RESHAPING WORK

NAVIGATING DIVERSE FORMS OF WORK:
How to Advance Decent and Fair Work

Output of the Reshaping Work Dialogue Project

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LIST OF ABBREVIATIONS

AI	Artificial intelligence
CB	Collective bargaining
CBA	Collective bargaining agreement
CFDT	French Democratic Confederation of Labour (French: Confédération Française Démocratique du Travail)
Cedefop	European Centre for the Development of Vocational Training
CGIL	Italian General Confederation of Labour
CISL	Italian Confederation of Trade Unions
CJEU	Court of Justice of the European Union
DFW	Diverse forms of work/employment
GMB	General Municipal Boilermakers (British Trade Union)
FNV	Federation of Dutch Trade Unions (Dutch: Federatie Nederlandse Vakbeweging)
GDPR	General Data Protection Regulation
OECD	Organisation for Economic Cooperation and Development
EIGE	European Institute for Gender Equality
ETF	European Training Foundation
ETUC	European Trade Union Confederation
EPSR	European Pillar of Social Rights
ESCO	European Skills, Competences, Qualifications and Occupations
EU	European Union
Eurofond	European Foundation for the Improvement of Living and Working Conditions
ETF	European Training Foundation
ILA	Individual learning accounts
ILO	International Labor Organization
IR	Industrial relations
JMI	Job market intelligence
LMI	Labour market intelligence
MB	Member States (within European Union)
MOOC	Massive open online course

P2B	Platform to business
PPP	Public-private partnership
SOC	Standard Occupation Classification
TFEU	Treaty on Functioning of the European Union
TRADE	Economically Dependent Self-Employed Workers
	(Spanish: Trabajadores Autónomos Económicamente Dependientes)
TU	Trade union
UGL	General Labour Union
	(Italian: Unione Generale del Lavoro)
UIL	Italian Labour Union
	(Italian: Unione Italiana del Lavoro)
UK	United Kingdom of Great Britain and Northern Ireland
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational education and training

DEFINITIONS OF KEY TERMS

Algorithms — a computer program that follows rules to take an input, perform operations, and return an output.

Algorithmic management — a set of technological tools and practices that use data as an input in order to remotely manage (and surveil) a workforce as well as enable (fully or semi) automated decision-making.

Digital labour platforms — companies that connect users for exchange of services through electronic means, whereby the matching happens online while the execution of tasks may happen on-location or online.

Diverse forms of work — an umbrella term that covers all sorts of working arrangements that go beyond full-time, open-ended contracts; also referred to as non-standard, atypical, or new forms of employment.

Micro-credentials — "a proof of the learning outcomes that a learner has acquired following a short learning experience. These learning outcomes have been assessed against transparent standards." (European Commission, 2020b, p. 10).

Multihoming — it is understood as behavior that exists on both sides of the platform: service providers (e.g., platform workers) may offer services on more than one platform, and consumers can purchase services on multiple platforms.

Online platform work — a subset of diverse forms of work that includes the provision of a digital service (e.g., graphic design, software development, translation) at the request of the recipient of the service via digital labour platforms that can be performed anywhere in the world.

On-location platform work - it refers to work where matching of tasks happens online via a digital platform, while the execution of tasks requires physical proximity (e.g., delivery, ride-hailing, cleaning); also referred to as on-demand work.

Social protection - "the set of public measures that a society provides for its members to protect them against economic and social distress caused by the absence or a substantial reduction of income from work as a result of various contingencies (sickness, maternity, employment injury, unemployment, invalidity, old age or death of the breadwinner), the provision of health care and the provision of benefits for families with children." (ILO, 2004, p. 2).

Worker - an individual performing work, whether in a full-time, open-ended employment contract, or in a diverse form of work.
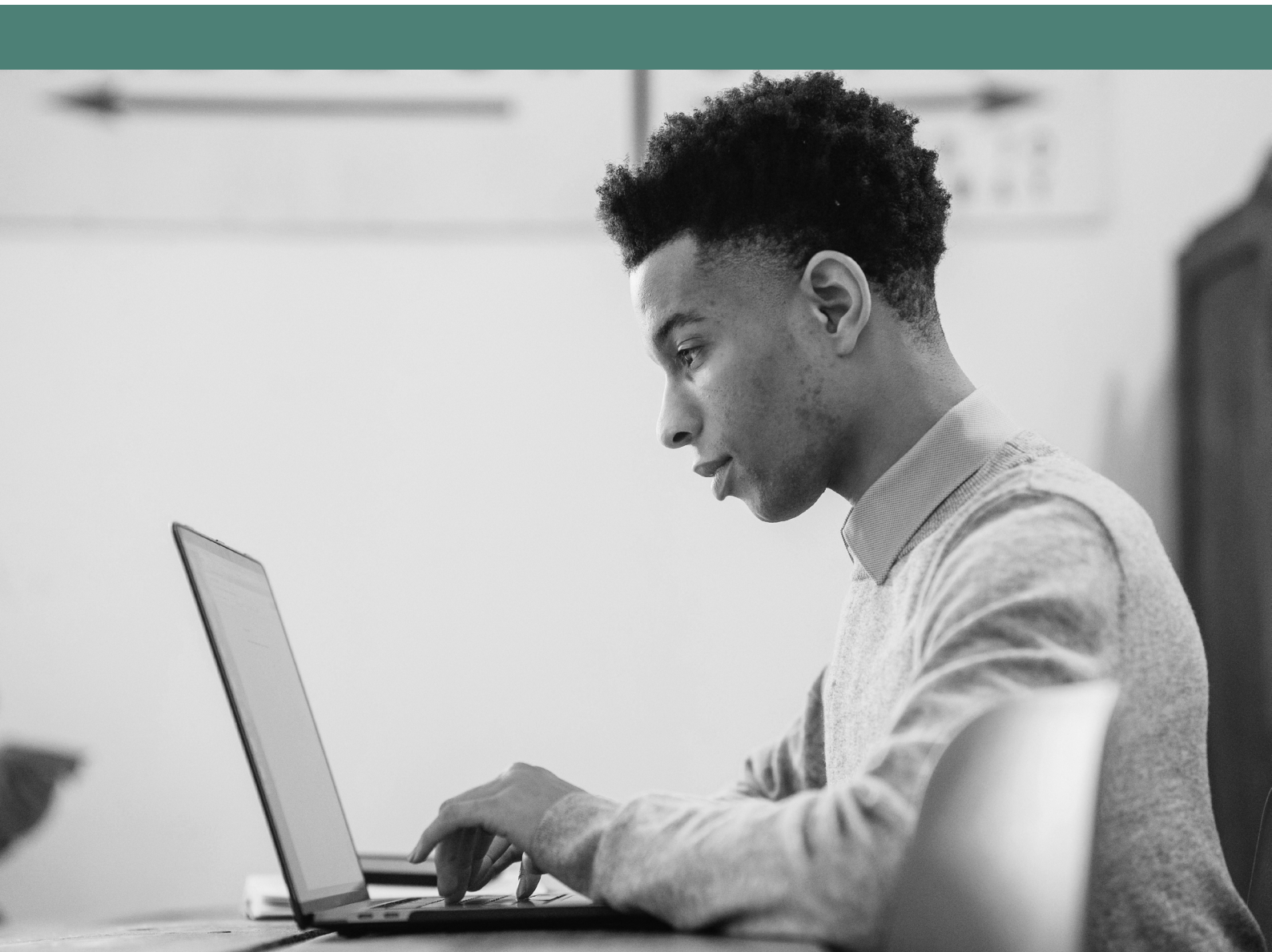
Executive Summary

Data is becoming a key asset for companies and workers.

Striking a balance between fair and decent working conditions and unlocking the innovative potential of DFW is a key challenge ahead for policy makers.

The road towards ensuring such working conditions requires input from various stakeholders, such as companies, startups, unions, research institutions, and advocacy groups.

The European economies and labour markets are undergoing an unprecedented digital transformation that has accelerated the rise of diverse (non-standard, new) forms of work (DFW). While the labour market transformation has been underway for decades, rapid technological advancements and, more recently, the COVID-19 pandemic, have expedited the trend, compelling policy makers around the EU member states to devise adequate responses.

Technologically-empowered solutions, and particularly algorithmic management, have introduced novel ways for organising and coordinating workforces. Markedly, data is becoming a key asset for companies and workers. The COVID-19 pandemic has further normalised remote working, resulting in the digital economy taking a foothold.

The European regulatory landscape is undergoing major revisions of the existing laws and regulations. The most recent initiatives aim at improving the working conditions of people working through digital labour platforms[1], granting some categories of solo self-employed workers collective bargaining rights[2], granting those working digitally to disconnect outside their working hours[3], implementing harmonised rules on artificial intelligence[4], and ensuring adequate minimum wages in the EU[5].

Striking a balance between fair and decent working conditions and unlocking the innovative potential of DFW is a key challenge ahead for policy makers.

Crucially, a comprehensive outlook on DFW and the road towards ensuring such working conditions requires input from various stakeholders, such as companies, startups, unions, research institutions, and advocacy groups. To tackle the complexities of the challenges that lie ahead, Reshaping Work facilitated a multistakeholder dialogue tackling four key topic areas of paramount relevance for DFW: (1) access to social protection; (2) worker representation; (3) algorithmic management and transparency; and (4) re-skilling, up-skilling, and micro-credentials.

The report presents the outcome of twelve roundtable discussions facilitated by the Reshaping Work Dialogue project, supported by a systematic literature review of the topic and the knowledge of independent experts that partook in writing and reviewing this report.

Reshaping Work is committed to continuing to gather a multitude of stakeholders in order to provide timely and relevant information on topics concerning DFW by promoting the principles of diversity and inclusion.

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1   Proposal for a Directive of the European Parliament and of the Council on improving working conditions in platform work, COM(2021)762 final.
2   Communication from the Commission: Guidelines on the application of EU competition law to collective agreements regarding the working conditions of solo self-employed persons (C(2021)8838 final).
3   European Parliament resolution of 21 January 2021 with recommendations to the Commission on the right to disconnect (2019/2181(INL)).
4   Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts, COM(2021)206 final.
5   Proposal for a Directive of the European Parliament and of the Council on adequate minimum wages in the European Union, COM(2020)682 final.

Policy Pointers

- Ensure baseline social protection for all workers, regardless of their legal status.
- Collective bargaining to be extended to all workers, regardless of their employment status.
- Stimulation of social dialogue that incorporates the views of all parties with a stake in the debate, including unions, companies, consumers, and others.
- Workers should receive more information on algorithms affecting them, as foreseen by the proposed platform work directive. Information on algorithmic systems should be a part of an onboarding process for new workers, which can easily be implemented by labour platforms.
- Workers should have greater access to their own data, while respecting genuine privacy concerns.
- Credential recognition requires a European-scale solution. A centralised authority, which can "certify the certifications", would help ensure trust, and promote inter-European mobility, data portability, and the interoperability of credentials.
- The bottom-up approach, including the worker voice and social dialogue, is essential for developing adequate re- and up-skilling initiatives.

Introduction

The rapidly changing nature of employment is blurring the distinction between its standard and non-standard forms.

Digitalisation, however, has enabled the transformation of existing work arrangements and the rise of new ones.

It is estimated that one-third of the workforce in OECD countries (OECD, 2019a) and 40% of workers in the European Union (European Commission, 2020a) are engaged in some form of a diverse work arrangement.

The world of work is undergoing a startling change. Technological advancements, cloud computing, and broadband connectivity, in combination with changing attitudes towards life-time careers, are attracting the attention of researchers, policy makers, and business professionals alike. Conceivable transformative effects on working life and the economy at large are soliciting reimagination of the way our labour markets are structured and governed.

The rapidly changing nature of employment is blurring the distinction between its standard and non-standard forms. Non-standard work arrangements, such as contract work, temporary agency work, and platform work cover a large proportion of work arrangements, referred to as 'diverse forms of work' (DFW)[1] to capture their representativeness. They denote work arrangements that go beyond full-time, open-ended contracts with a single employer (OECD, 2019a).

Historically, labour markets have been characterised by multiple work arrangements, ranging from full-time and part-time work, to contract and seasonal work, and zero-hour contracts. Digitalisation, however, has enabled the transformation of existing work arrangements and the rise of new ones. While some sectors that traditionally formed the cornerstone of DFW (e.g., the agricultural sector) have been in decline for some time, others (e.g., the tech sector) are on the rise.

It is estimated that one-third of the workforce in OECD countries (OECD, 2019a) and 40% of workers in the European Union (European Commission, 2020a) are engaged in some form of a diverse work arrangement.

Opportunities brought by DFW are worth noting. First, DFW are expanding the local markets by providing new job opportunities. Some work arrangements, those mediated by digital labour platforms for instance, provide relatively low entry barriers to the labour market, enabling workers to secure additional income streams. For individuals with reduced labour market opportunities (e.g., disabled or elderly individuals), DFW (e.g., online work) provide a chance to participate in the global labour market whilst not having to leave their home country (this also benefits home countries by e.g., preventing brain drain). Second, DFW can be a stepping stone towards new careers and a lifeline during times of economic hardship. Finally, DFW are in line with a decrease in job tenure, whereby younger generations prefer to try out multiple roles and generally place a higher value on work autonomy (OECD, 2019a).

Most notably, jobs mediated through digital labour platforms have seen an expansion in recent years. Digital labour platforms connect users (individuals and businesses) for the exchange of services through electronic means, whereby the matching happens online while tasks may be carried out on location or online.

About 1-2% of the total workforce in the EU do platform work as their main job, while around 10% do it occasionally (Eurofound, 2021a). However, the COVID-19 pandemic is expected to

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1   It is important to note that DFW encompass a large variety of work arrangements; earnings can range from very low to very high, and the 'precarity' that is associated with some work arrangements is not present in others.

About 1-2% of the total workforce in the EU do platform work as their main job, while around 10% do it occasionally.

The COVID-19 pandemic is expected to accelerate the growth of platform work, with the number of workers partaking in this type of work estimated to rise by 35% (engaging an estimated 43 million workers) by 2025.

Discussions on future of work concern a wide range of stakeholders: from business representatives to trade unions, advocacy groups and researchers.

accelerate the growth of platform work, with the number of workers partaking in this type of work estimated to rise by 35% (engaging an estimated 43 million workers) by 2025.[2] In addition, revenues generated by digital labour platforms in the EU have grown 500% in the last five years (De Groen et al., 2021). The steepest growth is seen in the delivery sector, which has grown from 46 platforms in 2010 to more than 380 in 2020 (ILO, 2021), and from 3 to 8 billion euros in revenue from 2019 to 2020 (De Groen et al., 2021).

Diverse forms of work, on the other hand, have faced a number of challenges. Considering the ascending trend of DFW over the past decade, insight into how they impact the world of work, and workers in particular, is of crucial importance for advancing our economies in a way that promotes decent quality work and working conditions. In this report, we focus on four broader topics that require further consideration: access to social protection, worker representation, algorithmic management and transparency, and re-skilling, up-skilling, and micro-credentials.

In particular, discussions on these topics concern a wide range of stakeholders: from business representatives to trade unions, advocacy groups, and researchers. In light of this, the Reshaping Work Dialogue project organised a series of roundtable discussions, gathering stakeholders to participate in constructive dialogue, with the goal of achieving workable solutions that potentially advance the quality of work in DFW, and complement extensive forward-looking measures initiated by the European Commission (see Figure 1 for the overview).

By employing this innovative approach, we complement an extensive body of research coming from leading authorities on the topic, such as the International Labour Organisation (ILO), European Fond for the Improvement of Living and Working Conditions (Eurofound), and Organisation for Economic Cooperation and Development (OECD), by providing an insight into views, and points of agreement and disagreement among a wide variety of stakeholders. Notably, besides incorporating the views of dominant players, we also bring to light the perspectives of micro-businesses and advocacy groups, whose views and operations may not be widely known, yet they merit inclusion into the wider debate that concerns them. Furthermore, understanding the operations of smaller organisations can shed light on best-practice examples that can be further scaled.

This report thus promotes diversity and the inclusion of a variety of views that may inspire business professionals as well as policy makers, with the underlying goal to advance work and working conditions for those in diverse forms of employment.

The first section discusses access to social protection among diverse workers, as one of the prominent areas requiring comprehensive reform beyond the full-time employment model. The second section sheds light on ways to secure diverse workers' voices in the workplace, focusing on providing the self-employed with collective representation and bargaining rights. The third section examines the impact of algorithmic management in the world of work and proposes ways for greater algorithmic transparency to be enlisted in business operations. Finally, the fourth section outlines ongoing policy debate about skills development, pointing out measures that promise to reinforce an equitable and sustainable transition to the digital economy. The report concludes with policy recommendations stemming from a literature review and stakeholder input collected during the Reshaping Work Dialogue project.

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2   Proposal for a Directive of the European Parliament and of the Council on improving working conditions in platform work, COM(2021)762 final.

Figure 1. Timeline of EU activities

June 2016
European Agenda for the Collaborative Economy

November 2017
European Pillar of Social Rights

June 2019
Platform-to-business Regulation

June 2019
Directive 2019/1152 on transparent and predictable working conditions

November 2019
Council Recommendation on access to social protection for workers and the self-employed

January 2020
EU policy priorities for the period 2019 to 2024

March 2020
New Industrial Strategy for the EU

February - April 2021
First-phase consultations of social partners on working conditions in platform work

May 2021
Action Plan to implement the European Pillar of Social Rights

June - September 2021
Second-phase consultation of social partners on working conditions in platform work

December 2021
European Commission's Proposal for a Directive of the European Parliament and of the Council on improving working conditions in platform work, and draft Guidelines on the application of EU competition law to collective agreements regarding the working conditions of solo self-employed people providing services

Objectives and Methodology

Following the Reshaping Work 2021 report[3] and ongoing policy debates, we identified four key topic areas that emerged as essential, in terms of both the urgency of finding workable solutions to the challenges they entail, and their potential to engage a diversity of stakeholders in a constructive dialogue. These include: (1) access to social protection; (2) worker representation; (3) algorithmic management and transparency; and (4) re-skilling, up-skilling, and micro-credentials. While discussing these rather complex topics, we focused on pinpointing major challenges, shedding light on good practices pioneered by various organisations, and arriving at possible solutions that promise to advance the debate and inspire policy making.

To ensure that all the views are represented and that the report has a strong factual and scientific grounding, we relied on roundtable discussions, a systematic literature review, and the knowledge of independent experts.

Roundtable discussions, facilitated among 28 organisations that all represent a different perspective or possess deep knowledge on the discussion topics, constituted the main source of input for this report.

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3   Accessible here.

To facilitate dialogue among these parties, Reshaping Work organised twelve roundtable discussions in the period between April and November 2021[4]. Independent researchers and experts affiliated with Amsterdam Economic Board, Fairwork Foundation, and Reshaping Work, developed agendas for each roundtable discussion and facilitated the dialogue. The meeting minutes after each roundtable discussion were prepared and shared with the roundtable participants for their consideration. In addition to the roundtable discussions, a virtual Future of Work conference was organised in September 2021, gathering over 250 participants whose views, expertise, and innovative ideas shaped the outcome of this report.

Secondly, the report authors conducted an extensive literature review in order to present the research carried out on the topic to date. Furthermore, Reshaping Work managed an online library where all participants in the Reshaping Work Dialogue could share relevant reports, white papers, and policy studies. The library supported to the collaborative effort and ensured that a wide range of source material was received, but also that participating organisations could be informed about the latest developments on the topic.

Finally, the report was peer-reviewed by three external experts. Taken together, these steps ensured objectivity and transparency in the discussions, as well as the validity of the information presented herein. The report reflects the views of the authors, while incorporating the input of a wide range of stakeholders with different viewpoints but the common goal to advance the quality of work for workers in diverse forms of employment across the EU.

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4   The European Commission's proposal for a directive on platform work was published in December 2021, thus the roundtable discussions did not incorporate this recent development. Nonetheless, the outcome of the discussions compliments the Commission's draft proposal and makes important points that can be taken into account in further revisions of the proposal.

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ACCESS TO SOCIAL PROTECTION

ACCESS TO SOCIAL PROTECTION

While diverse forms of work (DFW) bring about a number of opportunities, they are also associated with challenges – in this section we particularly focus on challenges related to access to social protection.

Social protection is defined by the ILO as "the set of public measures that a society provides for its members to protect them against economic and social distress caused by the absence or a substantial reduction of income from work as a result of various contingencies (sickness, maternity, employment injury, unemployment, invalidity, old age or death of the breadwinner), the provision of health care and the provision of benefits for families with children" (ILO, 2004, p. 2).

Access to social protection is partially linked to employment status (Forde et al., 2017). While some countries cover various types of workers more comprehensively (Austria, Hungary, Italy, Slovakia, Slovenia, Sweden, and Portugal), workers in DFW, on average, receive less mandatory and effective social protection in the EU (Kilhoffer et al., 2020).

Social protection systems were generally designed at a time when most workers were classified as employees with a single, long-term employer (OECD, 2018). Workers in DFW usually do not fit this mould and are often classified as self-employed. As such, these workers often have less statutory and effective access to social protection, combined with being under-insured because they struggle with eligibility conditions like required incomes, as well as the short duration of benefits, waiting periods, and the possibility of opt-out exemptions (Kilhoffer et al., 2020).

According to the European Pillar of Social Rights: "regardless of the type and duration of the employment relationship, workers have the right to fair and equal treatment regarding working conditions and access to social protection" (Principle 5, European Pillar of Social Rights). In order to live up to these principles, it is important to discuss what the essential social protection rights are that we as a society believe all workers should enjoy, what obstacles need to be overcome to access to these social protection rights, and how they can be financed.

While all workers (in DFW or not) require fair and equal access to social protection, securing social protection is far from the only motivation for working. Many in DFW, especially those who are not solely economically dependent on this type of work, are motivated by additional income opportunities on more flexible terms (Piasna & Drahokoupil, 2021). For example, many students, individuals unable to engage in traditional employment, and those with care responsibilities (especially women), among others, value the working time flexibility of platform work (Johnston, Caia, & Silberman, 2020).

Furthermore, worker motivation also depends on local labour market opportunities. Workers in low-wage countries (e.g., the Global South) may be motivated by the prospect of receiving higher remuneration by working on online platforms (e.g., Upwork, Toptal), compared to what they can earn locally. In high-wage countries, platform work may be more attractive for those who already face structural barriers in the labour market (Drahokoupil & Piasna, 2019), for instance, due to lack of local language proficiency, licensing requirements, or skills (Johnston et al., 2020).

Understanding these motivations and supporting workers in their career paths, while upholding the European values of solidarity, fair working conditions, and access to social protections, will be crucial as regulatory debates advance.

Most notably, on December 9, 2021, the European Commission published a draft proposal for a directive on platform work.[5] While the roundtable discussions of the Reshaping Work

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5   COM(2021)762 final.

It is important to note that even if a platform takes measures to protect a worker, for example by limiting the maximum amount of time they can be active on an app, there is nothing preventing the worker from continuing on another app.

Dialogue project preceded this publication, the outcome of the discussions contributes to the Commission's proposal and addresses some points the proposal has omitted, which we elaborate further on in this section.

First, we revisit relevant concepts for diverse forms of work such as working time and multihoming. Next, we turn to the unpredictability and insecurity of earnings in DFW and suggest some out-of-the-box solutions for addressing them. Finally, we discuss the necessity of extending social protection rights to all workers, regardless of their legal status, as well as some challenges that need to be addressed to make this a reality.

Revisiting Relevant Concepts for Diverse Forms of Work

Working time in the Context of Diverse Forms of Work

New ways of working have changed our preconceptions of what constitutes working time. This is not the case only for DFW, but for work in general, especially with the emergence and normalisation of work from home. While traditionally the number of hours in a working day had been pre-defined by contractual agreements, in the platform economy such boundaries became blurred as the nature of work is different. Some workers can choose when and if they want to work, and hours may not be completed in a defined block. However, some platforms rely on different models, in which workers may be asked to pre-commit to shifts, allowing the platform to fulfil orders based on the predicted demand during that time.

While it may appear that some workers enjoy a great degree of autonomy when it comes to working time, it is a rather multi-faceted concept in DFW, and can have an impact on multiple aspects of worker well-being. For example, working time is linked to health and safety at work, and fair earnings.

First, if a worker works long hours in order to earn income, his or her health and safety in the workplace, as well as that of others (e.g., in the case of ride-hailing when a worker participates in road traffic), may be compromised (ILO, 2021). Furthermore, long hours may take a psychological toll on a worker, impacting his or her mental health. Excessive working hours can also be the result of 'algorithmic nudging', whereby workers get notifications about their earning goals, inciting them to take yet another task, with possible harmful effects on their wellbeing (Möhlmann, 2021).

It is important to note that even if a platform takes measures to protect a worker, for example by limiting the maximum amount of time they can be active on an app, there is nothing preventing the worker from continuing on another app. This is also a challenge that requires a solution for those who work shifts as an employee of a platform, for instance.

Second, working time is also linked to fair wages. Workers may feel the need to work excessive hours to make ends meet. This is especially the case when earnings are not sufficient to make a decent living. However, hours worked can also be shorter than desired, as the amount of work is subject to demand at any given point in time, specifically for platform work. Thus, while demand is an aspect of work that workers cannot control (nor platforms to an extent)[6], they nonetheless shoulder associated risk. The 2019 Directive on transparent and predictable working conditions, due to be transposed into EU member states' national legislations, promises to grant workers more security in this regard. According to the directive, those workers whose working patterns are "entirely or mostly unpredictable" (Art. 10) will have a right to be informed about the organisation of work, including the number of guaranteed paid hours (Aloisi, 2022).

Third, when it comes to workers that depend on this type of work to make a full-time living, which is often the case with online work (e.g., graphic design, microtasking), workers may

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6   Platforms can influence demand to an extent through marketing or discount mechanisms (providing discounts on their services). However, some external events (e.g., a pandemic) can slow down platform growth, beyond the control of a platform (OECD, 2020a).

An ILO report (2018) points out that low pay in micro tasks (e.g., Amazon Mechanical Turk) can be attributed, to an extent, to precisely this issue — time that goes into looking for a task.

attempt to undercut competing workers in order to win the bids (ILO, 2021). Since these marketplaces are international, and a great number of workers come from areas with a cost of living much lower than in the European Union, the competition can be fierce.

Finally, workers may spend time waiting for a task or searching for one on online platforms (see below). Besides leading to 'unpaid' hours, it also leads many workers to work unsocial hours, which exposes them to physical and psychosocial risks (Eurofound, 2021a). These factors in turn can necessitate income supplementation, such as from social insurance schemes, which burdens social security systems (ILO, 2021).

Despite this, a European Parliament study on the social protection of platform workers remarks that while concerns over low pay hold merit, workers from lower-income countries appreciate opportunities for extra income (EU, 2017), a finding that has been corroborated by Andjelkovic, Jakobi, & Kovac (2021).

Defining working time

In the employment context, working time has traditionally been defined at the national level, including by contractual agreements. In this sense, the worker bears no responsibility whether there is work or not; the worker gets paid regardless (although employers often closely monitor worker performance to maximize their productivity during that time). When it comes to the self-employed on platforms, on the other hand, workers may be compensated per hour (e.g., Temper, Helpling, where they set their own hourly rates), per shift (e.g., Glovo, Delivery Hero) or per task (e.g., Uber, Roamler). Presently, the time calculated as "working time" is most commonly the period when a worker actively undertakes a task.

A main point of contention in this regard is that the worker is not compensated for his or her availability to perform a task in a given moment (although they may not be obliged to accept an offer made to them as in traditional employment). In other words, waiting time, time that goes into searching for a task or taking qualification tests, is not calculated as working time. While some nuance is present, the requirement to remain available without pay applies to many platform workers, and to those with zero-hour contracts.

An ILO report (2018) points out that low pay in micro tasks (e.g., Amazon Mechanical Turk) can be attributed, to an extent, to precisely this issue — time that goes into looking for a task. The ILO study found that out of 24.8 hours, which was the average working week, 6.2 hours went into unpaid work. Thus, for every paid hour, workers spent 20 minutes on unpaid work, such as looking for clients. More recently, research has revealed new features of unpaid platform work, ranging from portfolio preparation (digital CV showcasing past work experience) and bike maintenance (in the case of food delivery) to up-skilling investments (Pulignano et al., 2021).

Generally, self-employed people are expected to search for a client and can account for these costs in their pricing; however, platform workers do not always get to decide on their rates (although, depending on the platform, they can decide whether or not to accept an offer made to them), especially when it comes to on-location tasks. It is worth noting here that some platforms also open up opportunities to get clients and reduce time that self-employed workers would spend looking for clients. Thus, working time is an issue that should be seen in light of social rights pertaining to workers, as well as economic efficiency pursued by the platform. Box 1 showcases some examples of how platforms are dealing with minimising idle time.

Deconstructing the issue of multihoming

With the spread of diverse forms of work, multihoming as a phenomenon is becoming more relevant. Multihoming is understood as behaviour that exists on both sides of the platform: service providers (e.g., platform workers) may offer services on more than one platform, and consumers can purchase services on multiple platforms. It amplifies the one-to-many employment relationships (working for multiple organisations simultaneously), calling

Overall, earnings vary considerably depending on the country, industry sector, and type of work performed.

into question the notion of working time.

Union representatives point out that while a worker may be connected to different platforms, he/she can perform work only for one platform at a time. On the other hand, platform representatives point out that in the delivery sector, it is commonplace for riders to deliver orders from different platforms, working for more than one platform at the same time. For example, a food delivery rider may pick up a few deliveries from a restaurant that were assigned through multiple platforms.

While the delivery sector may be exceptional in this regard, multihoming is common on many other platforms, including on online labour platforms. Cedefop's study (2020a) points out that a significant proportion of workers are active across platforms. Having their profile on multiple online platforms is considered by workers as advertising for their personal enterprise, increasing their chances of being noticed. However, it also entails costs for workers as ratings and skills data cannot be transferred from one platform to another (Paul, 2018).

Multihoming is also potentially an issue for social security (pension and insurance contributions). For employees, pensions are usually coordinated across multiple employers, but for self-employed workers, that is not the case; most commonly, the individual needs to arrange for these contributions, which can become very complex and prohibitive. This may point to the need to reform our social welfare systems, further evidenced by the recent Council Recommendation on access to social protection.[7]

Box 1. How do platforms attempt to reduce waiting time?

The case of food delivery. Delivery Hero, a food delivery platform, has a shift model whose advantage is the anticipation of demand and thus predictability of working arrangements. By utilising this model, the platform can guarantee tasks and earnings, while minimising waiting time. Delivery Hero also guarantees a minimum number of paid tasks, which protects a worker if a task is cancelled. The downside in this case, however, is reduced flexibility of working time and reduced opportunities for workers unable to get a shift (though this may result in higher earnings for workers that do get a shift).

The case of a high-skilled platform. On the other hand, Roamler, a Dutch information technology company, which specialises in crowd-sourced solutions for businesses, offers an overview of tasks regardless of a sector. The platform estimates the average time required to complete a task, including the travel time. Based on this, the platform sets the price. Information on the pricing and time required gives workers a chance to make an informed decision on whether to accept the task. The downside in this case is the inability to set one's own prices (which means reduced ability to compete based on price, but also less risk of a race to the bottom).

Unpredictability and Insecurity of Earnings

When it comes to earnings, we focus exclusively on platform work. Platform work is praised for enabling easy access to the labour market and providing opportunities for individuals to earn (supplementary) income (Berg, 2016; Johnston, Caia, & Silberman, 2020; Eurofound, 2019). The main motivation to engage in platform work is thus for monetary reward (Pesole et al., 2018).

Research to date suggests that in Europe, platform work does not constitute the main source of income for workers, however, a small proportion of workers are said to depend entirely on this type of work to make a living (Eurofound, 2018; 2019). Even when platform work is not the only source of income, workers may depend on it to make ends meet (European Commission, 2020a), and these workers are particularly vulnerable (Eurofound, 2019). This may also be driven by broader economic implications such as wage stagnation and an increased cost of living.

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7   Council Recommendation of 8 November 2019 on access to social protection for workers and the self-employed (2019/C 387/01).

Overall, earnings vary considerably depending on the country, industry sector, and type of work performed.

Overall, earnings vary considerably depending on the country, industry sector, and type of work performed. Project-based tasks (often requiring higher level of skills) and on-location delivery services are mostly compensated at market prices (Eurofound 2018; 2019). In developing countries, hourly earnings in ride-hailing and delivery are higher than in traditional sectors (ILO, 2021). However, the volume of work is often not guaranteed and even when work is compensated per hour, the task may take only a few minutes to complete, leading to low compensation. On Prolific, a task advertised as £18 per hour may take only a minute to complete, resulting in only £0.30 per task (Berg et al., 2018).

On-location platform work

While certain platform business models have an earnings guarantee (ride-hailing platforms often have minimum trip prices), fairness of per-task payment needs to be evaluated based on the overall time a worker has invested. In other words, workers may spend time waiting for a task without being compensated. However, it is important to acknowledge that self-employment by definition includes a risk and reward assessment for the worker (compensated by the possibility of setting one's own prices for services), more so than for an employee (which is related to the issue of (mis)classification).

The EIGE 2020 and 2021 surveys reported that when it comes to low-skill on-location tasks, workers spent on average 11.8 hours per week on paid platform work, while they spent 8.7 hours on unpaid tasks, such as waiting time (EIGE, 2021). The numbers are 12.9 and 8.3, respectively, for high-skilled on-location work. These results are even more striking than the ILO's 2021 study, suggesting that 42% of time for on-location platform work, and 39% of online platform work, is unpaid.

Online platform work

Concerning online platform work, meaning work matched and executed on online platforms, workers have a right to set their own rates more often than on on-location platforms. However, workers may need to spend vast amounts of time at their own expense searching and applying for tasks, or preparing work for competition submissions, with little or no certainty of payment.

The EIGE survey reported that 26.5% of people working through platforms reported that they were never or rarely able to secure assignments (EIGE, 2021). This suggests that a relatively large proportion of workers are unable to secure any sort of paid assignment when they wish to. While it could relate to their qualifications, it also relates to the overall competition on the platform, which the platform itself has the control over (platforms control entry and exit).

Tackling Unpredictability and Insecurity of Earnings

Modular platform architecture

In light of social protection entitlements and entrepreneurial freedom that should be granted for self-employed workers, one can imagine giving workers an opt-in for different models of work. Under one model, workers would have less flexibility but more predictability (e.g., shift model). Under another model, they would have full flexibility but less predictability (e.g., pay per hour without minimum times; pay per task). Such an approach is already in practice in on-location platform work in Spain (Figuls & Galindo, 2021).

Giving workers a choice to decide which model they would like to engage with would grant more security to those that depend on this type of work to make a full-time living, while providing supplementary income opportunities to those that engage in this type of work occasionally. This can go further to allow those that meet certain criteria to acquire an 'employee' status.

In order to allow workers to make entrepreneurial decisions that can affect their earnings, platforms should strive to provide as much information as possible to aid workers in those decisions.

Introducing a minimum compensation 'per gig'

Introducing minimum earnings per gig (common in the ride-hailing sector) according to standards in a particular industry/sector could ensure fair earnings. Such an approach needs to make no distinction between those that depend on this type of work to make a full-time living and those that partake in this type of work occasionally. The approach would ensure that compensation per task (gig) meets certain sectoral standards, and the worker would be able to receive fair compensation comparable to full-time living standards, should a certain number of gigs equal a full working day of eight hours, for instance. The impact on consumer prices would be unavoidable – higher rates would likely lead to reduced demand.

The European Commission is working on ways that would allow some categories of solo self-employed workers (the economically dependent, those who work side-by-side with standard workers, those who provide services via platforms) to be exempted from competition law, ensuring they are properly protected and can collectively negotiate wages. In addition, some platforms have already taken proactive measures in this regard. [8] For instance, Upwork enforces a global minimum price.

Full information transparency

In order to allow workers to make entrepreneurial decisions that can affect their earnings, platforms should strive to provide as much information as possible to aid workers in those decisions.

Importantly, platforms possess information on the aggregate level, such as the average price of a task in a specific area (e.g., in the case of household services), which can provide invaluable insights to workers. Uber's 'earnings estimator'[9] can be considered an example of this. The estimator allows Uber drivers to estimate the net income they will be able to generate on the Uber application based on the hours of connection, the vehicle and the type of service.

Platforms can also make it easier for workers to set prices (on platforms that allow price-setting by workers; e.g., Helpling, Upwork) by informing workers of real supply and demand statistics, the average rate of comparable tasks, and by sharing other data that can allow them to make adequate entrepreneurial choices.

See Box 2 for ways to tackle unpredictability of earnings as implemented by some platform companies.

Box 2. From practice: tackling the unpredictability of earnings

On-location platform work: Unlike prevailing arguments in favour of workers being able to set prices, Uber reported that pilots in California, Portugal, and France show that such an approach led to a race to the bottom. While centrally set prices in the case of some platforms do indeed increase efficiency, as they are dynamically adjusted in real time, the recently proposed directive on platform work could trigger the presumption of subordination in the case of platforms setting prices.

TaskRabbit employs different mechanisms in this regard. Firstly, it allows workers to set their availability up to two weeks in advance and set their own prices. The platform itself established a one-hour minimum per task, but workers have the ability to factor in travel time by either setting their map to cover a time- and earnings-efficient radius or by changing their rate. Secondly, if a client cancels the task within 24 hours, the worker receives the pre-set minimum, which is equivalent to one hour of earnings.

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8   Communication from the Commission: Guidelines on the application of EU competition law to collective agreements regarding the working conditions of solo self-employed persons (C(2021) 8838 final).
9   Available in French here.

Temporary agency work: In the case of temporary agency work, the Adecco Group accepts certain risks by taking on a group of workers full-time, giving them open-ended employment contracts, in order to keep talents that are in high demand on the market. This is regardless of whether third parties require workers for a shift. These workers receive pay between assignments. Although the model differs in each country, depending on national regulations, this is the dominating model in Scandinavian countries, while countries including France and Italy have a growing contingent of agency workers on open-ended contracts. The possibility of offering open-ended contracts to agency workers is often regulated via industry-wide CBAs.

Extending Social Protection to All Workers

At the moment, the majority of labour platforms operating in the EU (90%) classify their workers as independent contractors (i.e., self-employed) (De Groen et al., 2021). While the majority of these workers are truly autonomous in their work and enjoy the perks associated with it (European Commission, 2021a), many others do not. For this latter group of 'bogus self-employed workers', not having an employment relationship strips these workers of access to certain rights and therefore could lead to poor working conditions and unfair wages, according to the European Commission's latest communication.[10]

An important pillar to improving working conditions related to social protection (e.g., insurance, pensions), but also beyond it, is ensuring worker representativeness. While social dialogue and collective bargaining are traditionally tied to employment contracts[11], for example, new standards need to take diversity of the workforce and workplace into account. Different types of employment contract, short or long working hours, and the right to disconnect, are all challenging traditional outlook of employment. Worker representation thus needs to be supported in a way that allows for the organisation of this diverse workforce (Eurofound, 2021a).

The ILO recently recommended an international governance system for digital labour platforms to be established and to oblige platforms (and their clients) to respect certain minimum rights and protections (ILO, 2019). Such revisions in the system hold merit considering that diverse forms of work are becoming more prevalent, "potentially undermining welfare state finances as well as the social protection of workers and their families" (OECD, 2018).

While in most OECD countries social protection contributions, including pensions, are financed by employers and employees, such benefits are tied to past earnings, so that those that earn more also enjoy higher benefits, e.g., when they retire (OECD, 2018). While the self-employed may benefit from paying lower social protection contributions, these contributions tend to result in lower coverage, putting people at risk of poverty because of income loss e.g., due to sickness or in old age. However, this is an example of one design of a social security system; Australia has pioneered another.

Social protections can take two forms: contribution-based and tax-based. "Social security contributions are compulsory payments paid to general government that confer entitlement to receive a (contingent) future social benefit" (OECD, 2022). They include unemployment insurance, sick-leave, old-age, and medical services, to mention the most common benefits. Contributions can be made by both employers and employees.

On the other hand, in Australia, contrary to the system in other OECD countries, benefits are flat-rate entitlements that come from the government budget, that is, taxes (Whiteford, 2017). Thus, social security is considered to be the responsibility of the Commonwealth (national government), with uniform eligibility criteria and entitlements (OECD, 2018). The Australian system essentially grants social protections to many groups that would not be covered in other countries, such as those with interrupted work histories, platform workers, and seasonal workers (OECD, 2018).

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10   COM(2021)762 final.
11   Collective agreements for workers in a position comparable to that of employees are accepted by EU antitrust law.

Social protection should be extended to all workers, regardless of their legal status.

Minimum level of social protection

All the stakeholders that took part in the Reshaping Work Dialogue agree that baseline social protection should be guaranteed to all workers, regardless of their employment status. Baseline social protection includes fundamental protections granted to workers in full-time employment, such as, a minimum wage, the right to sick leave, income protection solutions, a pension, etc. These are examples of protection that may be available to employees, but they do not always depend on local laws and traditions. Those protections, when available to employees, should be available to all types of workers.

On December 9, 2021, the European Commission proposed a set of measures to improve the working conditions of platform workers.

The Commission proposed a rebuttable presumption of employment. In summary, this means that if certain criteria are proven to exist (and only then), the worker is presumed to be employed rather than self-employed. This would also apply outside of the specific platform context. The alleged employer (platform), however, could still challenge this presumption in court.

Furthermore, if monitoring, limits on tasks and working hours, and restrictions on building a client base, among others, are exercised over workers, they will be assumed to be employees, enjoying all the rights of those in traditional employment (e.g., sickness and unemployment benefits). In addition to addressing (mis)classification, the proposal also focuses on ensuring fairness and transparency in the area of algorithmic management.

If the directive is adopted by the European Parliament and the Council, member states will have two years to incorporate it into national law.

However, our key remark in this regard is that social protection should be extended to all workers, regardless of their legal status. The current proposal does not cover the 'genuinely self-employed', who can be especially vulnerable in the case of external events beyond their control (e.g., a pandemic), leaving them with no income to fall back on or other protections, with potentially high costs for social security systems.

Eligibility criteria

While the self-employed may benefit from lower insurance contributions (e.g., because due to their legal status they may not be in the scope of the social security system), this simultaneously results in lower coverage, putting people at greater risk of poverty due to income loss, especially in old age. Also, 8 out of 33 OECD countries have individuals exempt from pension and social security contributions if they earn below a certain threshold (OECD, 2019a). Taking into account that a number of workers (e.g., those involuntarily with a shorter working time, and/or those engaging in platform work periodically) do not meet the minimum contribution threshold, they will have less statutory and effective access to social protection. Furthermore, the conditions in terms of work history are often more restrictive for the self-employed.

Unemployment is not synonymous with being unable or unwilling to work, just as the unemployment rate does not include all individuals who are not working. To qualify for unemployment benefits, a worker typically needs to prove an involuntary loss of employment – typically when a worker is fired by their employer. For many in DFW, this may be irrelevant or difficult to prove. For instance, platforms may not explicitly deactivate workers, but rather adjust matching algorithms, significantly lowering their chances of being selected (especially the case for online work). Furthermore, self-employed individuals typically have greater autonomy in deciding when and how often to work, and accept the risk that there may be fluctuations in demand for their services. However, some may no longer be able to gain assignments due to their skills no longer being relevant or due to an economic crisis. Thus, the traditional definition of unemployment is challenging to apply to self-employment.

For true self-employed individuals, losing access to a platform or losing part of their revenue due to algorithmic changes is not necessarily the same as unemployment.

There are several different types of "involuntary unemployment" worth considering in DFW. First, a platform worker may be unable to access the platform (and thus work) while an administrative/technical glitch is being reviewed. Second, a platform worker may leave one platform for another, or simply transition between different DFW. Third, large structural events like the COVID-19 pandemic may occur, in which work is no longer possible, and individuals rely on unemployment benefits from government measures, massive fiscal support, etc. For instance, during the COVID-19 pandemic, platform workers in many cases were not eligible or had difficulty proving their loss of income (Fairwork, 2020a; Fairwork, 2020b).

For true self-employed individuals, losing access to a platform or losing part of their revenue due to algorithmic changes is not necessarily the same as unemployment. Entrepreneurial freedom and entrepreneurial risk go hand in hand. This becomes a challenge, however, when considering relatively vulnerable self-employed or bogus self-employed workers.

The roundtable participants discussed potential strategies to mitigate the impact of the loss of work for workers in DFW. The Acture Groep suggested establishing a crowd insurance fund that would be used in these cases. However, even in this case there is still a need to define in what circumstances a worker would be entitled to benefits from the fund, who should contribute and to what extent. Another potential model would be for platforms to partner with insurance companies that would design income protection coverage and offer it to platform workers. Similar to the proposed model, the platform could include an insurance premium when setting prices and transfer the premiums to the insurer.

Longer-term benefits, such as pensions also merit consideration. In the roundtable discussions, insurance companies pointed out that pensions have the most value when accrued from an early age. This is because contributions starting at a young age have an outsized impact, even if it is when a worker is likely to be earning significantly less than later in their career. Therefore, even if workers in DFW are more concerned about contemporaneous benefits like accident and unemployment insurance, or prefer to minimise their social protection contributions and retain the maximum income,[12] the longer-term safety net should not be ignored.

Some of the topics discussed cannot be addressed at a pan-European level because they are largely a reflection of national laws and traditions, and extend beyond the legal competence of the European Union.[13] Such differences make it far more complicated to recommend Europe-wide solutions.

Nevertheless, the roundtable participants discussed several promising strategies. One possible solution entails social security tied to an individual account (similar to the strategy implemented in France; see Box 3). This also requires assuring the portability of benefits between different EU countries, while adhering to national regulations.

Box 3. Social protection alterations in the EU member states

The German approach. Self-employed artists and publishing professionals are compulsorily insured in the Artists' Social Insurance (Künstlersozialversicherung). Under this scheme, workers pay only half of the contributions, while the remainder is paid by clients (30%) and a tax-financed state subsidy (20%). The scheme entitles workers to old-age pensions, disability pensions and survivor pensions (OECD, 2019b).

The French approach. France extended mandatory coverage tailored for employees to professional journalists. Journalists who are paid per publication rather than working hours, enjoy additional benefits. For example, they gain a reduction of 20% on capped and non-capped social security contributions. The reduction is not, however, reflected in lower benefits because of the redistribution within the scheme (OECD, 2019b).

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12   Previous research found this attitude to be prevalent among delivery platform workers in the Netherlands. For more see: Kilhoffer et al., 2020.
13   For a more detailed discussion, see the chapter "Instruments and Actions at EU Level" (Kilhoffer et al., 2020).

Financing Social Protection for All Workers

Considering our suggestion to extend social protection to all workers (see previous subsections), a fundamental question that arises is who shall contribute to financing it: companies, the government or the workers themselves.

First, some participants in the Reshaping Work Dialogue suggested data sharing in order to establish a corresponding level of contributions between different parties. The platform would thus contribute proportional to the time a worker spends on their platform. Thus, one way would be for platforms to be legally obliged to share information on individuals' work history (number of hours worked and when, and how much has been earned). This would also contribute to a reduction in undeclared work. Alternatively, there could be a trusted third party (e.g., cooperative data platforms) that would aggregate data from multiple platforms and ensure the platform workers also have full access to the data, however this solution would need to be recognised by the government.

Second, De Werkvereniging, the Dutch association advocating for workers' rights, suggested linking contributions to a unique worker social security number. The latter draws upon the idea of progressive taxation (with contributions being linked to the amount of pay). In line with concern for workers' rights, one can imagine social security contributions being financed by data generated by workers, consumers and citizens, which is sometimes sold by platforms to external parties, as pointed out by Smart Coop.

Finally, in order to address the issue of multihoming, participants suggested that contributions to social protection schemes should be shared among all the ecosystem actors (e.g., platform, workers, clients, etc.). One such model comes from India, where so-called separate funds are established. For example, in the case of food delivery, platforms, workers, restaurants, and users would contribute to a separate fund which would further allow workers to do shorter hours and continue multihoming. See Box 4 for other novel approaches for providing and financing social protection schemes for workers in diverse forms of employment.

Box 4. From practice: novel approaches to accessing social protection

Some countries, due to the lack of a unified approach to tackling social protection challenges, took their own action. We review them here.

Hilf.dk-3F agreement: This agreement suggests the implementation of a hybrid model (e.g., workers can choose whether they want to be an employee or not after reaching a certain threshold). Some participants from the Reshaping Work Dialogue consider this the least scalable option. In their opinion, there are potential drawbacks. For instance, such a model may create artificial barriers when someone is essentially considered an employee. For example, in Belgium, there are limits on freelance earnings per year (for any amount greater than this limit, freelancers pay additional taxes); however, the practice shows that workers stop job-related activities right before the threshold.

Entrepreneur account in Estonia: Any private person transacting with another private person can open an entrepreneur account at a bank. The government then automatically collects a certain percentage from it and distributes it among different social protections. It was created to formalise private person-to-person services. The scalability of such an initiative could be imagined among other EU countries.

Cases from France, Switzerland, Singapore, and Indonesia: This example was thought of as the most valuable in terms of scalability and applicability, especially by platform representatives. Voluntary contributions create the so-called anti-selection, e.g., people who buy insurance products are only those who think that they will use them in the future. Such a situation creates an imbalance in population for every insurer. To prevent this, some roundtable participants suggested including insurance against mandatory/obliged risks such as incapacity to work/temporary disability. Social security contributions made by platform workers would be evaluated in the same manner as insuring any other customer.

Policy Pointers

Ensuring fair earnings

- **Develop a clear definition of what constitutes working time in DFW,** taking into account all the negative repercussions and operational challenges that come from incorporating certain aspects in it (e.g., waiting time).
- **Lower barriers to multihoming** (working simultaneously for multiple platforms) by incentivising the portability of reputation systems (e.g., ratings)[14], which would reduce lock-in effects and workers' inability to switch to competing platforms even when dissatisfied with the working conditions.
- **More research is needed to assess the impact of price-setting by platforms vs. by workers.** In some industries it may make more sense for platforms to centrally set prices, such as for services that are relatively homogenous (or in real time); in others, workers may be better positioned to price their services adequately as they are more aware of the type of service and corresponding quality they are able to offer. In either case, fair earnings should be at the centre of these discussions.
- **Workers should receive transparent information** in regards to the duration of a task, preparation time needed (if any), and other aspects that may allow them to make an entrepreneurial decision on whether or not to accept the task.
- **Provide opportunities for working time flexibility and work-life balance** to support the labour market integration of marginalised groups (e.g., those with care responsibilities), among others.

Extending social protection rights to all workers

- **Ensure baseline social protection** for all workers, regardless of their legal status.
- **Data sharing** could allow for contributions by platforms to social protection schemes that are proportional to the earnings on a particular platform.
- **A multi-stakeholder model to finance social protection schemes** could be imagined, in which all the parties concerned (e.g., platforms, government, consumers) participate in financing the minimum level of social protection that would ensure decent living conditions for workers in DFW.
- **Private insurance can complement public social security systems** as it offers the possibility of protection against risks that may lead to income loss that are not (entirely) covered by social security (e.g., disability insurance), and can be arranged individually or collectively, covering for example all workers from a platform.

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14   Diversity of platforms should be acknowledged here and differences in reputation systems and data quality possessed by different platforms.

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WORKER REPRESENTATION

WORKER REPRESENTATION

Freedom of association and the right to collective bargaining (CB) are important pillars in mitigating power imbalances in the workplace and encouraging democratisation of work-related processes. Recognition of these as universal human rights as envisioned in international and European declarations is pivotal when it comes to diverse forms of work (DFW) (De Stefano & Aloisi, 2019).

Currently, employment and anti-trust law are defined on the basis of established dichotomies (such as between employees and self-employed persons) that are blurred in the new realities of DFW. Casual workers (including zero-hours workers), and economically dependent self-employed[15] and part-time workers are often instructed, monitored, and subjected to penalties if the work is not performed as directed; yet they are limited in their ability to collectively bargain (De Stefano & Aloisi, 2019; Lane, 2020).

Most recently, the European Commission has taken steps to ensure that competition law does not stand in the way of worker representation. In December 2021, the Commission published draft Guidelines on the application of EU competition law to collective agreements regarding the working conditions of solo self-employed persons (hereafter: Guidelines)[16], taking a first step towards ensuring that certain self-employed persons can collectively bargain to improve their working conditions.

Considering that action is being taken towards ensuring collective representation of all workers, it is crucial to discuss how such representation may look in this new economy. Platform work, which functions predominantly on the self-employment model with a geographically dispersed workforce, has challenged the mainstream organisational efforts of trade unions (Herr, Schörpf, & Flecker, 2021, p. 122), and at the same time stimulated 'organizational creativity' among the workers themselves (Vandaele, 2021).

Considering the potential for freedom of association and collective bargaining to advance good quality work, democracy at work, and workers' autonomy, this section examines challenges and innovative approaches related to worker representation, with a particular focus on labour platforms.

Importance of Extending Collective Bargaining to All Workers

The position of and concern for workers in diverse forms of employment call for further deliberation and actionable outcomes. Workers' collective agency has been hampered by short-term working arrangements (Johnston & Land-Kazlauskas, 2018) and the lack of clear communication channels to companies (from the side of workers) and to other workers (ensuring collective action) (Hastie, 2020).

The existing body of literature has documented the unfavourable position of workers in terms of their income and job insecurity, concerns over health and safety, isolation, long working hours, and more generally the lack of control and autonomy over working conditions (Pulignano et al., 2021; Vandaele, 2018)[17]. The use of smartphones, GPS-based applications, monitoring software, and different wearables at the workplace (De Stefano, 2020; Moore, 2017), introduces new concerns such as algorithmic management and extensive surveillance. While they are an increasing concern for all workers,

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15   This in-between category entails subordination typical for employment, however, protection and insurance benefits available to employees are missing. Designations like bogus self-employment and hidden employment for the same category are in use in policy debates (Eurofound, 2017).
16   C(2021) 8838 final.
17   Including provisions of the JUDGMENT Uber BV and others (Appellants) v Aslam and others (Respondents), [2021] UKSC 5.

Economically dependent self-employed individuals are a particularly vulnerable group among diverse workers.

In the case of platform work, even when platforms grant workers autonomy over certain aspects, there are other aspects that directly or indirectly infringe upon that autonomy.

Therefore, issues that pertain to collective bargaining are not just linked to earnings per se, but also to other aspects that directly or indirectly influence income levels.

including those in employment relationships, diverse workers lack representation in this regard.[18]

Economically dependent self-employed individuals are a particularly vulnerable group among diverse workers. They financially depend on a single organisation to make a full-time living, while being deprived of benefits and rights stemming from traditional employment. In such a situation, they bear risks, costs, and responsibilities (e.g., social insurance costs and taxes) without the possibility of collectively organising and bargaining or independently setting and negotiating their earnings.

In the case of platform work, even when platforms grant workers autonomy over certain aspects, there are other aspects that directly or indirectly infringe upon that autonomy. For instance, while some platforms grant workers the right to set their own rates (e.g., Helpling, Upwork), they at the same time control labour-market entry. Low entry barriers may mean more competition, prompting workers to lower their prices to get tasks. While some platforms strive to pass policies that prevent race to the bottom (e.g., Helpling has a minimum price threshold), other aspects are beyond workers' control but nonetheless affect their livelihoods (e.g., higher payoffs during the times of high demand, prompting workers to work during those times).

Another concern is algorithmic management as an additional aspect that platforms utilise, yet workers have limited information about or power to influence it. For instance, online labour platforms often 'promote' certain services or the best performing freelancers (e.g., Upwork) by featuring them at the top of the web page. As a result, the earnings on online platforms are highly skewed, with the top 3% performers receiving all the benefits (ILO, 2021). Furthermore, platforms may adjust their algorithms overnight, greatly impacting workers' earnings. Therefore, issues that pertain to collective bargaining are not just linked to earnings per se, but also to other aspects that directly or indirectly influence income levels.

In this regard, the 2014 ruling of the Court of Justice of the European Union (CJEU), in the case of *FNV Kunsten*,[19] is notable (Countouris et al., 2021; OECD, 2020b). The CJEU recognised that not all the self-employed are undertakings, as the competition law puts forward. To the contrary, those who are economically dependent self-employed exhibit characteristics similar to those of employees, and therefore should be allowed to bargain collectively. This would result in competition law becoming complementary in addressing labour market inefficiencies (OECD, 2020b). To describe this group of self-employed workers, the CJEU decision introduced the term 'false self-employed', however, it failed to provide an operational definition. This is particularly important as the European Court left it to the national courts to establish conditions and determine what regulation (competition or labour law) would be applicable (Countouris & De Stefano, 2020).

For the reasons above, it is essential to ensure that all workers, regardless of their legal status, have a chance for collective representation. The European Commission draft on Guidelines envisions exemption from article 101(1) of the Treaty on the Functioning of the European Union (TFEU) and competition law for workers who earn 50% or more of their income from the same employer, those solo self-employed who do the same or similar tasks side-by-side with workers from the same company, and platform workers. These thresholds are, however, difficult to identify, which may lead to undesirable results – exclusion of those who are in need of the protection and improvement of their working conditions.

It is essential to ensure that all workers, regardless of their legal status, have a chance for collective representation.

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18   For a discussion on worker representation and social dialogue in the field of algorithmic management and transparency, see the section of this report dedicated to these issues (pp. 28-35).
19   The Jean Claude Becu and Albany decisions traced the path to the so-called labour exemption doctrine embodied in the FNV Kunsten ruling (Countouris et al., 2021).

An OECD report found that diverse workers, on average, had a 50% lower probability of being represented by established unions.

Ensuring an Adequate Form of Collective Representation in Platform Work

Trade unions (TUs), as institutions in the industrial relations (IR) framework, negotiate on behalf of employees with employers within a particular sector, industry, or workplace. However, decades-long changes in wider socio-economic and political contexts have affected labour markets, including IR institutions. Restructuring of enterprises, labour fragmentation through outsourcing and offshoring, changes in value chains (Flecker, 2010; Huws et al., 2009), technological developments and policy shifts (Pulignano, 2018; Berg, 2017; Weil, 2014), are some of the factors that have led to the diversification of working arrangements.

An analysis of labour market institutions and income distribution showed that, regardless of the TUs' significant role in reducing inequalities in societies, their membership density is in decline, and diverse workers account for only a small proportion of members (Jaumotte & Osorio Buitron, 2015). An OECD report found that diverse workers, on average, had a 50% lower probability of being represented by established unions (OECD, 2019a).[20]

Yet trade unions are adapting in regard to the changing labour market realities (Pulignano et al., 2016). Their support now encompasses assistance on an individual basis,[21] legal support, training, and social security[22], or exclusive focus on the provision of insurance[23] for workers in diverse forms of employment.

When it comes to platform work, TUs particularly support those who have employment status, in order to accelerate worker representation. Back in 2016, Austrian union Vida assisted Foodora employees to establish a works council[24] (Johnston & Land-Kazlauskas, 2018). Councils for Foodora and Deliveroo riders followed in Germany (Vandaele, 2021). Looking at more recent cases, stakeholders who took part in the Reshaping Work Dialogue pointed to two examples from France and Spain. The French union CFDT established a gig-work taskforce, which encourages platform workers to participate. The Spanish union Comisiones Obreras created two new positions in charge of platform workers' support and overseeing the digitalisation of the workforce and workplace in general (e.g., algorithmic management, platform economy).

Box 5. Overview of collective agreements in the platform economy

3F union and Hilfr. Representing the first collective bargaining agreement (CBA) in the platform economy[25], the agreement covers domestic workers from Hilfr being given the right to choose whether they wish to be an independent contractor or an employee (Ilsøe & Larsen, 2021). The CBA also introduced a minimum wage for independent contractors, which was later characterised as a breach of competition law by the Danish Competition and Consumer Authority (Countouris & De Stefano, 2020).

GMB union and Uber. Following the UK Supreme Court ruling that Uber drivers are workers[26], the GMB union and Uber agreed to work on a number of topics such as national earnings

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20   This lower probability can be explained by structural factors such as having no strong link to a single employer and DFW prevalence in sectors where the TU presence is weaker (as cited in: Pulignano et al., 2016).
21   Dutch FNV and German IG-Metal unions developed such an approach (ITUC, 2019).
22   The case of trade unions for professionals, cultural workers and journalists in the Nordic countries (Ilsøe & Larsen, 2021).
23   Swedish Unionen focused on insurance through its faircrowd.work project (ITUC, 2019).
24   Works councils are another IR institution regulated at national and European levels. In this report, works councils are discussed in the context of Austria and Germany, where councils, along with TUs, are systems that represent employees' interests.
25   The agreement was initially signed for a one-year period, but it is still in the process of renegotiation. According to the 2021 report "The Future of Work in the Nordic countries: Opportunities and Challenges for the Nordic Life Models", this is one out of nine collective agreements covering platform workers in Northern Europe (Ilsøe & Larsen, 2021).
26   UK law differentiates three categories of working relationship: employees (who are fully covered by employment law), self-employed (that have legal protection), and workers (who enjoy some of the employment rights such as the national minimum wage, minimum level of paid holiday, the statutory minimum length of rest breaks) (GOV.UK, Employment Status).

principles, health and safety, account deactivation issues, pensions, and discretionary benefits (GMB, 2021). This CBA agreement pertains to private hire drivers only (in other words, it does not include UberEats delivery riders), who need to sign up to be represented by the GMB union and thus,[27] included in collective bargaining.[28] Union representatives were granted access to drivers' hubs to be able to interact with and support drivers.

UGT and CCOO unions, and Just Eat. The agreement, that enters into force in January 2022, includes a living wage, a minimum hourly rate, maximum hours per day, collective accident insurance, paid holiday, provision of equipment and gear, the right to organise, and information about the use of algorithms in relation to working conditions (Brave New Europe, 2021). While Just Eat employs a model of combining direct hiring and outsourcing of workers, the CBA's scope concerns only its employees.

AssoDelivery and UGL Riders' Union. AssoDelivery's (Deliveroo Italy, Foodinho-Glovo, Uber Eats Italy, Just Eat Italy) agreement with UGL was intended to enhance the social protection of self-employed riders. It included minimum compensation, allowances for night work, holidays, and bad weather conditions, insurance against accidents, training opportunities, and a financial reward for each 2,000 deliveries made (Eurofound, 2021b). The CBA was criticized by the Italian Ministry of Labour on the notions that the union is not representative of riders and the CBA is not compliant with the 2019 labour law in terms of wages in the delivery sector, which need to be paid per hour, not per delivery (Tamma, 2020).

AssoDelivery and CGIL, CISL, and UIL. The parties reached agreement on the Experimental Framework Protocol (Eurofound, 2021b), stating that the companies in question will hire riders directly, not through third parties (Digital Platform Observatory, 2021). Such commitment is to be in place until a specific register of platforms is created. The protocol anticipated the establishment of a separate body that will monitor working conditions and report any misconduct to the public prosecutor's office (Eurofound, 2021b).

Nevertheless, a recent study reports that established trade unions in Western Europe experience uncertainties in organising platform workers who are not employees due to the lack of a fixed workplace, difficulties in identifying an employer, and a lack of employment rights (Joyce & Stuart, 2021, p. 179). At the same time, accounts are emerging of the representativeness of established trade unions. Interviews with platform workers in Finland showed that they do not always feel their interests are adequately represented (SAK, 2017). When it comes to employers' associations, platforms have not been recognized as employers in many EU Member States and, thus, they cannot be represented by such organizations.

Box 6. Ensuring representation – the French approach

The French government presented an executive order (ordinance), establishing the representation of self-employed people in platform work.[29] It aims to organise social dialogue at two levels: at the level of the industry sector and at a company (platform) level.

The ordinance outlines the rules for electing representatives (e.g., TUs must exist for at least six months, and workers must work in a particular sector for at least three months to be considered as a representative) (Eurofound, 2021c). It also envisions the creation of an authority that would be in charge of organising and supervising the election of platform workers' representatives on behalf of the state, financing the training of representatives, settling disputes between workers and platforms, facilitating social dialogue, and producing reports based on the data collected by platforms (Eurofound, 2021c).

The first elections will take place by the end of 2022 and workers' organisations need to receive five percent of the votes to be considered as a representative (Eurofound, 2021c).

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27   GMB also signed a collective agreement with Hermes, a courier company, back in 2019. The agreement was a result of an employment tribunal which stated that 200 couriers have the rights to be recognized as workers, meaning that they are entitled to minimum wage, holiday pay, minimum rest breaks, and anti-discriminatory protection (Butler, 2019). The CBA introduced a 'self-employed plus' (SE+) contract, and envisioned "union representation for SE+ drivers, with negotiation and consultation based on a 'Partnership Principles Agreement' committing to 'co-operative' relations" (Joyce & Stuart, 2021, p. 181).

28   Cf. Dutch court decided that Uber drivers in the Netherlands are to be covered by the collective rights of taxi drivers.

29   At the time of writing this report, the ordinance has not been adopted yet by the French parliament.

When further zoomed in, the obstacles to ensuring worker representation in the platform economy encompass outsourcing of accounts, atomization, isolation, and short-term working arrangements, including side-hustles.

When further zoomed in, the obstacles to ensuring worker representation in the platform economy encompass outsourcing of accounts, atomization, isolation, and short-term working arrangements, including side-hustles. The outsourcing of accounts is present in on-location and online platform work; the former is associated with those who already face discrimination and high barriers to entry into the traditional labour market (e.g., immigrants and other marginalized groups), whereas the latter is related to the so-called whitening of profiles (e.g., workers from different parts of the world acquiring Western profiles anticipating better access to tasks and higher fees). Therefore, account owners and actual workers are not the same person, which exacerbates efforts to ensure representation. Next, we discuss possible ways to address collective representation challenges that are in line with current labour market development.

Addressing Obstacles to Collective Representation and Bargaining

Issue: There are no dedicated channels for expressing voices/concerns

On-location platform workers are geographically bound and it is seemingly easier to meet their co-workers and establish common interests. Some of the obstacles to achieving this could be related to language barriers (e.g., immigrant workers) or sectors (e.g., carers and domestic workers have limited opportunities to meet co-workers in person, whereas riders can meet in the streets). On the other hand, online platform workers are dispersed and isolated, making their organising ad hoc and tied to addressing acute problems. Labour organisers face difficulties in reaching out to these workers, and most workers are not even aware of any possibilities that could help them improve their working conditions (ILO, 2016). Both groups have employed digital means outside the platform infrastructure to connect and communicate (Joyce & Stuart, 2021).

Possible solution: Dedicated digital infrastructure for communication exchange

Companies should establish and maintain direct channels of communication with workers and provide adequate language support.

To further advance the position of workers, companies should establish and maintain direct channels of communication with workers and provide adequate language support. This infrastructure would support workers to inquire about earnings, equipment, etc., and it is particularly beneficial for hearing the voices of those engaged on a short-term basis. However, direct channels of communication should not be a substitute for collective bargaining, but rather constitute a supplementary component.

Platform cooperatives, by the definition and statutes pertaining to their legal form, need to incorporate workers' voices.

Platform cooperatives, which are based on democratic decision making, may also provide inspiration in this regard. Platform cooperatives, by the definition and statutes pertaining to their legal form, need to incorporate workers' voices. For instance, Stocksy, a stock photography website owned by photographers has a discussion forum where photographers (contributors) can discuss issues and have them flagged to be examined by the management board (Karanovic, Berends, & Engel, Working Paper). Other platform organisations may borrow these solutions and incorporate them within their infrastructures, in this way achieving better alignment between their interests and those of workers.

Issue: Limited scope of CBA

With a few exceptions (the logistics sector in Italy,[30] and the transport sector in France), the majority of CBA in the platform economy were reached at the company/platform level (for more details, see Box 5 above). The issue in this regard is that platform workers that multihome (e.g., work for multiple platforms simultaneously) might not enjoy the same rights as they hop between the platforms. This can intensify the insecurity and unpredictability of earnings. From the competition standpoint, agreements at the company level lead to an unequal playing field.

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30   This agreement was signed between CGIL, CISL, UIL and Just Eat; the workers will be covered by the Logistics National Collective Bargaining Agreement (Digital Platform Observatory, 2021).

Possible Solution: Sectoral approach to platform work

During the discussions hosted by the Reshaping Work Dialogue, it was pointed out that more could be done if agreements were negotiated at the sectoral level. ETUC expressed that platforms still operate in existing sectors, therefore, existing sectoral agreements could be extended. Bargaining at the sectoral level is in line with ILO conclusions highlighting that national and sectoral agreements tend to be more beneficial because of the tailored coverage they provide (ILO, 2016).

New Forms of Collective Representation

Besides union-led initiatives, there are emerging workers' associations and collectives, which attempt to empower workers (by organising them, enabling them to become shareholders/owners) and to advance working conditions.[31]

A grassroots movement, Gorillas Workers Collective, emerged in Berlin after workers' efforts to establish a council came to a halt. Gorillas Workers Collective was focal in organising protests that demanded earnings to be paid on time, improvements in the scheduling system, and proper equipment necessary for safe working conditions. Some of those who attended the protests were deactivated from the platform, reports Vice (Geiger, 2021). According to this media report, Gorillas' spokesperson said that non-unionised and spontaneous strikes such those organised by the workers' collective are not permitted (Geiger, 2021).

Some workers have also decided to overcome unsatisfactory working conditions by creating, founding or joining platform cooperatives, an emerging organisational form in the platform economy (EESC, 2021; Karanovic, Berends, & Engel, Working Paper). They utilise novel digital solutions like their mainstream counterparts, but unlike them, they are owned and governed by users, workers, or both (Karanovic, Berends, & Engel, Working Paper).

Platform cooperatives can be further differentiated into those for workers, producers (shared services), consumers, and multistakeholder cooperatives, depending on the ownership and mission (ILO, 2018b). While cooperatives are businesses like any other, they differ in their governance and ownership structure, with workers having a say in how the organisation is run, promising more fair working conditions (CECOP, 2019). However, compared to businesses, cooperatives have struggled to scale beyond preliminary initiatives (Muldoon, 2020).

Besides worker-owned initiatives, a number of cooperatively-run organisations have emerged to support workers and their collective voice. For example, Smart Coop supports platform workers and negotiates working conditions on their behalf (Charles et al., 2020; Drahokoupil & Piasna, 2019). CoopCycle is another example – a federation of bike delivery cooperatives with 58 members (workers' or producers' cooperatives) across and beyond the European Union. The CoopCycle developed software that is available for use among social and solidarity economy organisations that employ workers (CECOP, 2019). Finally, De Werkvereniging is a Dutch association that aspires to support 'modern workers', as they call them, in their efforts to make choices about their work and working conditions, but also to enjoy social benefits traditionally granted to employees.

Worker-led initiatives are not always contrary to what platform organisations may be advocating for. For instance, when Riders' Law came into effect in Spain, four workers' associations (Asociación Autónoma de Riders, Asociación de Riders Unidos, Asociación de Riders Profesionales, Asociación Española de Riders Mensajeros) representing food delivery riders sent an open letter to the European Commissioner for Jobs and Social Rights (AAR et al., 2021). In this letter, they expressed their concerns that the law would negatively affect riders, especially those belonging to minorities and underprivileged

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31   For example, these associations include Collectif Livreurs Autonomes de Paris (France), Deliverunion (Germany), Deliverance Milano (Italy), and Riders Union (the Netherlands) (Hastie, 2020).

More could be done if agreements were negotiated at the sectoral level.

Some workers have also decided to overcome unsatisfactory working conditions by creating, founding or joining platform cooperatives, an emerging organisational form in the platform economy

Digital solutions are emerging that are recording work and work processes, which can provide more evidence of working conditions.

groups that face high barriers to entry into the traditional labour market.[32] However, riders' associations recognised the importance of allowing self-employed people to collectively bargain in order to be heard and to advance their positions while keeping platforms accountable (AAR et al., 2021).

Finally, digital solutions are emerging that are recording work and work processes, which can provide more evidence of working conditions. For example, WeClockIt is an application that provides information about workloads and encourages data-driven decisions among workers; its long-term goal is to assist trade unions in promoting collective digital rights. Unit, another application, assists with establishing a union by providing digital tools and expert support throughout the process; it is generating concerns, however, as it is backed by private venture capital. Lighthouse, the governance maturity test for TUs, was developed by the UK Prospect Union to assist workers' organisations to become more responsible data stewards.

Policy Pointers

All the stakeholders that participated in the Reshaping Work Dialogue agreed that workers, regardless of their status, should have access to collective bargaining and representation. Although it is up to national representatives to decide what collective bargaining will entail in their particular context, these fundamental rights are in accordance with the European Pillar of Social Rights and should be extended to all workers.

Our policy recommendations for strengthening worker representation are as follows:

- **Collective bargaining to be extended to all workers,** regardless of their employment status.
- **Clarity on the topics** that may be part of collective agreements, taking into account the realities of new forms of work (e.g., algorithmic management as mandated by the GDPR and the Commission's proposal for a directive on improving conditions in platform work), as well as the innovative potential of platform business models.
- **Ensuring the representation of workers** by revisiting traditional forms of workers' representation as well as alternatives (e.g., worker-led initiatives; digital tools).
- **Support for workers to engage in collective representation** by (1) allocating time to workers to engage in such initiatives (e.g., join trade unions); (2) offering financial support for the creation and development of worker-led initiatives.
- **Further evidence gathering is needed to address the issue of multihoming,** which complicates collective representation, and may point in the direction of sectoral representation or an alternative solution.
- **Stimulation of social dialogue** that incorporates the views of all parties with a stake in the debate, including unions, companies, and consumers.
- **Increased efforts towards educating workers about their own rights,** including data rights and digital literacy, so that their representation is in accordance with their entitlements and comparable to that of other workers (e.g., employees).

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32   These groups of vulnerable workers encompass migrants who face legal, socio-economic, and cultural restraints, when it comes to full integration. Recent research, going beyond the literature on business models, legal arrangements, and effects on workers' livelihoods, examined the role of migrant labour in the gig economy, focusing on urban areas in Amsterdam, Berlin, and New York (Van Doorn & Vijay, 2021). The results show that platform economies offered migrants faster ways to overcome distances to local markets "in a way that other types of (informal) employment could not accommodate" (Van Doorn & Vijay, 2021, p. 15). While joining the gig economy could be viewed through the lenses of entrepreneurial freedom, for migrants, the study reveals, it was out of necessity and represented a next step to something better.

3

ALGORITHMIC MANAGEMENT AND TRANSPARENCY

ALGORITHMIC MANAGEMENT AND TRANSPARENCY

Essentially, algorithms today manage or co-manage certain elements of work in a manner previously limited to human managers

In recent years, algorithms – the core components of artificial intelligence (AI) – have become interwoven in many facets of our lives. An algorithm is understood as a computer program that follows rules to take an input, perform operations, and return an output. While the idea is modest, the impact of algorithms on working life can hardly be understated.

Algorithms are praised for their superior accuracy compared to humans, from filtering spam emails to detecting breast cancer (Women Leading in AI, 2019). Greater internet connectivity, more data and storage capacity, better processing hardware, and advances in data science have made algorithms more powerful, ubiquitous, and influential.

Algorithms have also made their way into the world of work. Essentially, algorithms today manage or co-manage certain elements of work in a manner previously limited to human managers – often referred to as algorithmic management (De Stefano & Taes, 2021).

Today, workers in a number of blue- and white-collar professions, and the majority of platform workers, are (co)managed by algorithms. Smart monitoring systems oversee workers (Pierce et al., 2015), prompt nurses to wash their hands (Boyce, 2011), and tell truckers when to drive and when to rest (Levy, 2015). Such monitoring and algorithmic decision-making typically intends to enforce compliance with safety standards and improve efficiency, but may also reduce workers' privacy and autonomy, increase stress, and create discrimination (De Stefano & Taes, 2021; Acemoglu, 2021).[33]

Consequently, algorithmic transparency has become an important issue for many stakeholders, including trade unions (Colclough, 2021) and policy makers. At the EU level, forthcoming legislation calls for more transparency and accountability of algorithms in the world of work, as discussed below.

The following sections discuss algorithmic management and transparency in the context of the workplace, focusing on pressing policy questions at the EU level. This section draws on the relevant literature and discussions from three roundtables, which brought together diverse stakeholders to voice their views and consider those of others.

How are Algorithms Used in the World of Work?

Algorithms can be applied to a dizzying number of tasks, but in the context of work, the primary goal is to complement or replace humans in performing certain managerial functions.

Box 7. AI and machine learning

An important subset of AI is called machine learning: the process whereby algorithms improve automatically through experience and the use of data (Mitchell, 1997). Machine learning systems use 'training data' to produce models, which are mathematical illustrations of the relationships between different pieces of information. The models are tested for accuracy and incrementally refined.

One basic use for machine learning is to make an image classifier. By training a model using labelled pictures of dogs and cats, the model might start to recognize their unlabelled pictures. The same idea allows self-driving cars to "see" pedestrians.

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33   For example, Amazon adopted hiring software that mostly hires men (Dastin, 2018), while Facebook ads for certain jobs (such as law enforcement roles) were not shown to women or transgender people (Kingsley et al., 2021).

At present, algorithmic management is especially important in four categories: hiring, direction, evaluation, and discipline. Each is discussed below with examples.

Hiring involves decisions about who to select for a job opening. This includes the process of publishing a job opening, reviewing applications, interviewing candidates, and selecting a candidate to hire.

In one example, Amazon developed an algorithm to review job applications and select the best candidates. This system built on data from the company's previous ten years of applications and selections, with the intention to automate a tedious and time-consuming process. Amazon was soon forced to abandon this hiring algorithm after realising that the algorithm made discriminatory decisions. In the previous ten years, Amazon had hired far more men than women, and based on this data the algorithm had taught itself that male candidates were to be preferred (Dastin, 2018). In effect, the algorithm replicated the gender bias and discriminatory hiring decisions of Amazon's human managers.

As this example illustrates, (historical) training data dictates the outcomes of machine learning, which can reflect and retrench societal shortcomings. As Geiger et al. (2020) write, "garbage in, garbage out" (p. 325). To some extent, labour platforms also rely on algorithms in 'hiring', such as verifying government ID in the signup process (Kilhoffer et al., 2020). General problems that can arise from using algorithms in the hiring process include reduced job prospects for workers with diverse work histories, and numerous other forms of bias.

Direction means issuing instructions about what needs to be done, as well as how and when it should be done. Examples include work allocation (by task or shift), matching clients and workers, and specific guidance about how a given task should be performed. Direction entails the managers using algorithms for restricting or recommending workers (Kellogg et al., 2020).

For example, the Siemens' Congleton factory in the UK uses software to plan production in real time and instruct workers on what to produce each day (Briône, 2017). Workers receive specific instructions on how to carry out each step, leaving workers with little autonomy in selecting, organising, and performing tasks. Similarly, platform workers in food delivery and personal transport receive detailed real-time instructions on their smartphones about where to go and what/who to pick up (Ivanova et al., 2018; Kilhoffer et al., 2020).

In the case of food delivery, a mixture of human managers and algorithms direct the workers and try to ensure smooth deliveries. For example, if a rider takes an alternative route to their destination than the algorithm provides, they may receive notifications and prompts to change their direction (leading them to a shorter route). This system of tracking prompts, and the pay-per-task can result in workers managing their time more efficiently, but also feeling a great deal of pressure to complete deliveries quickly. In one study, food delivery workers noted concern that algorithmic nudges to work faster conflict with their desire to ride at a safe pace, incentivising unsafe riding and causing accidents (De Groen et al., 2018; De Stefano & Taes, 2021).

Evaluation means the review of workers' activities to correct mistakes, assess performance, and identify those with subpar performance. This entails work supervision and monitoring, and reputation mechanisms for workers, which Kellogg et al. refer to as managers recording and rating the workers (2020).

For example, in call centres, software such as Cogito has been used to provide real-time productivity assessments that can be viewed by workers and managers (Briône, 2020; Wood, 2021). Workers talking too fast were shown an icon of a speedometer, telling them to slow down. Workers who sounded tired were shown a picture of a coffee cup, telling them to perk up (Roose, 2019).

Algorithmic evaluations are also used extensively in the warehouse sector. Handheld and wearable devices track workers, generating data used to rank their productivity in terms of

walking speed, how fast products are collected ('pick rate'), and how long workers spend in the bathroom (Kellogg et al., 2020; Wood, 2021).

In terms of labour platforms, Veen et al. (2020) describe how food delivery platforms evaluate workers based on customer ratings, acceptance or rejection of delivery requests, rate of order cancellation, etc. Food delivery workers on one Austrian platform were tracked by GPS and rated on statistics like deliveries per hour and average speed. If a worker's performance fell below a certain threshold for a certain time, a human manager would contact them (De Groen et al., 2018). While evaluations are intended to improve productivity and other worker metrics, they may also increase stress and psychosocial risks (De Stefano & Taes, 2021).

Discipline is the punishment and reward of workers in order to elicit cooperation and enforce compliance (Kellogg et al., 2020). This involves determining pay, decisions about promotion or demotion, and a worker's ability to receive future work. In the words of Kellogg et al., discipline is how managers use algorithms to replace or reward their workers (2020).

Relatively few examples of algorithmic discipline are presently known for traditional workplaces (Wood, 2021). However, several studies point out how Amazon uses productivity metrics collected by handheld devices, wearables, and cameras to recommend warehouse workers or delivery drivers for termination (Bloodworth, 2018; Briken & Taylor, 2018; Lecher, 2019).

In platform work, discipline more often concerns the dispensing or withholding of payment, or suspension/deactivation of workers' accounts, precluding future work. Typically, these systems intend to identify concerns related to fraudulent activity and safety. In one example, a German worker was tasked to take a picture of a store at a particular address – a form of platform work called "retail intelligence". Upon uploading a picture with correct location metadata, the worker would be paid €8.00. However, the payment was refused, as an algorithmic system determined that the GPS coordinates were incorrect. In fact, further investigation showed that the worker was correct (Johnston et al., 2020). The worker received the pay in the end, but had to spend time going through a third-party arbitration process, which is not usually a viable option.

Many other platform workers have been suspended from platforms entirely, and sometimes for questionable reasons. The App Drivers & Couriers Union (ADCU) filed a lawsuit against Uber alleging that algorithms incorrectly suspended four London-based drivers for fraud. The ADCU claims it has seen over 1,000 such cases since 2018, in which drivers claim to have been wrongly accused of fraud, and immediately had their accounts terminated with no right of appeal (Bernal, 2020). Uber contested these allegations, stating that drivers are only deactivated after human intervention, and emphasised that riders can appeal. A subsequent ruling by the Amsterdam District Court rejected drivers' claims that Uber had suspended their account without meaningful human oversight, but that Uber should give drivers access to the data used on the basis of their suspension. Without such data, meaningful appeal would not be possible (Schenker, 2021).

In short, algorithms are used by traditional companies and digital labour platforms to automate a great variety of tasks and improve organisational efficiency. While algorithms often succeed at automating management tasks, and may even perform them better than any human could, algorithms have demonstrably made unfair, erroneous and biased decisions. We discuss efforts to mitigate such harms in the following sections.

Algorithms in the Context of EU Policy

In recent years, the EU has made a number of moves towards greater transparency in the workplace. Examples include the Directive on Transparent and Predictable Working Conditions and the Platform to Business Regulation (P2B). In the General Data Protection Regulation (GDPR) and the proposal for the EU Regulation on AI, algorithmic transparency is an explicit objective inside and outside the workplace. For platform workers specifically, a consultation document on working conditions in platform work recommends "promoting

an approach to automated decision-making in platform work based on transparency, human oversight and accountability and full respect of data protection rules"[34]. Finally, the Proposal for a Directive on improving working conditions in platform work published in December 2021 features three objectives, the second of which is "to ensure fairness, transparency, and accountability in algorithmic management in the platform work context".[35]

GDPR established data protection rights including access, erasure, rectification, and portability (Malgieri, 2019). The law has also proven useful at ensuring algorithmic transparency in the workplace. In one recent case, Italy's Data Protection Authority (DPA) performed an investigation and determined that Glovo and Deliveroo, two delivery platforms, were violating a number of GDPR articles in their handling of workers' data (Garante per la protezione dei dati personali, 2021). Glovo pointed that such indications were used by the company to change its handling of workers' data. Silberman and Johnston (2020) note that GDPR can be used to address procedural problems facing platform workers, including opaque rating and reputation systems, arbitrary account suspension and non-payment.

However, GDPR is not a comprehensive solution to algorithmic transparency. One reason is that GDPR in part relies on an ex post (after their use) approach to algorithms (Selbst and Powles, 2017). For example, Article 22 (2) states that a data controller (i.e., labour platform) can make fully automated decisions about data subjects (i.e., platform workers), which produce legal effects and significantly affects them if the data controller determines this is necessary for the entry into or performance of their contract. In such cases, Article 22(3) states the data controller has to provide at least the right to human intervention, for the data subject to express their view, and contest the decision. These minimal safeguards "necessarily involve an exchange of views, a dialogue, between the data subject and the controller" (Kilhoffer et al., 2020, p. 268), which occurs after the alleged harm. Platform workers may be deactivated without any explanation why, or right to appeal, which makes challenging the decision and showing evidence of their innocence problematic (Bernal, 2020: Johnston et al., 2020). If data controllers cannot or will not solve the issue, GDPR complaints must be slowly resolved in courts, and by the time of resolution, the algorithms in question are likely to have been changed.[36]

To address AI problems within and without the workplace, the European Commission has proposed a regulation on AI, which goes much further than previous legislation. Among its innovations, the regulation would require a shift from the ex post approach (requiring explanation of an algorithmic decision after it has been made) to ex ante (requiring explanation before a decision is made), whenever an algorithm is categorised as 'high-risk'.

AI-systems "used in employment, workers management and access to self-employment, notably for the recruitment and selection of persons, for making decisions on promotion and termination and for task allocation, monitoring or evaluation of persons in work-related contractual relationships" are classified as high-risk, "since those systems may appreciably impact future career prospects and livelihoods of these persons" (Recital 36 of the EU proposal of AI act, p. 26). Many roundtable participants in the Reshaping Work Dialogue voiced support for the proposed regulation, and a slight majority felt that the regulation or guidelines are required to ensure fair and transparent algorithms in the workplace.

Finally, the proposed platform work directive establishes the goal "to ensure fairness, transparency and accountability in algorithmic management in the platform work context".[37] On the proposal, De Stefano and Aloisi write (2021):

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34   Consultation Document: First phase consultation of social partners under Article 154 TFEU on possible action addressing the challenges related to working conditions in platform work, C(2021)1127 final, p. 28.
35   COM(2021)762 final, p. 3.
36   The argument on consent and the efficacy of GDPR was not unanimous among roundtable participants. Some platform representatives emphasised the difficulty of freely-given consent in a work context, and stated that the main issue with GDPR is proper enforcement.
37   COM(2021)762 final, p. 3.

Algorithmic transparency is not primarily a technical challenge, but rather a social challenge concerning explainability (Bryson and Theodorou, 2019).

The working conditions of platform workers are fundamentally affected by such algorithmic decisions as to their pay, ranking and ability to receive further work. Not only would an organisational model based on algorithmic management be one of the triggers for the presumption of employment but also the directive would regulate such automated decisions.

Mitigating Algorithmic Harms

This section discusses theoretical considerations and practical solutions for policy makers and other stakeholders to mitigate algorithmic harms. To begin, we can think about implementing safeguards at three points in time: before using algorithms (ex ante), during their use, and after their use (ex post). The measures discussed and recommended are summarised in Figure 2. Because algorithms can be implemented in fractions of a second, most action occurs either ex ante or ex post.

Figure 2. Safeguards against algorithmic harms
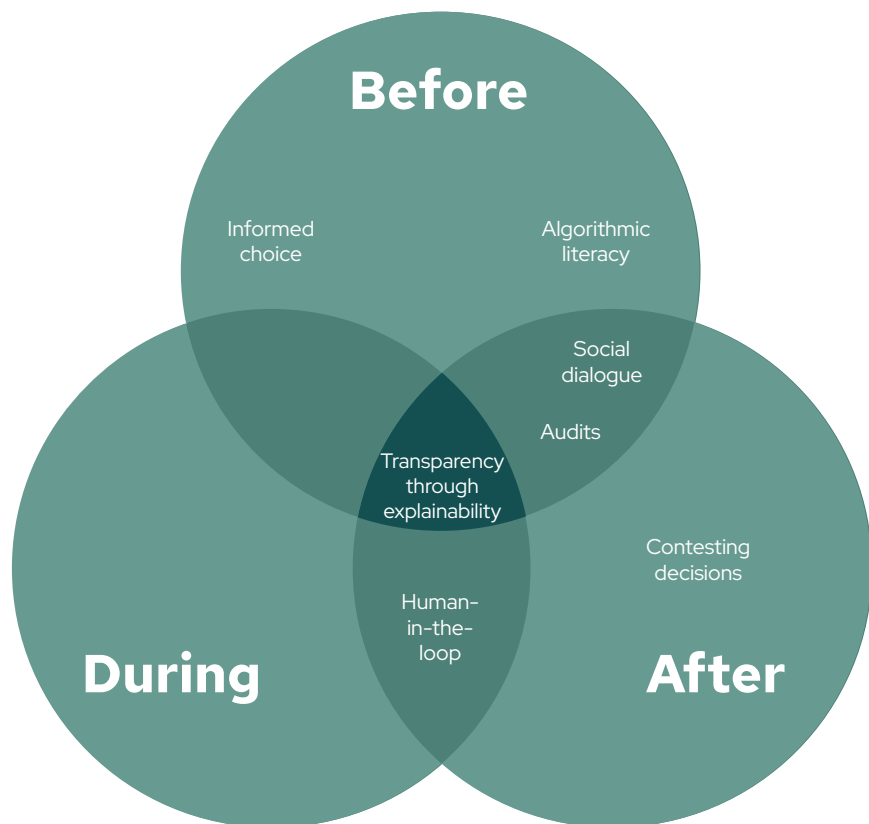
Taken together, the proposed mitigation measures would help ensure respect for existing employment-related norms (i.e., working conditions that respect health, safety, and dignity) in the increasingly automated workplace. Below we discuss six practical suggestions for mitigating algorithmic harms that can be taken up by organisations and that can also inspire policy making.

Suggestion 1: Focus on algorithmic processes. Algorithmic transparency is rather nuanced, and cannot be achieved by simply sharing code used in management systems. Rather than focusing on the transparency of a specific algorithm, it may be more useful to focus on the transparency of a specific process (i.e., delegating a task). Relevant considerations include whether the process (including algorithms) is understandable, if/how humans are involved in the process, which data are used, which

Rather than focusing on the transparency of a specific algorithm, it may be more useful to focus on the transparency of a specific process (i.e., delegating a task).

consequences can occur if the process fails, and how failures can be remedied. Algorithmic transparency is not primarily a technical challenge, but rather a social challenge concerning explainability (Bryson & Theodorou, 2019).

The data subjects of algorithms have a right to explainability, while deployers of algorithms have a duty to explain.

Suggestion 2: Ensure explainability. Explainability is defined as the ability of the individual to understand the implications of a process using algorithms, and it is a key metric for deciding whether an algorithm or process is sufficiently transparent (Women Leading in AI, 2019). Explainability is a two-way process (explanation and understanding), and if it is conceived of as a right, it entails a corresponding duty. We recommend framing explainability as follows:

> The data subjects of algorithms have a right to explainability, while deployers of algorithms have a duty to explain.

More specifically, deployers of algorithms should have the duty:

- To inform workers when an algorithm is being deployed, alongside information on which metrics and factors would produce a different outcome;
- To inform workers of their right of erasure, access, portability, and rectification;
- To inform workers of the measures implemented to promote equality and human rights and avoid bias.

These duties mostly concern the period prior to deploying an algorithm, but the right to explainability also extends to after a decision has been made. If the right to explainability and duty to explain were codified, they would expand and clarify certain rights established by GDPR. Subject to certain stipulations, GDPR establishes the rights of data subjects to express their point of view, contest or challenge a decision, obtain human intervention from a controller, and obtain an explanation for decisions made by automated processes (Malgieri, 2019).

Suggestion 3: Enable informed choice. Once transparency through explainability is achieved, informed choice becomes possible. As in other situations concerning ethics and law, informed choice requires permission granted with the knowledge of the possible consequences, also characterised as adequate information disclosure (Utz et al., 2019). Informed choice is primarily important to protect the subject (in this case, the workers affected by algorithms), but it also benefits algorithm operators by improving trust between parties. Notably, the proposal for the EU Regulation on AI refers to the necessity of informed and free choice.

As noted above, the current approach to information on algorithms is mostly ex post. Unfortunately, this does not enable informed choice before an algorithm impacts a worker. For this reason, where feasible, the ex ante approach (the right to be given information before an automated decision is made) is preferable. Participants in Reshaping Work Dialogue supported the idea that employers, labour platforms, and other entities enabling work should take a more proactive ex ante approach in certain respects. An explainability statement is a practical tool towards this goal.[38]

Social dialogue and collective bargaining are strategies with significant potential for algorithmic management.

Social dialogue is also an appropriate venue for voicing concerns about the potential overregulation of algorithms.

Suggestion 4: Stimulate social dialogue. Social dialogue and collective bargaining are strategies with significant potential for algorithmic management. De Stefano notes that social dialogue is an important tool to ensure transparent and fair algorithms in the workplace (2021), while Kaminski writes that social dialogue could become a way to co-design and co-govern algorithms that simultaneously meet the needs of a business while upholding workers' rights (2021). Social dialogue would mean negotiating collective agreements on algorithms in the workplace, and could also entail developing voluntary codes of conduct for algorithms in the workplace, or novel and innovative solutions. Multiple roundtable participants said that social dialogue is the single most important tool in ensuring good and fair working conditions.

Social dialogue is also an appropriate venue for voicing concerns about the potential overregulation of algorithms. For example, platform representatives in one roundtable voiced concern that some algorithmic decisions (i.e., suspending a worker) may require speed for legitimate safety reasons. Requiring a human-in-the-loop to confirm a decision,

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38   The arguments concerning informed choice were not unanimous; some platform representatives voiced strong disagreement, emphasising the complexity and practical difficulties of freely-given consent in the work context. The platform representatives proposed strengthening enforcement of GDPR as an alternative to rethinking how/when workers need to consent to algorithmic management.

For very consequential management decisions, like hiring, firing, or promoting a worker, it is preferable for algorithms to augment human managers rather than replace them.

or otherwise slowing the process, may result in real-world harm. Workers and employers can deliberate to find practical solutions in such cases, minimizing the potential harm from algorithms without defeating their intended purpose.

Suggestion 5: Apply a Human-in-the-loop approach. As discussed, algorithmic management is usually partial, with humans involved at some point (De-Arteaga et al., 2020). Therefore, modern management exists on a continuum from fully run by people to fully automated (Grønsund & Aanestad, 2020). Computer systems have certain advantages over humans, such as speed, accuracy, and reproducibility of results. However, certain problems are not very structured, and solutions to these problems may require human interpretation and judgement. In these situations, humans can have great advantages over AI. For example, human decisions tend to be more explainable and interpretable, and they can incorporate inputs more flexibly than AI (Shrestha et al., 2019). Due to these advantages, human-in-the-loop has been discussed in techniques like reinforcement and active learning (Brynjolfsson & Mitchell, 2017), and in oversight for autonomous systems that may create ethical problems. For very consequential management decisions, like hiring, firing, or promoting a worker, it is preferable for algorithms to augment human managers rather than replace them.

Suggestion 6: Audit algorithms. Auditing algorithms entails generating a ground truth, and assessing an algorithm's output against this (Grønsund & Aanestad, 2020). Auditing often entails assessing data sets (inputs) used by algorithms, as well as decisions (outputs), to check for bias (incorrect classifications, imprecise predictions, harm for individuals, discrimination) (Malgieri, 2019). Auditing algorithms can occur in a number

Auditing algorithms can occur in a number of ways and may be quite technical (Adler et al., 2018).

of ways and may be quite technical (Adler et al., 2018). However, a basic principle is that a data scientist, alone or with a domain expert, repeatedly alters algorithms and checks algorithmic outputs until satisfied (Grønsund & Aanestad, 2020). This can be done within an organisation or by a third party, on a one-off or regular basis. Obviously, the most rigorous option would be regular, third-party audits. However, this is more feasible for larger organisations using high-risk systems, and any auditing is preferred to none.

Policy Pointers

Algorithms are now a part of our lives, with nearly unlimited potential to solve and create problems. As this section has argued, stronger policies are needed to protect workers from the potential harms of algorithmic management. Doing so will benefit workers by securing their rights, and benefit organisations by improving the sustainability of, and trust in, their AI systems. Stakeholders of all sorts, and especially policy-makers, should consider the following measures to improve the fairness of algorithms.

Overarching points

- **Algorithms require greater transparency**, which is best understood as the right to explanation (for workers), and the duty to explain (for organisations deploying them).
- **All parties need to improve their algorithmic literacy.** For example, workers need a basic understanding on disputes over algorithmic decisions (e.g., technical aspects, human bias) and how to make and submit a complaint. Unions need a better understanding of algorithms, especially if algorithms become more subject to social dialogue.

Worker voice

- **Algorithmic management should be seen as a critical topic for social partner negotiations.** This would allow workers' representatives to participate, or even co-create, in the design, development, deployment, and maintenance of AI systems. Important themes for consultation include hiring and dismissal, rankings and surveillance, task allocation, earnings, and scheduling.

- **Social dialogue can result in novel and innovative solutions to problems created by AI systems.** For example, WeClockIt, a self-tracking app, allows workers to use their own data to better understand their working conditions, levelling the amount of personal data that workers and organisations have. Roundtable participants also suggested that worker representatives or trade unions could leverage work-related data to recreate certain employer algorithms for closer analysis.
- **Workers should receive more information on algorithms affecting them**, as foreseen by the proposed platform work directive. Most roundtable participants agreed that information on algorithmic systems should be a part of the onboarding process for new workers.
- **Workers should have greater access to their own data**, while respecting genuine privacy concerns.

4

RE-SKILLING,
UP-SKILLING, AND
MICRO-CREDENTIALS

RE-SKILLING, UP-SKILLING, AND MICRO-CREDENTIALS

To facilitate worker choice and mobility, a comprehensive approach is needed to ensure skills are transferable and verifiable where they are needed.

In EU policy circles, few ideas have as much consensus as the need for more and better re- and up-skilling of the workforce. Essentially, all European stakeholders acknowledge the scale, urgency, and complexity of skills needs, as well as the necessity of a new skills policy for the EU. Most ambitiously, this entails a paradigm shift towards lifelong learning.

The reasons for this high-level consensus are fairly straightforward. Skills gaps, shortages, and mismatches slow the innovation and adoption of new technologies. As the economy evolves, certain skills lose labour-market relevance while others grow in demand. Among these, digital competencies have climbed to the top of the EU agenda.

Digitalised workplaces require technical skills and proficiencies, as well as the ability to self-regulate and self-direct one's own learning and skill development. Other needs are cooperative in nature, including greater cooperation across organisational functions, between organisations, with customers, and between workers and advanced technical systems (Eurofound, 2021a). Accordingly, broader skill sets like problem solving, communication, creativity, critical thinking, career management, and time management (collectively known as "soft skills") are increasingly relevant and valued by organisations.

There are clear social and economic incentives to improve training and education. A Cedefop analysis found that 128 million adults in the EU-28+ (EU-28, Iceland and Norway), representing 46% of the adult population, are "low-skilled" and have the potential for up-skilling and re-skilling (Cedefop, 2020b). Faster up-skilling in the EU, resulting in a more productive and competitive labour force, is conservatively estimated to generate 200 billion euros per year by 2025 (Cedefop, 2020b). While up-skilling promises to particularly benefit low-skilled adults when it comes to socio-economic mobility, both up- and re-skilling are required to sustain workers' employability more generally.

However, one of the growing concerns is skills validation, recognition, and transferability. This applies between companies/platforms, educational institutions, and within and between EU countries (Cedefop, 2020d). To facilitate worker choice and mobility, a comprehensive approach is needed to ensure skills are transferable and verifiable where they are needed. Micro-credentials are often considered a part of the solution (General Secretariat of the Council, 2021).

In the EU, a number of recent political documents outline training needs and provide a framework and goals for implementation. Documents with special relevance include:

- European Skills Agenda
- Pact for Skills
- Recommendation on Upskilling pathways
- Porto Social Commitment (Portuguese Council Presidency, 2021) and European Pillar of Social Rights Action Plan
- Proposal for a Council Recommendation on VET (vocational education and training)
- Council Recommendation on Youth Employment Support

On December 10, 2021, the European Commission presented proposals for Council recommendations on individual learning accounts and micro-credentials, which were announced in the Skills Agenda.[39]

These policy documents are important for establishing specific goals and actionable plans in training and education. For example, the Porto Social Commitment established an

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39   Proposal for a Council Recommendation on individual learning accounts, COM (2021)773 final; Proposal for a Council Recommendation on a European approach to micro-credentials for lifelong learning and employability, COM (2021)770 final.

ambitious EU target of 60% of adults participating in training every year by 2030. Taken together, these documents communicate that up- and re-skilling are an urgent necessity, and must be implemented cooperatively on all fronts.

This section focuses on skills and credentials for workers in diverse forms of work (DFW), for whom lifelong learning has particular relevance and challenges. For many platform workers, temporary agency workers, solo self-employed, and others, the temporary nature of contracts necessitates constant skills development to ensure the best chance of finding future work.

We begin with a discussion of up- and re-skilling in the EU, in general, and specifically for workers in DFW. Second, we discuss credentials and micro-credentials. Third, we discuss funding of skills development, while providing suggestions for some innovative approaches in this regard. Finally, we suggest a handful of policy pointers that can serve towards concrete and actionable solutions.

Up- and Re-skilling

The need for training and education is not new, and yet discussions on skills are very different now than in the recent past. What makes the discussion so prominent now can be summarised in four main points.

First, workers transition between jobs with higher frequency than before. One recent survey in France found that 33% of workers will change jobs in the next two years (Cedefop, 2021b). New jobs almost invariably require new skills, particularly of a technical sort. Recently, proficiency with fast-changing tools like collaboration and productivity software has become indispensable as more people become active in AI-mediated work. Moreover, soft-skills like resilience and self-management are more important with frequent job transitions.

Second, jobs are more demanding than ever before in terms of skills required. For example, most online job ads specify numerous requirements such as technical and language skills, even for low- or medium-skilled occupations (Beblavỳ et al., 2016a). Furthermore, digital skills are becoming increasingly important (Beblavỳ et al., 2016b). Compared to a few years ago, the same job in 2022 is likely to require more multitasking and reliance on technology. For example, a supermarket employee may need to use technology for inventory management, and a delivery person may need to use new logistics software. According to participants in the Reshaping Work Dialogue, companies increasingly demand soft skills as well. Seldia, a European direct selling association, remarked that a sales representative nowadays attends training programmes not only about selling but also about team building, management, public speaking, and communications.

Third, high-level labour market shifts due to digitalisation and automation are changing the marketability of skills and entire occupations. Some formerly in-demand jobs are disappearing due to the automation or outsourcing (World Economic Forum, 2020). Recently, food delivery platforms began rolling out robot food deliveries (Hawkins, 2021), which threaten to displace delivery jobs. Concerningly, demographics with particular vulnerabilities in the labour market may be disproportionately affected by the shift away from staple professions. For example, people with disabilities in Austria have been affected by fewer positions for manual labour and call-centre work (Kilhoffer & Baiocco, 2019).

In a related shift, demand for newer and more technology-driven jobs and skills far outnumbers the supply of suitable workers. 40% of European adults lack basic digital skills, and over 70% of businesses have said that the lack of staff with digital skills hinders investment (European Commission, 2021b). In 2019, German firms averaged six months of searching to fill each tech position (Anderson et al., 2020).

Finally, the COVID-19 pandemic has fundamentally changed the workplace in important ways. The pandemic has led to huge job losses, driven by social distancing measures to

slow the spread of the virus, especially in the service sector (hospitality), sales, and elementary and blue-collar occupations (Eurofound and European Commission Joint Research Center, 2021). A conservative estimate by Pouliakas and Branka (2020) showed 45 million jobs in the EU-27 are at high risk of disruption because of the inherently higher risk of coronavirus exposure. Similarly, social distancing measures have led to expansive reorganisations of work in remote format.

At the same time, workers in DFW are less likely to have access to training. One significant reason for this is that training obligations and opportunities are traditionally defined by collective bargaining agreements, or embedded in an employment relationship, often conducted during working time, and for certain sectors and certain types of training, paid by the employer or with joint funds. However, in DFW, trade union membership is limited, and workers usually have no (fixed) employer. As a result, they usually lack access to training through the workplace, which implies that training must be handled differently. In practice, this often means that such workers, especially those self-employed, need to self-fund their own ongoing training and education if they are to have any. Additionally, the European Skills Agenda does not cover many workers in DFW or all sizes of companies (ETUC, 2020).

Skills Taxonomies in a Rapidly Changing Labour Market

It is crucial to consider how we understand skills and skills demand. While a number of official typologies exist (e.g., European Skills, Competences, Qualifications and Occupations (ESCO), US O*NET, UK Standard Occupational Classification (SOC)), they tend to rely on outdated or irregularly updated data, focused on a specific sector, or derived from individual expert consultations (Beblavỳ et al., 2016a; Kilhoffer, 2020). Therefore, they may fail to account for recent changes in occupations and skills. This is especially problematic given the increasing velocity of change in the labour market.

In order to ensure parties responsible for providing training and skills development have up-to-date information about labour market needs, we can rely on three sources: the World Economic Forum's taxonomy, AI, and real-time data published by companies.

First, the World Economic Forum's taxonomy may provide a very usable framework, with better and more explicit inclusion of soft skills (e.g., working with people, self-management, and sufficient flexibility). Moreover, this taxonomy focuses on 'creating a single language' for skills, and in doing so, uses a novel clustering approach on skillsets to better indicate the relationship between skills (World Economic Forum, 2020).

Second, a more agile approach to skills taxonomies is now possible due to advances in AI and data sources. Efforts from European researchers to this end are noteworthy, relying on job market intelligence (JMI) gleaned from online web portals, traditional typologies, human expertise, huge levels of computing power, and advanced natural language processing and other AI techniques (ETF, 2019).

Better skills and jobs data would likely provide indispensable information to European training and education solutions. For example, JMI can provide more accurate information on the jobs and skills currently with the greatest demand, and forecast demand in the future. This will help ensure that relevant training options can be planned and made available, even as innovation and new technology bring about further change.

The AI approach to building and maintaining an occupation and skills typology is not perfect, however. For instance, online job ads are designed for recruitment rather than analysis. While online job ads are becoming more representative of the general labour market, they still tend to favour higher-skills and technical jobs (Carnevale et al., 2014), and they may not include DFW as comprehensively as traditional employment positions.

Still, the AI approach has a huge number of benefits compared to traditional methods, including vastly improved timeliness, granularity, and maintenance costs. Ultimately,

understanding skills and occupations is a labelling or classification problem, in the AI-sense. These require big data sources, data science methods, and domain expertise to answer.

Finally, companies can provide valuable information about skill needs. Upwork, the world's largest online platform for sourcing freelance talent, regularly posts a list of skills in demand. Cedefop's study of platform workers' learning practices (2020a) found that these played an important role in supporting workers in skills development and were indeed one of the six key mechanisms through which online labour platforms indirectly supported the learning and skills development of workers.

Credentials and Micro-credentials

As the labour market demands skills that are in line with new trends, we encounter the related issue of skill certification. This is closely linked to skills transferability, and hence labour market mobility. The issue of skills certification is not new; scholars have researched recognition of prior learning, its connection to adult learning, social inclusion, and economic advancement, and its barriers, since at least 2005.[40] However, the labour market is changing more rapidly than ever, and more individuals make career transitions more frequently. This implies that the certification and accreditation processes have become more important, and micro-credentials may present a solution.

Credentials traditionally refer to formal education and training (i.e., university degrees, official VET programmes), serving to prove that an individual has satisfactorily completed a certain programme. By contrast, a micro-credential is a qualification providing evidence of learning outcomes acquired through a short, transparently-assessed course or module (European Commission, 2020b). Micro-credentials, in addition to other forms of credentials and validation of skills/competences, are important for workers' mobility within or between sectors, and to different locations.

Micro-credentials have a number of advantages — some of which could disproportionately benefit workers in DFW. Courses/programmes to attain micro-credentials tend to be shorter, cheaper, and more specific than formal learning options. As a result, micro-credentials support more targeted and flexible up- and re-skilling, regardless of the individual learner's needs. These advantages could help address three important barriers to adult learning — lack of time, loss of income due to taking time off work to train, and cost of the courses.[41] Because micro-credential courses tend to be shorter, it should be easier to develop and provide courses to address the most in-demand skills in a fast-changing labour market. For example, the Vilnius Vocational Training Centre of Technologies offers brief courses that lead to micro-credentials in high-demand subjects like IT, computing, business, and visual technology.[42] Moreover, programmes for micro-credentials are typically less time-consuming and less rigid than formal certifications, meaning that people who require greater flexibility — namely workers in DFW — could especially benefit. Finally, micro-credentials can be part of measures targeting labour market inclusion and activation. Due to their flexibility, micro-credentials may be well-suited to facilitate learning and professional transitions at any stage of life.

However, it is relatively difficult at present to verify micro-credentials, or other skills certifications acquired outside of formal education, training, and job experience. This is especially relevant for workers in DFW, who may make more frequent professional transitions, and often cannot cite an employer as a reference. An important shortcoming is the lack of mutual recognition of micro-credentials. Any given micro-credential may be recognised widely, or by only a few institutions (i.e., specific universities). Moreover, UNESCO noted the lack of an efficient one stop shop that can collect, store, verify, and connect educational credentials across different countries (Chakroun & Keevy, 2018), implying that micro-credentials need rethinking.

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40   See examples including Andersson and Fejes (2005), Andersson and Harris (2006), and more recently, Bohlinger (2017) on recognition of prior learning (RPL) – also known as accreditation of prior learning (APL) or accrediting prior experiential learning (APEL).
41   See "Factsheet – European Skills Agenda: progress on the 12 flagship actions" (2021), available here.
42   Ibid.

To illustrate, the George Washington University Institute for Public Policy surveyed the credentialing ecosystem in the US (Credential Engine, 2019), finding hundreds of thousands of micro-credentials in the US alone:

- 370,020 credentials issued by postsecondary educational institutions;
- 7,132 credentials from massive online open courses' (MOOC) providers (mostly completion certificates);
- 315,067 credentials from non-academic organisations, mostly digital badges and course completion certificates;
- 46,209 credentials from secondary schools.

Given the huge and growing number of micro-credentials from all sorts of providers, particularly newer and modular short-term education and training programmes, it is a significant challenge to document, share, and verify workers' skills.

Thus, the EU has prioritized improving the validation of non-formal and informal learning outcomes through a number of initiatives. These include proposals for a recommendation on individual learning accounts (ILA)[43] (digital accounts for all individuals, which provide training entitlements to be used throughout their careers) and micro-credentials.[44] Both of these proposals intend to support lifelong learning and employability by addressing several important barriers to adult learning: motivation, time, and funding. The proposal on micro-credentials is expected to make qualifications of all sorts easier to understand and more comparable, as well as provide quality assurance, and promote professional development and lifelong learning — all goals of the European Qualifications Framework. The benefits would extend to ordinary citizens, employers, and educational institutions (Cedefop, 2020d).

Box 8. Blockchain — a part of the solution?

To achieve skills recognition, the EU has suggested new technologies, including blockchain, to facilitate recognition of credentials of all sorts (Council of the European Union, 2018). Blockchain would have a number of key advantages in the field of skills, training, and education certification (Grech et al., 2021). The American Council on Education notes personal data agency, lifelong learning, and the power of connected ecosystems as benefits (Lemoie & Soares, 2020). While the European Commission expressed some concern for a perceived lack of maturity in using blockchain for educational purposes (European Commission, 2020b), it is not clear if these concerns are founded. Several American universities already use blockchains so that students have complete access to and control of transcripts, badges, certifications, references, recommendation letters, and licensures (Lemoie & Soares, 2020).

Significant theoretical and technical challenges associated with developing a better validation framework remain. As mentioned above, the sheer number of micro-credentials is enormous and growing. Moreover, if micro-credentials continue to grow in popularity, it becomes a much more difficult task to determine which skills are/ought to be transferable (i.e., from one professional context to another), and which are not. On this point, participants in the Reshaping Work Dialogue emphasised that there will always be a need for formal certifications, for example, when handling people or operating heavy machinery. However, formal certifications are not incompatible with transferability. In the Netherlands, for example, a skills passport strategy has begun facilitating mutual recognition of skills between sectors, whenever possible (Lievens, 2020). This innovative approach illustrates how wider recognition of credentials benefits individuals and labour markets more generally, by reducing the costs and difficulties associated with labour market transitions. This benefits workers and businesses alike.

Ultimately, a micro-credentials solution for the European Union can be envisioned in many forms. The principles outlined by the European Commission[45] (infrastructure based on open

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43   COM (2021)773 final.
44   COM (2021)770 final.
45   See "A European Approach to Micro-credentials: Output of the micro-credentials higher education consultation group". See also COM (2021)770 final.

standards, interoperable data models, open and portable format for metadata, focus on social inclusion, etc.) are sound. It is especially welcome that the Commission has explicitly called out the relevance of micro-credentials for workers in DFW, urging member states to leverage micro-credentials in their employment policies for[46]:

> ... promoting the use of micro-credentials as a means to update and upgrade the skills of self-employed and non-standard workers, including people working through platforms

However, we should not overlook a crucial aspect of micro-credentials − recognition regardless of member state. For this, strong coordination is required at the European level. A harmonised approach would help meet the commission's ambitious 2024 timeline on a micro-credentials approach.

Funding Skills Development

Funding ambitious training programmes raises important practical and philosophical questions. For example, is the ultimate responsibility to fund training on the individual, firm, sector, or society? What is the role of member states and the European Union?

In a certain sense, there is not an obvious lack of funding for training. EU instruments such as the Recovery and Resilience Facility, Horizon Europe, Cohesion funds, European Social Fund+, and others make funding widely available. Cedefop identified very promising up- and re-skilling programmes benefitting from a variety of local, national, and regional funding. In many cases, the best practices noted by Cedefop, as well as roundtable speakers, benefitted from co-financing from various stakeholders.

Therefore, it appears that there are wide-reaching initiatives that fund skills development in principle, although opportunities for workers in DFW are more limited. More pressing problems lie in: the relevance and quality of training programmes; the difficulty of matching training programmes with suitable workers; time requirements for training; workers' lack of motivation and guidance; and workers underestimating the importance and relevance of training. We discuss below four possible solutions for tackling these problems.

Solution 1: Providing career guidance

Stakeholders that took part in the Reshaping Work Dialogue perceived a general lack of quality with regard to training programmes. In the experience of unions, for example, most training provided to workers is of low quality, does not lead to recognition of skills and competences, and lacks a clear link to career development. Others emphasised that there is a great deal of free learning content online, such as on LinkedIn and a variety of dedicated learning platforms. However, the amount is overwhelming for workers and difficult to sift through. Since the quality is mixed, the investment of time and money may be unreasonable.

One reason for the lack of quality may be related to an issue in education policy that can be called "the trap of upscaling". Essentially, many small-scale education projects show great promise, but attempts to upscale them fail due to issues in the trial run, systemic complications that are difficult to account for, or hidden factors precluding replication (Al-Ubaydli et al., 2019). The difficulty of upscaling an idea that works well on a small scale is especially important to consider, given the huge, complex, and diverse landscape of education, training, and labour in the EU.

One important solution relating to relevant and quality training options should be proactive career guidance. Workers are faced with a wide range of re- & up-skilling choices, and they may have difficulty pinpointing the right training that would benefit them personally in their lifelong learning and development, to help them attain success in their career.

Granting access to career guidance can help workers' motivation and engagement, and it

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46   COM(2021)770 final, p. 12.

would help ensure the success of the training. Career guidance may also help address a certain difference in philosophies among stakeholders. On one hand, companies stated that training should be driven by specific labour market needs. On the other hand, workers' representatives emphasised a more "person-centric approach", driven by a broader sense of individual identity, and lifelong learning as a human right. Properly executed, career guidance can help satisfy the needs of both markets and workers in tandem, supporting more sustainable career and life transitions (Cedefop, 2020c).

Solution 2: Actively involving workers in the design of training programmes

According to the proposed council recommendations on individual learning accounts and on micro-credentials, the main bottlenecks to providing training for individuals are currently motivation, time, and funding. Motivating huge numbers of Europeans to begin re- and up-skilling is not trivial, and in fact may be a greater challenge than funding.

A few barriers are especially important for workers in DFW. First, training may cost money (even if heavily discounted). With earnings considered rather low in some sectors of the platform economy, for instance, it is less reasonable for workers to devote their limited resources towards up- and re-skilling. Furthermore, the training occurs during the worker's own time. This implies opportunity cost and foregone earnings, with often unclear prospects for further career development. This raises the question of relevance and incentive for workers to engage in these programs.

Companies may consider directing workers towards training options with the highest labour market relevance, and the chance of advancing the workers' goals. For example, the Adecco Group and other companies in the temporary employment sector tend to explicitly connect training with labour market demand, which incentivises private investment, and links training to job guarantees.

Uber, motivated to attract and retain talent, offers discounted training opportunities as well as digital tools to aid in professional development. However, relatively few workers have taken advantage of the initiatives. Seldia remarked that, for some of its company members, the training programme design actively involves workers, which seems to produce better buy-in.

To better align training with workers' needs and improve uptake, companies can consider options such as surveying workers on their motivations as part of their onboarding process, co-designing training programmes with workers, and allocating a certain number of paid hours towards workers' training. This may help implement more suitable training programmes, with sufficient incentives for workers to take part. Ultimately, companies could benefit through worker retention and higher worker satisfaction.

Solution 3: Stimulating public-private partnerships

Public-private partnerships (PPP) can be an effective means to implement solutions for workers in DFW, as well as workers more generally. Essentially, PPP is a management arrangement between fully private and fully public institutions, wherein the private and public sector participate in the common, long-term goal of providing public services (Tikhomirov et al., 2016).

The main reasoning for such an arrangement is to provide public goods at lower public cost (Bult-Spiering & Dewulf, 2008), but also to increase the quality and efficiency of public services (European Commission, 2003). PPP can have a number of advantages, such as achieving more mutual benefits between businesses and governing bodies, and more equitable creation of "market" and "social goods" (Tikhomirov et al., 2016).

However, most research on PPP in the field of education and training focuses on VET and on-the-job training (Borodiyenko et al., 2021). While innovation is certainly possible, past examples of PPP are more applicable to VET and on-the-job training rather than other

parts of lifelong learning. Moreover, the context (national and other) matters a good deal in PPP.

The Netherlands and UK are particularly developed in their implementation of PPP: for example, in past and ongoing collaboration between public and private employment services. Other countries including France, Germany, Italy, and Spain use PPP with moderate frequency, and other European countries even less so (Tikhomirov et al., 2016). The traditions of a given country or system, including historical socio-economic factors, and local policy frameworks, therefore, impact the feasibility of such a model (European Commission, 2003). Moreover, the process of designing, implementing, and operating a successful and mutually beneficial PPP arrangement is complex (Bult-Spiering & Dewulf, 2008).

On balance, it seems that PPP in training and education is more likely to be successful when (1) focused on addressing current imbalances in the supply and demand of labour, especially with a vocational focus and (2) in specific national/local contexts. Policy makers should therefore consider PPP to be one possible approach to greater involvement of organisations in skills development (Dunbar, 2013).

Solution 4: Digital tools to plan and guide funding

Finally, funding from all sources should be allocated where most needed. Participants in the Reshaping Work Dialogue emphasised the relevance of AI systems in providing labour market intelligence (LMI), such as that contained in the project "Towards the European Web Intelligence Hub". Such tools can be used to represent current gaps in supply and demand for skills, as well as forecast shifting skills needs. This LMI would likely provide valuable data to stakeholders, allowing them to direct funding where it is most urgently needed, now and in the future.

Policy Pointers

Based on the discussion and evidence presented above, we provide some policy pointers below in an effort to improve skills development opportunities for workers in diverse forms of employment.

Overarching points

- **Credential recognition requires a European-scale solution.** A centralised authority, which can "certify the certifications", would help ensure trust, and promote inter-European mobility, data portability, and the interoperability of credentials. Blockchain is a promising technological solution.
- **Skill plans should be ambitious with respect to social goals** such as inclusion. Targeting groups with particular vulnerabilities is often a good strategy because people's needs and motivations are easier to demarcate. For example, in the Netherlands, Taalakkoorden agreement gives employers a subsidy to provide language training to workers with low language skills (mostly migrant workers) in or outside the workplace. Similarly, the Danish company Specialisterne trains people with autistic spectrum disorders in tech skills and supports them in job placements.
- **Consider more public-private partnerships.** While the local and national context is important, several such partnerships have been quite successful in connecting private enterprises and public education institutions. For example, public and private employment services have different advantages, which complement one another.

Worker motivation and inclusion

- **The bottom-up approach, including the worker voice and social dialogue,** is essential. The most clever and well-funded programme will still fail if the target population is ignorant of or apathetic about it. Social dialogue is a useful framework to define training needs and identify opportunities, while social partners are well-placed to implement programmes on the ground.

- **Career guidance is an excellent approach.** Training is much more appealing if it fits in with workers' broader plans and aspirations. Career guidance, such as the UK's Mid-Life Career Review, leads workers to useful resources, improves training outcomes, and fits well with the lifelong learning approach.
- **Training quality matters.** If training is perceived as low-quality, it will hardly motivate adults to pursue lifelong learning. It is highly advisable to involve the ultimate beneficiaries in the design and implementation of re- and up-skilling programmes. Moreover, programmes should be flexible, accounting for people's diverse needs.

Data

- **Good data is expensive but worth it.** More comprehensive and granular jobs and skills data are needed at shorter intervals. This includes labour market surveys, as well as sustainable and systematic monitoring and evaluation of re- and up-skilling interventions. Good evaluations also help ensure the responsibility and accountability of the stakeholders involved, and thus effective funding.
- **AI-based labour market intelligence systems are indispensable.** Simply stated, the labour market is moving too fast to rely on annual/intermittent surveys and outdated typologies. AI systems, like the one developed by CRISP (University of Milan-Bicocca) and the European Training Foundation (ETF), deserve more attention and funding. They should be leveraged to understand skills shortfalls in the present and the foreseeable future, and target the most pressing mismatches in skills supply and demand.

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