can be obtained. Also, basing data tools solely around data portals runs the risk of the platform cutting users off if they believe that data are being used to aid worker organising.

Third, there are means of obtaining workers' data which do not rely on the platforms' themselves to provide the data. These are sometimes known as **'adversarial' data tools**. The most direct is to collect the information from workers themselves via surveys. Data scraping is also possible, where data is collated from what information platforms show to the worker on the app, or live data that can be obtained for instance from Google's live traffic data. Other geolocation apps, such as Waze, Tracker Control and Apple Tracker, can also be downloaded onto a worker's app and used to collect data independently on a driver or rider's movements. Another approach in this vein is the 'sock-puppet method', which is simply gathering data through carrying out controlled tests of the platform in practise and recording the results, either from the worker or the customer end (see the case studies in section 5 c) for examples).

Also, reverse engineering (or hacking) techniques, which involve using software tools which can tap into the app on a worker's phone or computer and acquire data by that means, have been proven to offer insights into data which the platforms want to keep away from workers. There are various types of reverse engineering approaches, some of which we will highlight in section 5 c) below. The weaknesses of this method is that it usually can't be used in a court of law and if platforms realise they have security weaknesses they will try to close them, meaning there is the possibility of diminishing returns from this method over time.

All of the adversarial data tools can be very useful for verifying whether the data provided by platforms is accurate as they provide a point of comparison. But they are generally limited to a surface-level look at a worker's data: they tend to provide a snap shot, rather than the overall framework for how the algorithm operates and why.

The data recovery methods cited here work best when used in combination with one another, as the limitations of one approach are the strengths of another. Having a variety of data recovery tools available gives unions options and makes it harder for platforms to provide inaccurate and/or incomplete responses to official data requests. Finally, all of

these data recovery techniques require the participation of workers themselves to one degree or another. This is only a sustainable endeavour if workers can be convinced that it is worth their time and effort to recover their own data, and that they trust that their data will be in safe hands with the union.

Data analysis

Once the data has been recovered, it has to be analysed to understand what it all means. While some SAR responses are relatively straight forward to understand, others, especially when dealing with more complex data sets, can be very difficult for anyone who does not have - at minimum - a basic skill level in data analytics. Indeed, in one technical audit of the response to a SAR from an Uber driver in Geneva by PersonalData.IO and Hestia.AI, the authors found that it was "almost impossible" for the driver to get any meaningful information from Uber's response without the help of data specialists (see more in section 5 c) below).[39]

Of course, other data recovery techniques, such as surveys, can be straight forward from an analysis point of view. The extent of the analytical capacity required depends on the complexity of what you are trying to achieve: while there are plenty of data analytics companies offering complex and expensive data visualisations, this is not necessarily what workers need. Also, it is possible for everyone to learn data analytics skills if they have the time and guidance to do so.

All of that said, data analysis within a union structure is likely to be significantly enhanced by a layer of union organisation above the ground level to help workers, and potentially union reps and organisers as well, to make sense of data (we explore this more in section 6 c) on strategy).

However, this doesn't necessarily mean it requires university-qualified data scientists to do most data analysis work. The example of Worker Info Exchange (WIX) in the UK,[40] an organisation which contains no trained data scientists on staff but has provided data analysis and advocacy services to platform workers for many years, shows that it is possible to do most of this work without data scientists. WIX has drawn on data scientists for particular aspects of their analysis work, but the core work has been developed through years of experience grappling with it in practise, the best way to learn any skill.

39 Lemoine Guillaume, Jessica Pidoux and Jacob Gursky (2024). 'V1 – Document de travail Rapport de transparence de Uber selon demande d'accès du chauffeur professionnel à Genève : Analyse qualitative des données et faisabilité des calculs' (in French). PersonalData.io.
40 Website: https://www.workerinfoexchange.org/

Data communication/action

This is the part which unions are likely to be most comfortable with: making use of the data through legal actions, media interventions, to lobby at the political level, to present to management as part of a collective bargaining negotiation, or simply for internal use to inform the union's strategy going forward.

The crucial thing is that unions must have in mind what data they want and for what purpose from the start of the process, so that the data recovery, analysis and communication/action parts all join up together. As one data scientist said to us in the research for this report, it's imperative from a union perspective that data tools are "decision-driven": based on what decisions workers and unions are trying to make, and then what data they need - and the tools needed to get it - should flow from that.

The risk is that if it is not a decision-driven process - if there are no clear outcomes in mind from the start of a union investment in data tools - unions will waste both time and money and will demoralise workers about the value of such tools. As the data scientist also added, the key here is not the tech but strong "relationships" between the workers on-the-ground and those with specialised data expertise. If those relationships are distant and confused - or even worse, based on the interests of the data specialists rather than the workers - the outcomes are likely to be disappointing, but if they are based on a clear understanding about what workers need to know and how they can use that information, then the outcomes can be fruitful.

c) Case studies of data recovery tools 1: SARs, data scraping, download portals and sock-puppet method

How have data tools worked in practise? Starting with forms of data recovery which are primarily based around gathering data through routes which are, at least in theory, open to everyone, we take a look at some prominent case studies.

A **technical audit**[41] of the data of Guillaume Lemoine, an Uber driver in Switzerland, by PersonalData.io and Hestia.AI in 2022 provides a deep insight into the benefits and constraints in using these data recovery tools. The audit of Guillaume's data was based on a combination of multiple tools: SARs/DPRs, Uber's data download portal, information on uber.drivers.com, screenshots Guillaume had taken from the Uber app while working, and data from other geolocation apps (such as Waze) based on Guillaume's activity at work.

The audit found that the formatting and presentation of the SAR and DPR response was "more useful to an internal Uber employee than a driver". Specific issues included that the data was only given in English and used miles rather than kilometres (the standard measurement in Switzerland); that there was no clear definitions of data types and data was given in different timezones; there was data discrepancies across the different files which Uber itself provided (including over fare calculations); and Uber did not provide all the data that was requested, for example providing only the fare paid by the client rather than the amount Guillaume earned on each trip.

This highlights the difficulties in getting major platforms like Uber to comply with their obligations to release complete data in an accessible way. Uber justified not providing complete information to Guillaume on the basis that it would put the personal data of others at risk, but did not provide a risk assessment to justify this claim (as it is legally required to do under GDPR). When they took the issue to the data protection authority, the DPA claimed not to have the resources to investigate it.[42] This is the primary constraint of relying on data that platforms' themselves release: the platforms will typically make it as difficult as possible and data protection authorities are either not willing or capable of enforcing the law.

Despite these constraints, Guillaume was able to uncover significant information through a combination of data tools, though this was done with the participation of five data specialists, including a software engineer and a mathematician, over many days of work. They were able to come to an estimation of Guillaume's distance travelled, waiting time per

41 Lemoine, Pidoux and Grusky (2024):
42 Ben Wray (2022). 'Data power in the gig economy: Interview with data expert Jessica Pidoux'. Brave New Europe - The Gig Economy Project.

trip, and Uber's commission earned over a week of Guillaume's work. They also found out that Guillaume's data continued to be tracked by Uber even after he stopped using the app.

The potential value for unions in such an approach was proven when similar data recovery methods were applied to Uber drivers in Geneva in the context of a dispute over back-dated pay. A court had found in May 2022 that the drivers were employees and thus were owed back-dated pay from 2017 to 2022. Uber offered 4.6 million Swiss Francs to the drivers but this was rejected by the union, which demanded to see each individual drivers' data so they could determine the true amount they were owed. Uber provided data to the union's lawyers but it was also necessary to use the other data tools cited above as a point of comparison with what Uber had provided.

Uber drivers came to the data specialists to get an independent analysis of their data. The lead researcher, Paul Olivier-Dehaye, said that the data Uber had provided was "mostly useless", with the analysis of Dehaye's team finding wildly different results for what their back-dated pay should have been compared with what Uber had claimed.[43] The figure for each driver was based on an assessment of kilometres driven, with Dehaye finding that the drivers' had driven approximately 20% more on average than what Uber's findings had claimed. Each driver who had their data independently analysed could then take their own decision about whether to accept Uber's offer or to take their compensation case to an industrial tribunal.

This is a very concrete example of how accessing workers' data can make a difference to the wages of platform workers, and how data provided by the platforms cannot be taken at face value. However, the process to get there was not easy: it was labour-intensive for the data specialists and it took a long time and a lot of persuasion to convince the union's lawyers and the drivers that an independent data analysis would be worthwhile. This demonstrates the resistance that there can be from within unions to adopting new methods.

A second case study is that of Union Indépendants in France, which at time of writing is working on developing a data tool for its members which will show their trips and fares history by **accessing the data via APIs** (Application Programming Interfaces). Uber[44] and Deliveroo[45] are two platforms which are looking to monetise their riders' data by making it available to third parties via APIs. The risk with this approach, as with others which rely on data provided voluntarily by platforms, is that if they find that it is being used for union organising the platforms could cut the union off from the APIs.

43 Ben Wray (2023). 'In Geneva, workers are using their data to take on Uber'. The Gig Economy Project weekly newsletter.
44 Uber (2025). 'Uber Developers: Introduction to the drivers'.
45 Deliveroo (2025). 'Build with Deliveroo'.

Another approach which has been tried is the use of the **sock-puppet method**, explained in section 5 b) above. A study by TAS[46] was based around setting-up a customer account with Uber, Bolt and Cabify (the three main ridehail platforms in Spain) and making automated trip requests to track the prices, kilometres and minutes for pick-up. The aim was to find out if the platforms were price-matching. They found a moderate correlation of prices in the Andalucia region and a strong correlation of prices in the Madrid region. TAS are currently pursuing a legal action against the platforms with the competition authority on the basis of these findings, alleging price collusion.

A high-profile example of the sock-puppet method is when ridehail drivers gather together to compare the platform's trip offers in real-time against one another. The value of this is that if the drivers are in the same place and at the same time, but are being offered different rates of pay, it proves the existence of algorithmic wage discrimination (see section 1 b) for more), something Uber and Lyft deny.[47]

Ridehail drivers on the Youtube channel 'The Rideshare Guy' have conducted various experiments proving that two or more drivers are offered sometimes significantly different rates for the same trip.[48] Media group 'More Perfect Union' have also demonstrated the existence of dynamic pricing in a short documentary[49] using seven drivers with their app open and phones all on the same table. The More Perfect Union's experiment found that, in the case of Uber, 63% of the time there was a fare discrepancy between the drivers for the same trip offer

d) Data recovery tools 2: reverse engineering

Data tools which require some sort of unauthorised (though not necessarily illegal) intervention upon the platform's algorithm, either by using software to manipulate how it works or using software to expose vulnerabilities in its security to access data, come under the rubric of hacking or reverse engineering.

Adversarial auditing group Tracking Exposed in Italy conducted 'black-box testing', a form of reverse engineering that taps into the algorithm simply by downloading free software (in this case, 'Mitmproxy' and 'Frida') onto a rider's phone and tapping into the data the platform's app contains.[50] This method is limited because it only allows for information to be collected on the interaction between the algorithm and the user's phone and could not be

46 TAS (2023). 'Adversarial audit of ride-hailing platforms'.
47 Ally Schweitzer (2023). 'When your boss is an algorithm'. NPR
48 For example see, Rideshare Guy (2024). 'Uber Drivers: Same Requests DIFFERENT PAY! You Won't Believe This!'. Youtube.
49 More Perfect Union (2024). 'NEW: We put 7 Uber & Lyft drivers in one room and had them open their apps…'. X.
50 Claudio Agosti, Joanna Bronowicka, Alessandro Polidoro and Gaetano Priori (2023). 'Exercising workers' rights in algorithmic management systems'. ETUI.

used in a court of law.

However, the Italian study was able to uncover that Foodinho collected data on the rider even when they were not working, that the data was shared with third-parties, and that the platform operated an internal rider evaluation system that was not apparent to the riders: all clear breaches of GDPR.

While technical expertise is required for black-box testing, one of the advantages of this method for unions, the authors' found, was that it's "cheap" and "quick". Consequently, this is a tactic that can be easily replicable for unions, potentially carrying out such a black-box test every time the platform brings out a new version of the app (which is frequently).

"Technical analysis can be a catalyst for synergies between the efforts of enforcement agencies on the one hand, and workers' representatives on the other," the authors of the study concluded.

In Spain, TAS has conducted a 'Man in the Middle Attack' (MiMA)[51]; a hack of the data between the ride hail driver's app and Uber. MiMA identified a separation between 'normal permissions', which Uber accesses by default when the driver downloads the app, and 'sensitive permissions', which the driver has to give explicit permission for and in some versions of the Android phone are required to access Uber's app.

The normal permissions included a 'SYSTEM_ALERT_WINDOW', which allows the Uber app to be displayed on top of other apps on the driver's phone. As the name suggests, this is a system level interaction with the user's phone and therefore one which Google has recommended Android developers use as little as possible, and could potentially breach privacy requirements under GDPR. 'Sensitive permissions' include accessing a wide array of driver personal data, including the camera, using the microphone to record audio and the driver's phone contacts. It's not clear why this access is necessary for the functioning of the app or how Uber uses it.

There are many examples of hackers exploiting cybersecurity vulnerabilities in platforms', and some of them are with malign intent.[52] But for many, it is a work necessity: undocumented gig workers sometimes pay hackers a small fee to open or unlock app accounts for them, as has been reported in Spain.[53]

The world of reverse engineering is extremely large and we are only beginning to

51 TAS (2023).
52 For example see Erica Pandey (2017). 'Uber paid 20-year-old hacker to destroy data breach information'. Axios.
53 Ernesto Rodríguez Eiris. 'Las riders de Glovo recurren a hackers para crear cuentas ilegales' (in Spanish). Que!

understand its potential influence in the context of platform work. For unions, reverse engineering should be broached cautiously, only applying methods that have already been proven and are of course fully legal. It should be seen as something potentially additional to, rather than at the centre of, a union's data tools strategy.

e) Data-recovery tools 3: Counter-apps

"Counter-apps" is a term used by journalist Cory Doctorow to describe apps that are developed specifically with the purpose of helping workers to challenge the platform they are working for.[54] Counter-apps add in automated and semi-automated processes into the data recovery techniques explained above, streamlining the process and making it easy for workers to access. Or as Doctorow puts it, helping "workers seize the means of computation from their bosses."

There have been several inspiring examples around the world of counter-apps which have provided very practical help to platform workers. In the US, **UberCheats** was a counter-app from 2020 to 2022 which was an algorithm-auditing tool for UberEats riders, whereby riders could check if they had really travelled the distance which UberEats had claimed they had travelled, as this was (at the time) the basis upon which pay rates were determined.[55]

The way this data was collected was through extracting GPS co-ordinates from receipts. The app would then plug the co-ordinates into Google Maps and compare the distance given to the one Uber provided in its brief summary on the receipt. Out of 6,000 trips logged by riders all over the world on UberCheats, 17 per cent were found to be underpaid by an average of 1.35 miles per trip. The app even provided information to the riders who had been underpaid on how to make a complaint to UberEats to get the money they are owed. UberCheats proves the need for independent auditing of platforms to ensure the information they provide workers (and, indeed, customers) is accurate and to prevent the systemic under-paying of workers.

UberCheats was created by Armin Samii, a software engineer who launched the tool while riding for UberEats during time between software jobs. Samii stopped UberCheats because of the time it took him to update the app every time Uber updated its terms & conditions. This highlights the capacity challenges in developing something like UberCheats, but obviously a software engineer who was paid to work on this full or even part time (Samii did it on a voluntary basis) could maintain such a counter-app.

Another vulnerability in counter-apps is that, the more popular they become with workers,

54 Cory Doctorow (2022). 'Revenge of the Chickenized Reverse-Centaurs'. Pluralistic: Daily links from Cory Doctorow.
55 Madhumita Murgia (2024). 'The delivery rider who took on his faceless boss'. The FT.

the more platforms will try to get them taken off the app store, often with success. In 2021, UberCheats was taken down by Google after UberEats complained, before being restored again when Samii counter-complained. The big app stores are not the only places where you can download apps (it can be done on any website), but they have the biggest reach to workers.

Another example of counter-apps is **the Tuyul apps** in Indonesia which make platform work a little easier for the worker by meeting a specific need which the platform they work for refuses to meet.[56] One of these is a GPS-spoofing app for 'Gojak' food delivery couriers, the largest food delivery platform in Indonesia. The spoofing app is able to deceive Gojak's GPS system into locating the position of the rider in a place which is different from their real location. Because geo-location is a key criteria for deciding work allocation (the closer you are to the delivery point the more likely you are to be selected), Gojak can be deceived into allocating work to a rider which it (wrongly) believes to be closest to the delivery point. The value of the GPS-spoofing app is that it means riders don't have to go as close as possible to pick-up points, often endangering themselves and others through over-crowding on busy roads and junctures, in order for the app to allocate them work.

It was reported in 2021 that some Tuyal GPS-spoofing apps have had more than 500,000 downloads on Google's app store.[57] Some Tuyal apps have been banned from the app store and Gojak seeks to get them all banned, despite the fact that many of them are fixing technical problems caused by design faults in Gojak's app. Riders have to pay to access Tuyal apps, which can make their developers a lot of money, and if a rider is found to be using one by Gojak they will be immediately de-activated from the app. Gojak has also found ways to improve their cybersecurity and effectively shutdown some Tuyal apps, another potential vulnerability in the development of counter-apps.

However, Tuyal apps remain widely used and there has even developed a human infrastructure around the counter-apps called IT Jalanan ('IT of the Road') which helps riders with all their tech problems. This includes a monthly-membership which gives them access to regular support and an online forum. While this is not a model which is appropriate for unions, it is not hard to see how unions could develop similar technical and organisational capacities to IT Jalanan. This could offer significant potential in attracting platform workers to the union, as they would know that the union could help them solve their everyday problems as well as fighting to improve their terms and conditions more broadly.

StopClub in Brazil is an example of how very simple counter-apps can be very effective.[58]

56 Rida Qasri (2021). 'Delivery Drivers Are Using Grey Market Apps to Make Their Jobs Suck Less'. Vice.
57 Qasri (2021):
58 Laís Martins (2023). 'Uber hates this app that tells drivers whether it's worth picking you up'. Rest of World.

When ridehail drivers get a trip offer from the platforms, the app breaks down for them what their earnings per hour and per kilometre will be if they accept the trip. It's possible for drivers to do the same calculation in their head with the data which the platforms show them, but StopClub does it instantly, which makes it easier for them to decide whether it's economical or not to accept or reject the trip. Uber, for example, gives the drivers between just 7 to 11 seconds to decide to accept or not.

"It's as if a blindfold has been removed from our eyes," one driver said of StopClub.

As of September 2023, StopClub had a huge 250,000 users in Brazil. A counter-app so widely used could be so potent that it may even force platforms to raise pay rates to get around the problem of low trip offers being unaccepted by drivers using StopClub. Certainly, the threat of StopClub pushed Uber to try to get it closed down in July 2023 by claiming it was illegally obtaining and storing data and was violating Uber's copyright. StopClub responded by saying it does not store any data, it merely reads what Uber shows to drivers on the screen and performs a calculation. Uber lost the court case.

Finally, **Fairfare**[59] and **the Shipt Calculator**[60] are counter-apps built by the academic initiative Workers Algorithm Observatory in association with grassroots worker organisations in the US. Fairfare comes up with a 'take rate' - the commission the platform takes on each trip - for ridehail drivers who link their Uber app to the counter-app via an API. The Shipt calculator audits pay rates at delivery platform Shipt by taking screenshots taken by drivers of their pay rates and putting them into a spreadsheet via an automated process. Again, these are both simple tools which have been proven to provide useful data for worker organising.

f) Legal actions

Legal actions which require platforms to release information on algorithmic management has been the method that unions have engaged with most up to this point. As well as proving effective at times in getting hold of data, this method has the obvious value of establishing legal precedents.

The **ADCU and WIX Amsterdam Court of Appeal case** mentioned in section 3 a) highlights the potential for legal actions to clarify legislative parameters in relation to the algorithm, but it also demonstrates the major challenges in legal compliance and enforcement when dealing with powerful multi-national corporations.

59 FairFare website (2025):
60 Sarah Beckmann (2023). 'The Shipt Calculator: Crowdsourcing Gig Worker Pay Data to Audit Algorithmic Management'. MIT Media Lab.

The case related to two issues. First, four drivers who had been permanently de-activated by Uber on the basis of 'fraudulent activity'. The drivers wanted to access the personal data related to their firing. The second issue related to six drivers at Uber and three at Ola (an Indian ride hail platform) who wanted to access their personal data, including in relation to profiling, work allocation and the use of Uber's dynamic pricing system for setting pay rates.

The Court of Appeal largely found in favour of the workers. The first case was based on Article 22 of GDPR, which prevents automated decision-making, including profiling, when it "produces legal effects concerning him or her or similarly significantly affects him or her", albeit with significant opt-outs. The Court ruled that Uber must explain to the drivers all of the factors involved at arriving at that decision. The court found that there was some human involvement in the app de-activation but it was not "much more than a purely symbolic act", with the drivers given no opportunity to be heard. Furthermore, the automated decision to 'robo-fire' the workers was based on profiling of the drivers "whereby certain personal aspects of them are evaluated on the basis of that data, with the intention of analysing or predicting their job performance, reliability and behaviour."

In relation to the second case, the court found on the basis of Article 15 of GDPR on the right to access to personal data that the drivers did have the right to information relating to dynamic pricing and how profiling affected work allocation. Significantly, Uber and Ola had argued that they could not release this information on the basis of trade secrets, but the court found that this was no justification for a complete refusal to provide this information.

"The information provided should be complete enough for the data subject to understand the reasons for the decision," the court stated. "However, it also follows from that guidance that it need not necessarily be a complex explanation of the algorithms used or an exposition of the full algorithm…What matters is that Uber at least explains on the basis of what factors and what weighting of those factors Uber arrives at the ride-sharing decisions, fare decisions and average ratings, respectively, and also provides [appellant sub 1] et al with other information necessary to understand the reasons for those decisions."[61]

This provides some legal clarity as to the parameters of what right of access under Article 15 of GDPR should look like in practise.

While this verdict was clearly a major success for the workers, Uber's response to the ruling

61 Amsterdam Court of Appeal (2023):

is revealing as to the lengths Uber will go to avoid compliance. The data disclosures Uber provided to ADCU and WIX on the back of the ruling still missed lots of information, with the Appeal Court ruling that Uber had not met the requirements of the verdict and thus fined the company €6,000 a day until all the data was released in full. So far, the company has paid over €500,000 in fines.
This highlights the extent to which Uber values its algorithmic secrecy and the need for strong enforcement actions to bring powerful multinational corporations like Uber in line with the law.

The other legal case worth highlighting here relates to food delivery and was pursued by three Italian unions, **Filcams, Nidil and Filt Cgil**. In 2023, the Court of Palermo ruled that Glovo had to reveal how 'Jarvis', its work allocation system, operated. The Court rejected Glovo's claim that to provide this information would undermine the company's trade secrets. One of the trade unionist's behind the legal action, Fabio Pace, said the main objective of accessing information on how Jarvis works was to prove that the workers are really employees of the company.[62]

"The more you access information about the platforms' employment model, the clearer it becomes that workers are subordinate," Pace explained.

The document that Glovo provided to the three unions[63] shows the existence of an internal rating system, called an 'Excellence Score'. The ratings, from zero to five, affect the work allocation algorithm, with bad ratings reducing the chance riders have of accessing favourable shifts and good ratings visa-versa. Aspects which make up the Excellence Score include customer feedback, the amount of slots the rider takes up at times of high demand (which can vary week-to-week), the number of deliveries made in the previous 28 days (higher score for more deliveries); the number of times the rider books a slot and/or doesn't show up for work. Details of rules around facial ID checks, geo-location and other issues that can affect work allocation (such as distance to delivery) are also included.

The document evidences strong incentives to work at times when the platform wants, pointing to the platform exercising control and direction over the worker, i.e. subordination. Pace said that the union did not learn that much more from the document than what they had already gathered from dialogue with riders, but the value in Glovo's document was to certify this information so that it can be used to make the case for employment rights for riders, whether in court or to politicians, etc.

62 Piero Valmassoi (2023). 'Accessing the algorithm to build union power: The case of Palermo'. Brave New Europe - The Gig Economy Project.
63 The document - titled 'Informativa in materia di trasparenza ex Dlgs. 104/2022' - is not publicly available, but the ETUC has received access via trade union sources.

A further court case in Palermo based on what was revealed by Glovo's documentation on the Jarvis system deemed Glovo to be operating a work allocation system which was "discriminatory" due to the way in which the Excellence score influenced work allocation. Those who cannot work at certain times "due to personal or family conditions, age or handicap, are disadvantaged compared to competitors," the judge found. Furthermore, workers who choose to go on strike are negatively affected by the algorithm, disadvantaging those who don't turn up for work. The judge determined that Glovo must consult with the unions on a new system that does not discriminate and pay €40,000 in damages.[64]

g) Public data sharing

The final mechanism for attaining data from digital labour platforms we can examine is when government require platforms to publish data. A study on public data sharing by WIX has found[65] that Uber has provided data to 54 municipal governments in the US and Canada either voluntarily or due to regulations, but "here in Europe, almost nothing is publicly shared".

The New York case is the most established and well-known. In 2018, as part of regulations to introduce minimum pay and efficient fleet utilisation for ridehail drivers, the New York City Taxi & Limousine Commission (NYCTLC) required Uber and Lyft to release comprehensive data on their operations to the state (which traditional taxi firms have to do as well).

By analysing data on wages, the fleet utilisation rate, passenger waiting times, congestion, air pollution and more, NYCTLC can make decisions on the number of new licences to issue and the minimum pay rate based on an informed understanding of what is likely to be optimal for drivers and for residents.[66] The data is also made publicly available,[67] so anyone can access it.

There is evidence that basing regulations on public data sharing is producing positive results. For example, the WIX study found that the utilisation rate (non-waiting time) of drivers in New York was 54.9%, compared to 41% in London, where no such regulatory approach exists. NYCTLC estimated that the increase in 80,000 New York ridehail drivers' wages just a year after the minimum wage policy was introduced was worth a combined $225 million per month (almost $3,000 each).

64 Open (2023). '«Il sistema di selezione per i rider è discriminatorio»: la sentenza del Tribunale di Palermo contro Glovo' (in Italian).
65 Worker Info Exchange (2024). 'Dying for Data: How the gig economy public data deficit conceals £1.9 billion in wage theft, runaway carbon emissions, and a health & safety catastrophe'.
66 NYCTLC (2024). 'February 2024 For-Hire Vehicle License Review'.
67 NYCTLC (2025). 'Historical Trip Records'.

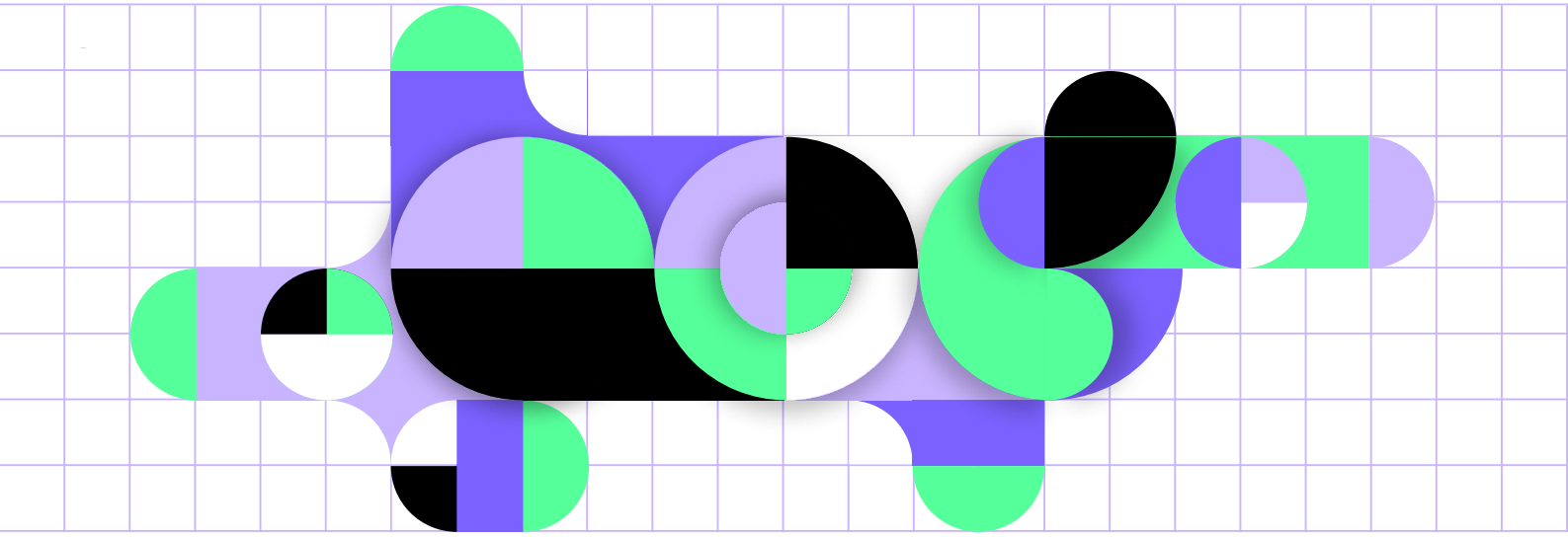
"Without data you only have anecdotes," Meera Joshi, the former head of NYCTLC, concluded.[68]

In 2019, Uber failed in a legal bid to block NYCTLC's ride hail licence cap.[69]

There is no reason why governments at local and national level in Europe could not be taking a similar approach to NYCTLC, which could open up opportunities for unions, most obviously in terms of utilising the data to push demands directly with platforms and to make political demands.

68 Carl Miller (2019). 'Uber's paradox: Gig work app traps and frees its drivers'. BBC
69 Andrew J. Hawkins (2019). 'Uber's lawsuit challenging NYC's cap on new vehicles is dismissed'. The Verge.

6. Building union capacity



a) Challenges

While building union capacity around collective agreements on data and algorithmic management is fairly straight forward (essentially a case of education), doing the same in relation to data tools is more challenging. As the above case studies illustrate, very rarely have ETUC-affiliated unions been at the forefront of innovating when it comes to the use of data tools in the platform economy.

As one 2023 study by AlgorithmWatch for the International Trade Union Confederation (ITUC) found, over 60% of trade union activity on algorithmic transparency and accountability is made up of analysis, awareness-raising and developing strategies/ principles. Just under 15% constitutes policy positions and regulatory demands, 12% is union organising and campaigning, and just under 10% is training and capacity-building.[70]

"There is an urgent need to move from principles and theoretical discussions to implementing these principles in practice," the ITUC report concluded.

In a sense, these findings are not surprising. Data tools are in their infancy and largely unproven, while unions have tried and tested methods built-up over decades, if not centuries. As is often the way with new innovations in the history of the labour movement, they often start at the fringes, where there is less to lose in testing new methods and potentially more room for creativity, before being integrated into the core.

70 Algorithm Watch (2023). 'Algorithmic transparency and accountability in the world of work: A mapping study into the activities of trade unions'. ITUC, pg 13.

To integrate these new methods into the structure of established unions in a way that they are applied with consistency to support core union activity (as opposed to simply being treated as experiments or pilots) will require significant effort and resource commitment. It will not just happen organically. As trade union officials who work specifically in the digital domain have told us in the research for this report, there are a number of challenges when it comes to building union capacity in this area:

- **Relevance:** Unions do not necessarily see the relevance of using data tools to their core work of representing members terms and conditions. Workplaces where algorithmic management is most obviously relevant, such as in the platform economy, tend to have limited unionisation and therefore attract minimal organising budgets within the union. Even where unions are organised in the platform economy, the use of data tools is not essential to what most union work has consisted of up to now: seeking to recruit platform workers to the union, win the political argument for employment status in the platform economy, and - where possible - establish collective agreements. While this report has hopefully illustrated that data tools could strengthen union work in all of these areas, it is true that it's not indispensable to doing so.

- **Employment classification:** Where data tools have the most obvious relevance under the current GDPR-led legislative framework, which is focused on individual rights, is cases where platform workers are (often bogus) self-employed, as each worker is affected differently when it comes to issues like dynamic pricing and temporary/ permanent de-activation from the app. In this context, data tools are clearly valuable in uncovering how that worker specifically is being algorithmically managed. However, self-employed workers are also the least likely to be members of unions, since European unions were designed to represent employees who have established workers' rights tied to their employment classification. For employees, while algorithmic management still remains relevant, the intensity of AM is reduced just by the very fact of having an employment contract, being paid-per-hour, and so forth.

This can be thought of as the data tools paradox: the workers which most need data tools are in the weakest position to access them. While the EU clarified in 2022 that genuine self-employed workers "in a situation comparable to workers" can access collective bargaining[71], it will take a long-time for this to translate into sizeable union organisation among this group of workers. The Platform Work Directive (see section 3 b) for more) may make it easier to address some of these challenges, but the experience of the Rider Law in Spain (see Annex B for details), which was enacted in 2021, suggests that these challenges are likely to persist once the PWD is transposed. The relevance of data tools for employees

71 The European Commission (2022). 'Antitrust: Commission adopts Guidelines on collective agreements by solo self-employed people'.

is clear in theory, but it is not tried and tested.

- **Organisational culture:** Unions are organisations that, by design, are very focused on the immediate challenges facing workers. Union organisers and representatives are generally short of time and have to carefully prioritise what is important for representing their members. As one trade union official we spoke to told us, "[data work] is another thing to do on top of everything [organisers and elected representatives] do already - it's time taken away from basic union tasks." Even allocating precious time for union training to data tools would be challenging. By way of example, at the Belgian union ACV-CSC, elected representatives get eight days of training a year for four years. There was a conflict over whether half a day could be dedicated to climate change. Dedicating training time for data tools is time taken away from something else. Finally, perhaps the biggest cultural challenge to overcome is inertia: trade-unionists who are used to an established set of proven methods are not necessarily open to learning new tricks.

- **Sustainability:** As platforms update their terms of service regularly, it is necessary not just to uncover information via data tools once, but to repeat it again and again to always have up-to-date information. Sustaining this usage over time requires dedicating a permanent part of union budgets to the staff, tech and training required to do this. Unions have significant financial constraints which mean that, although they may be able to fund a one-off pilot or spending for a specific time-limited project, dedicating a specific section of the budget to data tools over the long-term may be difficult to justify.

While the challenges identified above are real, in section 6 b) below we explain why they should not be considered insurmountable.

b) Arguments in favour

If the use of data tools in unions was only relevant to platform workers, it could potentially be argued that the costs of investment in data tools outweighs the potential benefits, given the current size and level of unionisation in the gig economy. While the platform economy is a growing phenomenon, unions have to live and operate in the present. However, it is by no means the case that data tools are only relevant in the platform economy, because algorithmic management is a much broader phenomenon.

There is a growing body of research showing the importance of algorithmic management in

standard work settings.[72] One study by the European Commission's Joint Research Centre (JRC)[73] has found that 50% of workers in Germany and 46% of workers in Spain have their working time digitally monitored, while 19% of workers in Spain have their shifts algorithmically managed compared to 11% of workers in Germany. The study considers 11% of German workers and 24% of Spanish workers to be "platformised to some extent". In a survey by FES of trade union members in Europe[74], one-third said that they were aware of algorithmic management "used in recruitment, surveillance and daily decision-making of workers' lives". An OECD employers' survey found an algorithmic management adoption rate of 79% in Europe, with most firms using three to five AM tools.[75]

In any case where 'black-box' algorithms operate in work contexts, even to a limited extent, data tools can be relevant for unions in understanding working conditions to better be able to negotiate improvements for their members. The importance of the platform economy is that it is at the bleeding edge of a broader phenomenon - algorithmic management - that has at least some relevance in 79% of companies. Moreover, it is likely to become relevant in just about every workplace in the future due to what the JRC study describes as "the relentless and pervasive digitisation of all kinds of economic processes, including labour transactions that occur within and across economic organisations".[76]

In this context, the use of data tools in the platform economy should be considered a laboratory for unions to learn methods and tactics which could also be applied across a broad swathe of workplaces which unions are organised in. If it can be proven that data tools can uncover information which is then used to negotiate an improved collective agreement at a digital labour platform, why can't a similar approach be applied to the 19% of Spanish workers who have their shifts' allocated algorithmically? Moreover, as we will explain further in section 6 c) on strategy, there need not be a Chinese wall between using data tools in the platform economy and traditional work settings where the union is organised, as long as the union's capacity is structured in such a way which makes this amenable.

It is the case that the use of data tools in relation to employees remains relatively unproven, even in the platform economy. Also, in the case of a country like Sweden, where collective agreements and collegiate relationships between unions and employers are standard, it may

72 For instance see the following three reports: Steven Rolf (2024). KI und algorithmisches Management im europäischen Dienstleistungssektor (in German). FES.,
Djurre Das, Thijmen Zoomer, Liza van Dam, Linda Kool, Paul Preenen and Wouter van der Torre (2024). 'Eigen ritme of algoritme? – Een verkenning van algoritmisch management voorbij de platformeconomie' (in Dutch). TNO / Rathenau Instituut.,
Wolfie Christl (2024). 'Managing and Monitoring Mobile Service Workers via Smartphone App'. Cracked Labs.
73 Enrique Fernandez Macias, Maria Cesira Urzi Brancati, Sally Wright, and Annarosa Pesole (2023). 'The platformisation of work'. JRC.
74 Barbora Holubová (2022). 'Algorithmic Management: Awareness, Risks and Response of the Social Partners'. FES.
75 Anna Milanez, Annikka Lemmens and Carla Ruggiu (2025). 'Algorithmic management in the workplace: New evidence from an OECD employer survey'. OECD.
76 JRC (2023)

be the case that data can be obtained from employers without recourse to adversarial data tools. But even in the Swedish case, the need to apply data analysis and to know how to action/communicate these findings is still relevant. Moreover, even in cases when employers voluntarily release data, it would require data recovery techniques to monitor and verify the completeness and accuracy of those data releases. The point is that although the usefulness of data tools may be unproven in a variety of cases, they are clearly relevant.

In terms of the challenge of organisational culture, this is not specific to the question of data tools: any change in union operations require some degree of uprooting established norms. That doesn't make the change any less necessary or important. The key is to convince trade union organisers and representatives that these tools can help them in their everyday work, that it is not just 'another task' that takes time away from their core activity, but that it can be an aid to enhance their ability to represent their members in relation to their core terms and conditions. As the survey in Annex A shows, there is clearly an appetite among union organisers and representatives engaged in the platform economy to use data tools and to learn the skills needed to help them do so.

Finally, in terms of sustainability, costs may be somewhat reduced in the platform economy once the Platform Work Directive is enacted, as Article 13 requires platforms to pay the costs of an expert of the union's choice to recover and analyse data relating to information and consultation (see section 3 b) for more). Nonetheless, costs will remain and there is always a balance to be struck between the cost of investment and the capacity that you can build. In section 6 c) we highlight possible strategies depending on the sort of investment which unions are willing to make.

c) Strategy

Unions operate within specific national contexts, with each member-state having their own labour laws and models of industrial relations. This makes developing one strategy for the whole continent challenging, but there are some significant commonalities to consider:

1. Every country in the European Union is transposing the Platform Work Directive (see section 3 b) for details) into national law over the next two years. In almost all cases, there is likely to be significant disputes between platforms and workers over employment status in which unions will play a crucial role in helping workers to make the case for employment classification. The use of data to evidence this case to governments, relevant authorities, labour inspectorates and - most probably - to judges may be crucial.

2. When the Directive is transposed, platform workers across the EU will be able to access most of the rights contained in the algorithmic management section of the Directive whether they are employed or self-employed. Again, there is likely to be significant resistance from platforms to comply with the law and the role of unions will be crucial to help workers in doing so. This section of the law is also a strategic opportunity for unions to access data, including collective data, on platforms and platform workers that they can't access or struggle to access now.

In this context, it is logical for unions to develop a plan to significantly increase their capacity to 'negotiate the algorithm' by the time PWD is transposed in late 2026, with the long-term aim of developing those capacities for the whole union, but with platform workers and the challenges and opportunities presented by PWD being the tip of the spear. In particular, the obvious first milestone for most unions should be to recover, analyse and communicate/action platform workers' data with the aim of proving that these workers are employees. The second milestone would be to negotiate a collective agreement with a platform which integrates at least some of the 'gold standard' proposals for such agreements in relation to algorithmic management identified in section 4 a) of this report.

A third milestone for a union would be to apply, in a concrete way, the knowledge and skills developed in relation to data tools and collective agreements on algorithmic management in a standard work setting, whether that be in relation to uncovering information about worker surveillance, monitoring compliance with a collective agreement or having an algorithmic management chapter included within a new collective agreement.

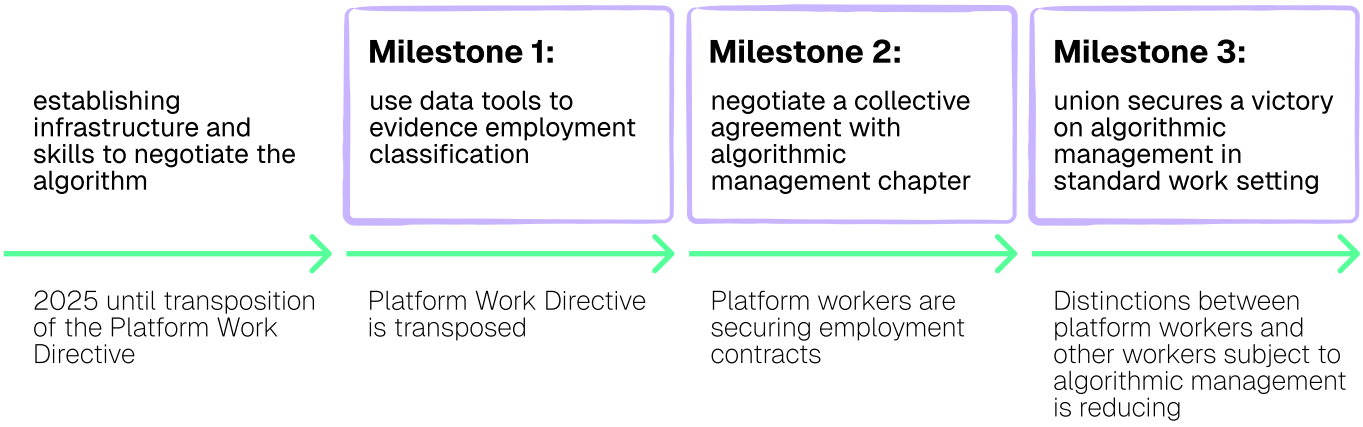


Figure 2: Strategic milestones for unions in negotiating the algorithm

Of course, there are numerous other smaller objectives which unions can and will identify along the way depending on their specific circumstances, but the strategic milestones outlined in Figure 2 may provide some unions with an overall framework for how to think about developing their capacities in this area in coming years.

However, none of this can be done without a plan for unions to grow their technical and organisational capacity in this area, which we will turn to next.

Capacity-building

Unions should be aiming to build capacity that can sustain activity in this area over the long-term, accumulating institutional know-how over time about what works and what doesn't.

First, union representatives and organisers should be supported by union training programmes to develop their basic knowledge and skills in negotiating the algorithm. Organisers and reps should learn the following as a minimum:

- What data, algorithms and algorithmic management are
- What are the specific risks of algorithmic management for workers and unions
- What rights workers have in relation to data and algorithmic management
- Why accessing and analysing workers' data can be valuable for unions
- What data tools can be used for accessing workers' data
- What demands unions should make in relation to workers' data and algorithmic management practices
- The basic practical skills in data recovery, analysis and communication/action

Importantly, this training should not be restricted only to organisers and representatives in the platform economy. To get buy-in from the union as a whole, it's crucial that any representative and organiser in a section of the economy where algorithmic management practices are used should receive training. Training courses should be designed for all forms of algorithmic management.

As Christina Colclough and Merko Herberg have proposed in a paper on the digital transformation of unions for Friedrich Ebert Stiftung,[77] unions may also want to consider establishing "a new cohort" of union representatives with a specific mandate on data and algorithmic management, which they call "**DigiReps**". The DigiReps would be dedicated to holding management account for data practices and have specific knowledge in relation to

77 Christina Colclough and Merko Herberg (2022). 'Your Digital Union'. FES.

the data and algorithmic management chapter of collective agreements. This could provide specific focus to work in this area on-the-ground.

Secondly, unions should develop an in-house team, or a department, which can be across all work in the union in relation to data. Ideally, this would include someone with specific expertise in data analysis who could act as the technical specialist in the union on data issues, but if this is not possible from a resource perspective then at least staff who have a passion for data-related issues and who are dedicated to building their own knowledge of this area over the long-term.

The remit for this leadership team should include, but go significantly beyond, that of a data protection officer, which most unions have in place currently but have a very limited remit. Some unions already have the potential framework for such a department, such as the CGIL union in Italy, which has an "Office on Industry 4.0" that has responsibility for initiatives relating to data and algorithmic management.[78]

This in-house team would be able to work with/contract outside expertise on a case-by-case basis, whether that be academics or specialists from data analytics firms. Indeed, in relation to accessing data in the context of the information and consultation rights under article 13 of the Platform Work Directive (see section 3 b) for more), it would be necessary to have project-based fees for data experts in order to invoice the platforms to pay for it, lending itself to outsourcing.

However, what is crucial is that any outsourcing is done in a way that retains knowledge internally in the union, rather than that knowledge developed from each project being lost, and thus having to constantly reinvent the wheel. As one union researcher who has experience with outsourcing data expertise put it to us in the research for this report, the approach should be "like Chinese industrial policy", which in the 1980s and 1990s was known for bringing in western technological expertise but ensuring that it was the Chinese state and Chinese companies that reaped the knowledge from external experts.

The risk with outsourcing without having internal capacity is not only that no institutional know-how is accumulated, but also that there is no clear criteria of what the union wants from external experts, who then use the funding to go off on their own tangents, rather than focusing on meeting the specific needs of the union, i.e. representing their members. An in-house team's purpose would be to deliver tangible outcomes for the union - whether it be recruitment, negotiating better conditions or political lobbying - through the use of data

78 CGIL (2021). 'Progetto Lavoro 4.0'.

tools and through their know-how of what should be included in collective bargaining negotiations.

One other approach which is worth considering is creating a union-sponsored organisation at European level which is specifically established to help unions with data issues. This organisation would be able to obtain the project-based fees explained above as they would be the go-to organisation for unions, therefore avoiding having to go to private sector data analytics firms, which could be hit and miss.

With the combination of well-trained organisers and reps, and an in-house team that can guide data work as a whole, has data analytical skills and can bring in technical expertise from outside when needed, the union can develop a clear division of labour around negotiating the algorithm: tasks that require the least specialist expertise, for example submitting a SAR/DPR, can be conducted at the level of organisers and reps, whereas the more complex tasks, such as data analysis of SAR/DPR, can be conducted by the in-house team.

Furthermore, the in-house team could also be responsible for internal union data, which can also be a very useful source of information for unions in developing their capacities, if properly handled. Consideration should also be given to how data recovery tools could be integrated into the broader digital organising methods of the union, so that the tools are as accessible as possible. Many unions now have at least some of their internal organising methods digitised, through use of tools like 'WorkIt'[79] and 'UnionBase'[80], and therefore it's logical that the information on the various methodologies and tactics available to reps and organisers in relation to data and algorithmic management are available through whatever digital tools unions are using.

Another important role for an in-house data team would be to develop specific expertise in what to include on data and algorithmic management in collective agreements across the full range of sectors. This expert knowledge could mean dedicated support could be provided for collective bargaining negotiations, possibly including even having a data expert in the room during negotiations on data issues to help the union negotiating team.

The risk with a specific in-house team for data is that the issue becomes siloed, placed in a box called 'data transparency' and ignored by those that are fighting the day-to-day struggles in each sector. The ideal scenario is that union leaders for each sector see the in-house team as a resource that they can draw upon when they have a data-related problem that needs solved.

79 Workit Labs (2025)
80 UnionBase (2025)

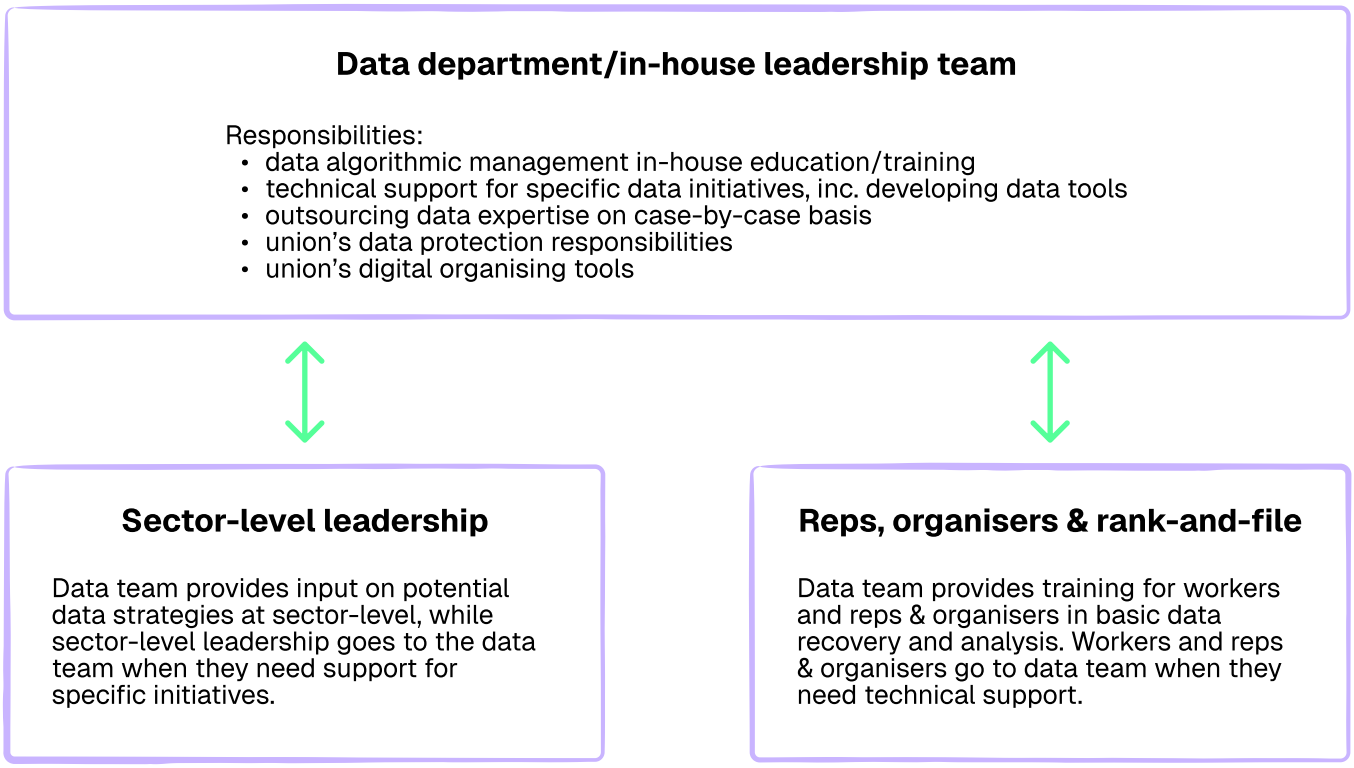


Figure 3: WHAT UNION CAPACITY IN DATA AND ALGORITHMIC MANAGEMENT COULD LOOK LIKE

If, for example, in the health sector there is concern about the surveillance of workers and the representatives and organisers have doubts about the information that the health bosses are providing them, they could go to the in-house team and discuss what data tools would be best to use to develop an independent analysis of data surveillance of healthcare workers and help them to do that. But that would require agency on the part of union organisers and representatives in the healthcare sector to know what they are looking for and make that request from the in-house team, which brings us back to why training across the union in data work is so crucial. The sort of union capacity we envisage is summarised in Figure 3 above.

Investment

What sort of investment would be capable of delivering the sort of capacity imagined in Figure 3? As figure 4 below shows, there is a sliding scale between the level of investment required and the sort of capacity that can be developed.

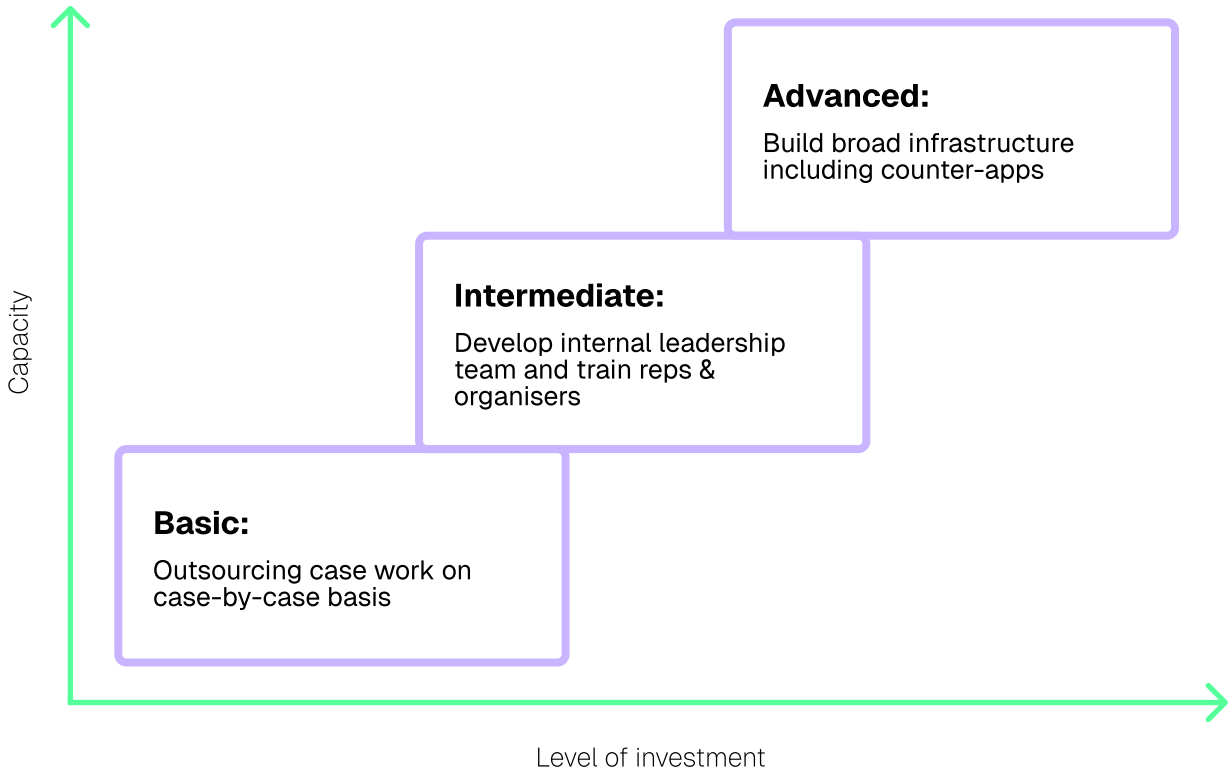


Figure 4: DATA TOOLS CAPACITY VERSUS INVESTMENT

To go through all three levels in more detail:

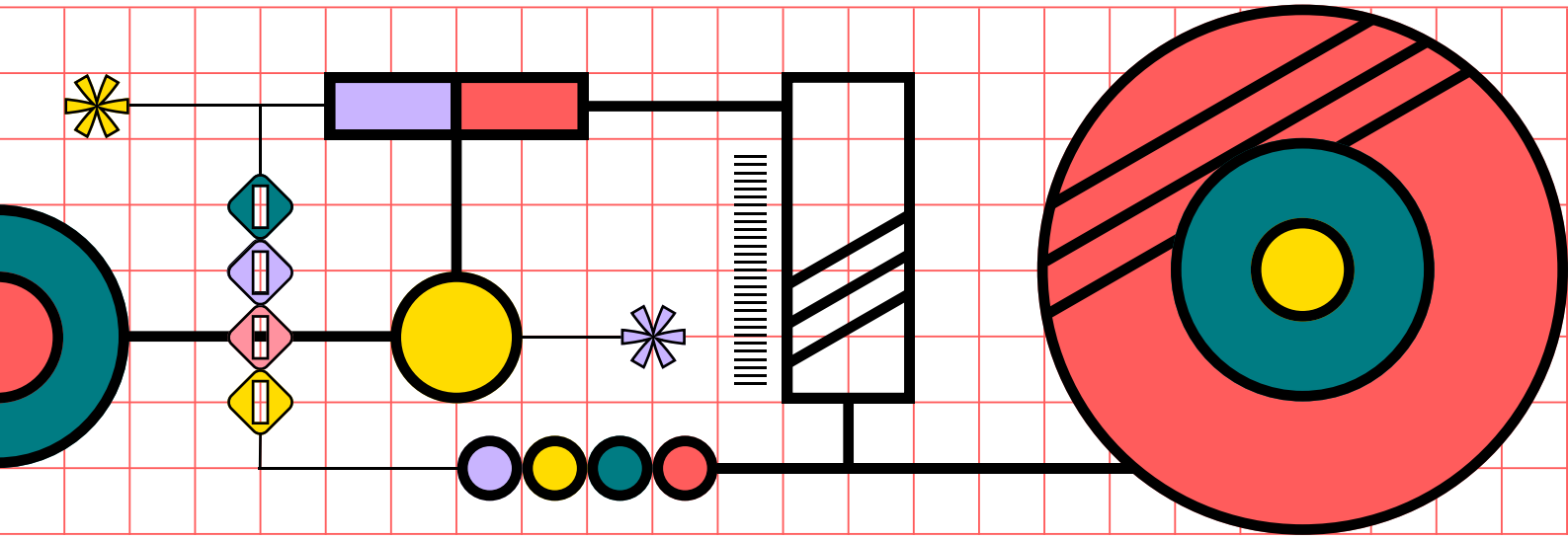
Basic: This level could be considered as a reactive approach to negotiating the algorithm, seeking to address problems facing members only as and when they arise and with no systematic training or overarching leadership structure. This is likely to be the cheapest approach but operating at this basic level means there is likely to be little accumulation of knowledge and capacity over time within the union and therefore the risk is that opportunities that the union could have taken advantage of will be missed.

Intermediate: This level would enable a union to have internal capacity on a permanent basis, allowing for some pro-active interventions at the most opportune moments. Capacities would be established at two levels: firstly, training provided so that reps and organisers develop basic skills, giving them greater agency in identifying problems and acting on them. Secondly, an in-house team with an overarching perspective and strong analytics capacity. Even if this team was made up of just one person, it would allow for this person at a minimum to act as a permanent liaison between the organising on the ground and technical experts, who could be outsourced on a project basis, building accumulated knowledge and best practice over time.

Advanced: This level would aim for developing an internal infrastructure which would allow the union to be fully operational when it comes to negotiating the algorithm. This would include a leadership team with technical experts hired internally, able to put in place sector and company-level strategies for addressing algorithmic management, as well as legal and political interventions, developing research and liaising with academics and other industry experts on the latest developments. This team could work on developing counter-apps (see section 5 e) for more) owned by the union, aiding workers directly and acting as a union recruitment tool. Reps and organisers would be equipped with digital organising tools integrating work around algorithmic management with other aspects of union work. Training across the union, not just platform workers, would allow all sectors to be able to identify and tackle algorithmic management practices in the workplace. This would unquestionably be the most expensive approach because the hiring of technical experts internally would be costly, but there is the potential for costs to be recouped through the increased recruitment and retention of members, as such high-level capacity could deliver real results in terms of improving workers' terms and conditions.

A final strategic consideration when it comes to investment is economies of scale. When developing technological capacities and hiring specialised data expertise, centralisation can reduce costs. It may be worth considering developing capacities cross-union within a country, or even through a confederal body like ETUC, if a union or multiple unions feel like they cannot afford to go it alone. The major disadvantage of this approach is that union organisation takes place largely at a union-by-union level, and therefore developing data capacities cross-union or on a confederal basis would make it hard to integrate this work into the every-day operations of each union.

7. Conclusion



This report has sought to demonstrate that algorithmic management carries specific risks for workers which require specific responses from unions in order to combat them. Those responses should be seen as additional and complementary to traditional union organising methods: this is not about re-inventing the wheel, it's about adding on new spokes.

Data recovery and analysis , when done well, will strengthen the power of unions and workers by providing them with more and better information to make informed decisions. This is relevant for the platform economy and beyond : any worker who is subject to digital monitoring and/or algorithmic management by their bosses has an interest in knowing what management knows about them and their work. Reducing the information asymmetry between management and workers is one mechanism workers have to increase trade union power.

There is no question that having knowledge and skills in data is an investment, and like all investments it comes at the cost of time and money. But this cost needs to be set against what will be lost by unions if they make the choice to ignore the data revolution: as data becomes an ever more pervasive part of the labour process, workers will rightly expect that organisations seeking to represent their interests will have an understanding of how it works, what the risks are, what the solutions are and how to practically go about challenging management's domination of their data. Going without this capacity runs the risk of unions losing relevance.

The collective agreements at Hilfr in Denmark and Just Eat in Spain cited in section 4 show that it is possible to ‘negotiate the algorithm’ in the platform economy. The case studies cited in section 5 show that even when platforms won’t come to the negotiating table, workers can access, analyse and make use of data to defend their interests effectively. None of this is in the realms of ‘the future of work’: algorithmic management is the here and now, and the knowledge, skills and tools to negotiate the algorithm exist today. Now it is up to trade unions to grasp the opportunity.

Annex A:

‘Negotiating the Algorithm’ survey response from ETUC-affiliated trade unionists in the platform economy

There were 37 survey responses in total.

Section 1: Knowledge

1. How would you assess your knowledge of algorithmic management? 0 to 3, 0 being not at all and 3 a lot.

0 = 3
1 = 5
2 = 22
3 = 4

Analysis: Generally the respondents to the survey were from people who work in the field of platform work and/or algorithmic management (AM) more broadly, therefore the familiarity was very strong. A number of respondents had worked on research projects and/or legal cases on the subject, showing that there is activity going on around this subject. Some trade union organisers said they knew about AM in terms of its practical effects but not from the technical side.

Highlight quote: “As a researcher, I am active in a campaign to organise riders and drivers. In that sense, I am aware of how algorithmic management works, but I do not know exactly how the algorithms are put together.”

2. Have you encountered examples of how algorithmic management can negatively affect platform workers?

Yes = 31
No = 6

Analysis: Wide variety of examples were used to demonstrate negative affects, highlighting the multiplicity of ways in which workers can suffer from algorithmic management. Some points mentioned include: inaccurate data processing, increase in work intensity and stress, inaccurate measurements of work performance, unfair dismissals/deactivations, unfair work allocation, unfair setting of pay rates, difficulty to communicate with a human manager, problems with facial recognition technology, loss of worker autonomy, transferring risk from the company to the worker, behavioural nudging even when they are not working, and transparency issues.

Highlight quote: "We have encountered situations of [platforms] negatively assessing [the] performance of workers based on flawed/incorrect processing of data that resulted in [their] firing."

3. Do you know what types of data platforms collect that are relevant to the algorithmic management of workers?

Yes = 22
No = 15

Analysis: For those who did know about data types, around half were able to cite a wide variety of data types, including specific performance metrics and sometimes technical language of data profiles (such as 'Timestamp'), while the other half gave more vague answers (such as 'work performance'). Some of those who answered 'No' said they did know some of the data collected but suspected that there was much more collected than they knew.

Highlight quote: "Geo-location, time of log-in and log-off, time of delivery, type of transport, acceptance and completion rate, age, sex, experience..."

4. How aware are you of the European Platform Work Directive (PWD)? 0 to 3, 0 being not at all and 3 a lot.

0 = 2
1 = 4
2 = 17
3 = 14

4 b. Are you/your organisation informed on the algorithmic management provisions in the European Platform Work Directive? 0 to 3, 0 being not at all and 3 a lot.

0 = 2
1 = 10
2 = 12
3 = 14

Analysis: Clearly there is a strong knowledge of the Platform Work Directive, although knowledge of the algorithmic management section specifically is somewhat weaker.

4 c. Based on your answers to 4 a) and 4 b) please offer a brief assessment of how prepared you/your organisation feel for the PWD being transposed into national law in your country over the next two years.

Analysis: There was a mixed response. Some unions have had meetings and even established a task force for the transposition of PWD and are confident, while others say nothing has been done and there is little interest to do anything. In the Scandinavian countries, there was a universal view that transposition would be complex due to the interaction of the law with national laws/conventions, where issues are usually decided via collective bargaining. Some respondents raised question marks about whether union focus should be on transposition or on the application of the law, since laws are not always properly enforced once they are introduced.

Highlight quote: "We are generally prepared as we are involved in a process of lobbying our government for a pro-worker implementation. It should be noted though that we lack specialised knowledge or access to experts as well as data about algorithmic management in companies other than our own."

5. How well do you know the General Data Protection Regulation (GDPR)? 0 to 3, 0 being not at all and 3 a lot.

0 = 1
1 = 6
2 = 19
3 = 11

5a. Do you use GDPR at your work in relation to the protection of workers' rights and trade union organising?

Yes = 27
No = 10

Analysis: There was a wide variety of responses to this. Some people said they mainly have to challenge employers citing GDPR as a reason not to provide the union with information. Some said they refer to GDPR for internal union data purposes and risk assessments. Others use it in the context of collective bargaining negotiations. Nine respondents said they use it to get information out of the platforms on their workers and/or to contest decisions by the platforms on the basis that they have been in breach of GDPR.

Highlight quote: "Our primary focus is on leveraging GDPR to promote transparency, obtain data, and understand how algorithms affect workers. This is crucial in uncovering how algorithmic management operates, particularly when companies are not forthcoming about their practices."

6. How well do you know Subject Access Request? 0 to 3, 0 being not at all and 3 a lot.

0 = 10
1 = 8
2 = 11
3 = 8

6a. Have you ever submitted a Subject Access Request or helped another worker to submit a Subject Access Request to the company they work for?

Yes = 9
No = 28

6b. Have you ever analysed a company's response to a Subject Access Request?

Yes = 8
No = 29

Analysis: It's clear from the responses to question 6 that a quarter of the respondents are already engaged in using SARs for the purposes of accessing data on platform workers.

7. Have you ever used platform workers' data, either your own or someone else's, as part of an initiative to defend platform workers (an initiative could be a press release, a court case, a protest, etc)?

Yes = 12
No = 25

Analysis: Respondents who answered 'Yes' said they had used platform workers' data for negotiating collective agreements, for court cases, to present to the media, in campaigns challenging the platform, to raise concerns with the platform's management in relation to case work, for educating workers', to recruit workers to the union, and even to write a book!

Highlight quote: "All our Dutch court cases (Deliveroo, Uber, Temper, Helpling) are supported by data collected from the workers or their apps."

Section 2: Participation

8. How important is it for trade union organising purposes to access and analyse the data which platforms use for algorithmic management?

0 = 0
1 = 3
2 = 8
3 = 26

Analysis: Clear that the respondents believe this is very important.

9. How well is your union currently prepared for 'negotiating the algorithm' at an organisational level? 0 to 3, 0 being not at all and 3 a lot.

0 = 4,
1 = 19
2 = 12
3 = 2

Analysis: Most felt like they were not well prepared to negotiate the algorithm either because their knowledge level was not sufficient, they did not have the internal capacity and resources yet to do so, or because they didn't think it was relevant enough yet as an issue for collective bargaining. Interestingly, some conceptualised 'negotiating the algorithm' as a political and regulatory question, rather than an industrial relations one.

Highlight quote: "We lack the personnel, know-how and resources to negotiate algorithmic management [beyond] big sector-wide collective agreements."

10. How relevant would a union-organised training course on 'negotiating the algorithm' be to you? 0 to 3, 0 being not at all and 3 a lot.

0 = 0
1 = 7
2 = 8
3 = 21

Analysis: Evident that most trade unionists working in this field think union-organised training would be helpful to them.

10a. What do you think would be most important for you to learn at such a training course?

Analysis: Two responses were most typical: 1) The importance of real world case studies to learn best practise and have a template to work from, and 2) the technical aspects of how to retrieve, analyse and make use of data. Others said they wanted to know about how to negotiate collective agreements on AM, and there were some who thought the most important thing was to learn about the regulatory aspects of the Platform Work Directive.

Highlight quote: "Templates and practical examples of how unions have obtained the data that has led to changes being implemented in a good way for workers. Also templates for risk assessments".

11. What extent do you think platform workers are interested in the data that is collected on them at work? 0 to 3, 0 being not at all and 3 a lot.

0 = 2
1 = 12
2 = 13
3 = 10

Analysis: A lot of respondents said that most workers were interested only when they are negatively affected by it, especially when they are deactivated from the app. Generally, it's only when workers are shown why it affects their terms and conditions when they become interested in challenging the platform's domination of their data. Some said that workers had a theoretical interest in their privacy, what is collected on them and how the algorithm works but that it wasn't necessarily something they would be willing to take action on nor is a top priority.

Highlight quote: "I think they are not that interested in the data itself. Only if we can show what the data can do for them and what analysis you can do with it, some of the platform workers will be interested in it. But I think they need help with that."

Annex B:

The algorithmic management section of the ‘Rider Law’ in Spain

Spain remains the only country in the European Union which has already established its own laws on the collective right of workers and their representatives to transparency in relation to algorithmic management. This law was introduced in 2021 as part of what has commonly been known as the ‘Rider Law’,[81] which established a legal presumption of employment for workers in the food delivery sector (also a first in Europe). However, the section of this law relating to algorithmic management does not only pertain to food delivery couriers: all businesses which use algorithms in the management of employees must abide by it (platforms or not).

Specifically, the reform updated article 64 of the Workers’ Statute so that workers and their representatives can “be informed by the company of the parameters, rules and instructions on which the algorithms of artificial intelligence systems are based, that affect decisions that may affect working conditions, access to and maintenance of employment, including profiling”. The Minister of Labour, Yolanda Díaz, said that this reform was designed for “the neutralisation of algorithmic punishments, performance penalties and bias”[82].

However, over three years since the reform to the Workers’ Statute was introduced, there are few publicised examples of the law being used by unions to good effect in the platform economy. Having consulted union sources, we have identified the following reasons for this:

Bogus self-employment: The rights can only be accessed if the workers are employees of the company, but despite the Rider Law, Glovo has refused to employ 90% of its food delivery couriers, while Uber Eats has a mixed model of (sub-contracted) employees and self-employed riders. Out of the big food delivery platforms, only Just Eat (the third largest) employs all of its riders. Bogus self-employment has therefore been a significant block on using this law in the food delivery sector, although Glovo and Uber Eats are now transitioning to a full employment model so that may soon change.[83]

81 Spanish Government (2021). ’Disposición 15767 del BOE núm. 233 de 2021’ (in Spanish).
82 El Salto (2023). ‘Uber, Cabify y Bolt sortean las leyes de competencia para perjudicar al trabajador’ (in Spanish).
83 Javier Romera (2024). ’Glovo contratará por primera vez a sus repartidores para evitar que su CEO vaya a prisión’ (in Spanish). El Economista.

Not prioritised: In the case of Just Eat riders, they have been subject to a collective agreement in place with UGT and the other big Spanish union, CCOO, which does include a chapter on algorithmic management, which we examine in detail in section 4 b). Here, it is sufficient to say that the collective agreement does guarantee important algorithmic rights for workers, but unions have so far not prioritised the issue and thus have not maximised the possibilities of the agreement.

Inadequate responses: The responses unions have had from platforms to requests for information have been deemed to be incomplete and insufficient. For instance, a CCOO union request to Glovo Market, the company's grocery delivery division which does employ its riders, received the response from the company that customer evaluations of riders have no impact on the algorithmic management of the riders, an answer which seems highly implausible given what we know about Glovo's 'Jarvis' algorithmic management system.

Unions have consulted the labour inspectorate about the problems they have had with the responses from companies (including some outside of the platform economy which have refused to give any information) and the labour inspectorate is at time of writing looking into a possible compliance investigation. Union sources indicated that it will be necessary to take an inadequate platform response to a request for information to court in order to establish legal jurisprudence over what a complete response should look like, but this is not something that has been deemed a priority to pursue yet.

Lack of education/training: A study by the 'Observatorio de Trabajo, Algoritmo y Sociedad' (TAS) in 2023[84] identified a lack of education and understanding of the potential value of this information for workers. The Spanish Government produced a guide[85] to try to address this problem in 2022, which has helped provide vital information to trade-unions about what information can be accessed and how. This document has been widely circulated among union representatives in the platform economy and has been used as the basis for writing information requests to some companies, showing such guides can have educational value. However, there has been concerns that the guide's guidance is too general and more specific instruction is needed to make use of the law in specific contexts.

At time of writing, TAS is working with Amazon warehouse workers in the CGT union on accessing algorithmic information. In the first attempt at data access, CGT representatives received a response which was deemed to be inadequate. The CGT representative who received the response posed a number of questions which are illustrative of the issues those on the ground face in trying to recover data from companies:

84 Nuria Soto, Felipe Corredor and Felipe Diez (2023). 'Informe Seguimiento "Ley Rider" (in Spanish). TAS
85 Spanish Labour Ministry (2022). 'Información algorítmica en el ámbito laboral' (in Spanish).

"Who is qualified to interpret this information? How is it possible to contrast or know if the information provided is complete, true or correct? What process can be triggered in case of that companies provide information in a partial or misleading way?"

Conclusion

The experience of accessing the algorithmic rights contained in the Spanish Rider Law is a cautionary tale. Firstly, the workers which have most pressing need for algorithmic information are those that are (bogus) self-employed, since they are subject to the most intensive forms of algorithmic management. But it is these workers who have been unable to access the law precisely because they are self-employed. For employees in the platform economy, while algorithmic management still exists, the very act of being an employee reduces the importance of the algorithm for their terms and conditions, most obviously because their pay becomes an hourly rate rather than pay-per-task. This is a contradiction that will also be relevant in the context of the Platform Work Directive, although (at least in theory) the self-employed will be able to access most of the provisions of the PWD (see section 3 b) for details).

Secondly, the Spanish case shows that without training and infrastructure, legislation alone is not likely to move unions and workers into action in terms of accessing their algorithmic rights. Even with the production of a government guide to support these efforts, more specific efforts are required so that trade unionists with heavy workloads and urgent priorities have the capacity to access algorithmic information and the understanding of its potential utility for their struggle.

Finally, a lack of compliance on the behalf of companies, and a lack of clarity about what a complete response to a request for information should look like, has impeded the efforts that have been made so far to access information. The need for clear enforcement and compliance measure, with strong penalties for non-compliance, has also been illustrated by the experience of the Spanish law so far. Also, union sources emphasised the value of collective agreements as an enforcement measure, even when the collective agreement does little more than re-capitulate what is in the law. Simply by writing it into a collective agreement, the onus is placed on companies to put measures in place which ensure compliance.

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