Chapter 9
Wellbeing and Mental Health at Work in the Age of Artificial Intelligence:
Strategies and Opportunities for Digital Unionism

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ABSTRACT

This chapter analyzes how artificial intelligence (AI) can be a positive challenge to improve labor union services in mental health at work. Automation and digitalization, while offering benefits in efficiency and productivity, also introduce new psychosocial risks, such as technostress. The chapter explores the role of unions as guarantors of workers' rights in digital transformation processes. Also justifies the need for an organizational transformation of unionism, including updating service structures, digitizing the union, and developing a proactive strategy towards occupational mental health. The chapter concludes by arguing that unions must adopt a proactive approach, use new technologies responsibly and collaborate with other social actors to protect the mental health of workers in the digital age.

INTRODUCTION

Any important change must begin by describing the destination of the journey. Perhaps, when Champy (1997) wrote this phrase about the importance of preparing for change in the organization more than a quarter of a century ago, the destination

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of said journey was more visible and imaginable. The changes that were taking place in that historical context at a global level in the world of work were very important, but perhaps also more predictable. However, in the current digital revolution of artificial intelligence, we are not yet able to glimpse what the destination of that journey will be. The path of this revolution is beginning to take its first steps, at an unusual speed, and as a result, on our near horizon, a variety of paths appear blurred, generating uncertainty in the choice of which one to take. As can be expected, the choice of one path or another determines the destination of the journey. Therefore, the choice is not trivial.

The world of work is changing at a rapid pace. Organizations, to a greater or lesser extent, have begun the transformation that is being triggered by the digital explosion and AI. Workers, forced to adapt to all of this, are often the weakest link in the chain.

In this context characterized by the uncertainty of the future, labor unions, as a social agent, face the challenge, but also the opportunity, to "rebuild" their role (Nissim & Simon, 2021) and to actively participate by adding value to the object that gives meaning to its essence.

If we assume that the main purpose of a labor union is to represent and defend the rights and interests of workers and that its mission includes, among others, improving working conditions, guaranteeing safety at work and promoting equality and the well-being of workers, in the face of this uncertainty about the future of digital work, the transformation of the labor union as an organization becomes urgent and mandatory.

The EU Regulation establishing harmonized rules on artificial intelligence (2024) in its art. 165, advocates the participation of labor unions, among other social and economic actors, as interested parties in the objectives of an ethical and reliable implementation of Artificial Intelligence (AI), as well as in the promotion of voluntary codes of conduct with clear objectives and indicators that allow the assessment of compliance with the ethical guidelines emanating from said regulation. It grants labor unions the right to be informed at the organizational level before the commissioning or use of a high-risk AI system in the workplace. It is intended, together with other measures, to contribute to improving working conditions and consequently, to develop ethical AI that respects the legislation and rights of European citizens.

Of course, the legislator advocates for a broad participation of social, economic, scientific agents, in the generation of a safe context in accordance with European law and legal framework, which allows the development of AI. Without a doubt, labor unionism must take advantage of the role that the EU grants it, assuming a role as guarantor of workers' rights in the face of the potential danger that the application of AI at work could pose. Of course, in the digital and technological context that is

being built right now and in aspects as relevant as those that derive from work and health, the role of labor unionism should be highlighted.

In addition to the above, and because of the impact of the pandemic on society, an area of special concern worldwide in general, and in the European environment in particular, is that of the well-being and occupational health of workers (Escanciano, 2021). The constant increase in the intensification of work, working at high speed or to tight deadlines (Eurofound, 2010, 2024), is highlighting the relevance and deterioration of mental health at work.

The increase in the incidence of work-related mental health problems in Europe and the United States of America is a fact that is combined with the uncertainty of digital transformation and the emergence of AI in the workplace. For example, the Mental Health survey America (2021) reported that 83% of employees felt emotionally exhausted by their work. Eurofound (2020) found that 44% of European workers suffered from work-related stress at least once a month. Of course, workers place much more importance on mental health related to their work. In the Ineco Technical Report, Idea & Puntual (2024) in Argentina, *Well-being and emotional and mental health at work post-pandemic,* 82% of respondents value their emotional and mental health much more after the pandemic, which positions this factor as the most relevant and the one that has grown the most in importance compared to other previous studies.

If we look globally at what factors may have been contributing to the rise in the incidence of mental health problems, we find factors such as the 2008 financial crisis, increased work overload and pressure to maintain productivity in highly competitive environments, and more recently, the COVID-19 pandemic. These are factors that have gradually contributed to the deterioration of mental health in the workplace today (APA 2011; EU-OSHA, 2005, 2013; Eurofound, 2020).

This chapter explores how AI can be, beyond the dangers and uncertainties it presents, a great positive challenge to improve labor union services in an area of such relevance and burning topicality as mental health at work, and also, in its role as guarantor of workers' rights in the processes of digital transformation of companies and in the evolution of work.

For example, given the risk posed by algorithmic biases and the lack of transparency about their operation within the limits established in Europe by the EU Regulation establishing harmonised standards on artificial intelligence (2024), labor unions, within the framework of participation established by said regulation, must advocate for transparency, that is, they must bring to light the categories of data and the main parameters that the systems take into account and make them evident so that employees can understand how the decisions that affect them are made. They must also supervise decision-making, so that these are made with human supervision, especially in those decisions that affect employment relations or aspects derived

from e-mental health. In short, transparency, human supervision, data protection and fairness are fundamental principles for the responsible use of AI in employment relations, especially in the field of mental health at work. Ethical AI practices and the legal framework must ensure that technology is used for the benefit of all and not for discrimination or the violation of rights.

The chapter begins by analyzing the future of work and current trends that impact employee mental health. Automation and digitalization, while offering significant benefits in terms of efficiency and productivity, also introduce new psychosocial risk factors that can lead to technostress (Salanova et al., 2014; Brivio et al., 2018; Martín, 2021; Masluk et al., 2024). These trends make it imperative for unions to adapt their strategies to support workers in this new environment and minimize the risks inherent in change in a digital and BANI environment (Brittle, Anxious, Non-linear and Incomprehensible).

H-Work project (2020), a multidimensional intervention model is presented, which comprehensively addresses mental health issues at work through new information and knowledge technologies, such as continuous monitoring of emotional well-being, and the provision of personalized interventions through digital platforms. These technologies allow for early identification of problems and a rapid and effective response, improving the overall well-being of employees.

The role of labor unions in this context could be redefined as facilitator and promoter of the responsible and effective use of AI for mental health at work. Practical strategies that labor unions can adopt are explored, including the implementation of tailored mental wellbeing programs and stress monitoring tools.

This analysis underlines the need for labor unions to take a proactive and adaptive approach, using AI not only to address current challenges but also to open up new avenues of support and protection for workers in the digital age.

The chapter also justifies the reasons that give rise to the need for organizational transformation of labor unionism. These refer to:

a) The need to update service structures to adjust them to the requirements of the new environment, to the evolution of the worker and to the blurred circumstances in digital work.
b) The also necessary digitalization of the labor union.
c) The social imperative to develop a strategy with a proactive approach to occupational mental health.
d) The aspiration to regain part of the lost influence over the legislative power.
e) The improvement of external communication and collaboration through strategic alliances with actors in favor of mental health at work. Let us not forget here the 2030 agenda, and specifically the role of Sustainable Development. Sustainable Development Goals (SDGs) and goal 17, *Partnerships for the goals*.

It is certainly time for change. Not evolving is not an option.

THE FUTURE OF WORK: CHALLENGES, CHANGE AND DIGITAL TRANSFORMATION

The construct "Future of Work" encompasses an intricate web of challenges and opportunities that are being shaped as automation, artificial intelligence (AI) and digitalisation advance at an unprecedented pace. However, it is a construct that has historically been widely speculated about (Lucas, 2013). Following *the end of Rifkin's work (1996)* in which he predicted catastrophic social consequences resulting from increased productivity throughout the industrial revolutions, Tilly (1998) assumes the influence that technical innovation and market reorganisation will continue to influence work, but that it will be organisations that will channel the use of new technologies based on their needs. They will replace technologies with cheaper ones. Therefore, as Tilly reminds us, most future scenarios about work, many of them pessimistic, will be ontologically mediated by the needs of organisations. Those that do not respond to an organisational need will simply not happen. In any case, it is undoubted that the future of Work will have an impact beyond work itself. We are still in a "work society" that, as a result of its transformations, will modify society itself, its economic relations, organizations, jobs, the dedication of society and the social interaction maintained by workers, employers and consumers. And these changes will be far-reaching, also due to the centrality of work in our society.

The current historical moment, the Fourth Industrial Revolution, driven by automation, artificial intelligence (AI) and characterized by the convergence of digital, physical and biological technologies, is transforming the way we live, work and relate to each other. The changes are historic in terms of magnitude, speed and scope, which generates both opportunities and challenges (Schwab, 2016).

Along these lines, both optimists and pessimists to a greater or lesser extent, emphasize that this 4th industrial revolution is driving economic growth, encouraging the birth of new business models. But they also warn of the potential negative impact on the labor market, with the displacement of large groups of "analogue" employees into unemployment.

Dangers of the Future of Work

Technological innovation has always been a destroyer of jobs, as well as a major creator of new jobs (Martin, 2013). Automation may replace human labor in many industries and occupations, raising concerns about mass technological unemployment. Frey & Osbourne (2017) predict that 47% of jobs in the United States are

susceptible to automation in the next two decades. They point out that this process is already underway and is affecting a wide range of industries and occupations. They suggest a polarization in the labor market, with high-income cognitive jobs and low-income manual jobs growing, while routine jobs will decline.

Generic work, that which requires a basic education, that receives instructions and executes orders, will be easily replaced by digital technology. While creative, self-programmable and innovative work, inextricably linked to new technologies, will give rise to the growing increase in services and the birth of new occupations that can design, build and work with technological and digital systems (Castells, 1997).

The Organization for Economic Co-operation and Development (OECD, 1996) warned that in the knowledge-based economy, sustainable development and job creation required:

a) Organizational changes to strengthen investment incentives in knowledge
b) Technological policies aimed at improving organizational effectiveness
c) Investment in continuous training in new technologies for workers
d) Fostering innovation within companies

These criteria, translated into policies that encourage change and adaptation in organizations, as well as human and technological development, will enable economic and social growth.

It is worth highlighting that this context of digital transformation also presents challenges. Inequality or technological gap, unemployment caused by the digital disruption and the need to adapt to new ways of working require the attention of governments, labor unions, companies and society in general, to ensure that the benefits of the technological revolution reach all social strata equitably and that the conditions for an inclusive and sustainable future of work are created. This technological gap is the so-called digital divide, which refers to inequality in access, use and knowledge of digital technologies, which can generate differences in employment and social opportunities. This gap not only implies the lack of access to the Internet or electronic devices, but also the lack of digital skills necessary to fully participate in today's economy and society. In this sense, low-skilled workers and those with fewer economic resources start off with fewer possibilities of accessing digitalized jobs and, consequently, are more likely to swell the unemployment statistics. Also, the need for a reliable Internet infrastructure for a digital economy can aggravate the exclusion of people without access to the network, preventing their participation in the economy and society. Consequently, digitalization can create new forms of exclusion, precarization and discrimination both due to the lack of access to connectivity and the lack of digital skills necessary to participate in the new forms of work and employment.

And what role can unions play in the face of this reality? They should certainly play a key role in mitigating these negative effects and ensuring that digitalisation does not leave certain groups in society behind. They can address the demand for affordable internet access through trade union struggles, as well as getting involved in developing digital skills training programmes for workers, both from an upskilling and reskilling perspective.

Another element of relevant impact is in the labour structure. New forms of work organisation are not a new element, however, the entire explosion of the development of digital platforms and the on-demand economy is driving new ways of working, which, although they often offer flexibility and autonomy, also pose challenges in terms of occupational health and safety, social protection and workers' rights.

The problems are most evident in the reconversion processes of large productive sectors that will indeed suffer greatly from the impact of digitalisation on their work. Rapid advances in AI are having, and will continue to have, a significant impact on employment, so immediate political action will be necessary (OECD, 2023) and close labor union attention.

Of course, labor union involvement in this new digital context must focus on protecting workers' rights, defending social security, and training and skills development. To ensure access to the opportunities of the digital economy, labor unions must get involved in AI ethics committees, promoting inclusion and equity (Nissim & Simon, 2021). The key is to understand the forces at play, adapt to changes, shape technology responsibly, and harness its potential for the common good.

This step forward for labor unionism would strengthen its strategic capacity and allow it to gain social relevance among post-industrial workers. It would promote a new image of the social role of trade unionism and would gain relevance in the world of work.

Platform Work

A particularly important phenomenon in today's world of work is platform work, a product of the GIG economy. This has experienced a huge boom in recent years thanks to the digital revolution. While it offers flexibility and job opportunities, it also presents challenges in terms of working conditions and risks to mental health (González Vázquez et al. 2024).

One of the main problems with platform work is the ambiguity in the employment relationship (Dabić et al., 2023). Workers are often hired as freelancers, which can lead to discrimination in rights, including coverage of occupational health and safety regulations.

Also, the isolated nature of the work, the lack of job security, intense monitoring and algorithmic management can constitute a significant psychosocial risk and influence mental health problems. For example, sleep problems, exhaustion, stress, depression, burnout, loneliness and general dissatisfaction with work and personal life have been found in platform workers (Martín & Pérez, 2024).

Lack of autonomy, control over work and flexibility may be at the root of these problems. Algorithmic management, a central element of platform work, uses algorithms to assign tasks, monitor and evaluate the performance and behaviour of workers. This management generates a greater workload, exhaustion and stress in these workers. In short, it deteriorates the quality of working life and increases the psychosocial risks associated with these "GIG jobs".

In response to the problems generated by this new way of working, the EU and some Member States are taking action to address the challenges of platform work.

For example, Spain has implemented the "Rider Law", which introduces legal presumption of employment for delivery platform workers and transparency in algorithmic decision-making processes. Italy has enacted Legislative Decree No. 101/2019, which regulates the employment status of platform workers and extends some labor rights. France has established a legislative framework that grants a number of rights and protection to platform workers, including the right to form and join a union, the right to disconnect, and insurance against work-related accidents.

Furthermore, Directive (EU) 2024/2831 on Improving *Working Conditions for Platform Workers of the European Parliament and of the Council*, adopted on 23 October 2024, aims primarily to improve the working conditions of platform workers and protect their personal data. To achieve this, the Directive introduces a number of key measures such as the determination of employment status, i.e. it provides for the legal presumption of an employment relationship for platform workers. This means that, in case of doubt, the relationship between the platform and the worker will be presumed to be one of an employment nature, unless the platform can prove otherwise. This presumption is based on the finding that digital labour platforms often exercise a significant degree of direction and control over the people working through them. The Directive seeks to combat the misclassification of platform workers as bogus freelancers, a problem that deprives many workers of the rights and protections they are entitled to.

In addition, the Directive sets out transparency obligations for platforms in relation to the automated monitoring and decision-making systems they use to manage workers. Platforms must inform workers about how algorithms work in assigning tasks, evaluating performance and making decisions affecting working conditions, as well as the parameters and criteria used by the algorithms and the potential consequences for workers. Also, systems must be monitored by humans and there is an obligation to intervene in the event of unfair or discriminatory outcomes. Platforms

must provide a clear and understandable explanation of the reasons for a decision as well as the factors taken into account in it.

The Directive also provides for other measures that give a significant role to labor unions. For example, platforms must inform and consult workers' representatives about the introduction or modification of automated systems that affect working conditions. The Directive encourages Member States to promote collective bargaining in platform work and prohibits dismissal or any unfavourable treatment for exercising the rights established in it.

In conclusion, Directive (EU) 2024/2831 is a major step towards improving the working conditions of platform workers. The introduction of the legal presumption of employment relationship, transparency obligations in algorithmic management and protections against unfavourable treatment and dismissal are key elements to ensure that platform workers enjoy the same rights and protections as other workers. It is also true that, although the Directive sets out a general framework, its specific implementation and development is left to the Member States. The Directive recognises the diversity of employment practices in different countries and allows Member States to adapt the rules to their national contexts. It will be crucial that Member States implement the Directive effectively and that the competent authorities, as well as labor unions in their role as guarantors of labour rights, carry out adequate monitoring to ensure compliance.

Benefits of Digitalization

We cannot ignore the benefits of digitalization, artificial intelligence and, in general, everything that the 4th industrial revolution is bringing to the world of work and organizations. This is allowing us to optimize production processes, increase production and reduce costs, that is, improve efficiency and productivity.

Smart factories, where virtual and physical manufacturing systems cooperate flexibly with each other worldwide, enable full product customization and the creation of new operating models.

Robots, increasingly used in all sectors, perform tasks ranging from precision agriculture to nursing, freeing humans from more complex tasks.

The app economy creates new business and employment opportunities with low entry costs, and wearable technology combined with the Internet of Things (IoT) enables workers to operate complex equipment and stay up to date with the latest developments (Schwab, 2016; Coldwell, 2019).

Of course, the impact on quality of life can also be very positive. Digital technology offers new products and services that make life easier, more efficient and more productive. For example, AI in areas such as virtual assistants and translation software already makes communication and task completion easier. 3D printing

enables distributed manufacturing and maintenance of spare parts more easily and cheaply.

The emergence of new business models can also create employment opportunities. The 4th industrial revolution is driving the on-demand economy and digital platforms, which offer new employment opportunities for independent workers and entrepreneurs. For example, it allows workers to perform specific tasks flexibly and from anywhere in the world (teleworking or hybrid work), which gives employees greater flexibility in organizing their time and balancing their work and personal life. This flexibility can result in greater job satisfaction and a better work-life balance. However, teleworking also has its drawbacks in terms of psychosocial risks.

Sedentary lifestyle, social isolation and long working hours have a negative impact on health and safety in teleworking (European Agency for Safety and Health at Work, 2024).

A systematic review of studies published between 2010 and 2021 on the psychosocial risk factors of teleworking revealed that full-time teleworking brings with it significant changes in working conditions, with the potential to affect workers' living and health conditions. However, part-time teleworking could have a positive impact on psychosocial factors, promoting work-life balance, communication, and social relationships (Antunes et al., 2023).

Finally, digitalisation is facilitating access to information and education, allowing workers to develop new skills and adapt to changes in the labour market. New digital technologies provide access to an unprecedented amount of information and educational resources, in fact, universities, companies and vocational training centres have stepped forward to take advantage of this opportunity. Also, the provision of health services, with telemedicine and psychological and mental health support services (APA, 2024), have been shown to take advantage of new communication technologies.

Soft Skills

It must be recognised that in industrial reconversion processes, for example, the role of labor unions has been, at least in Europe, fundamental in the implementation of professional recycling, upskilling and reskilling policies, which have historically helped to improve the employability of workers affected by the reconversion.

This is where the current historical context demands the learning of new skills and greater adaptability of workers. Hiemstra (1976) already highlighted the obsolescence of certain occupations and the importance of *life Long learning* as a way of adapting to changes in the labour market and the evolution of occupations. Later, Hargreaves (2004) recognises learning as an essential element in and for life. Demand for skills such as complex problem solving, social skills and systems skills

will increase, while physical and content skills will be less in demand. The ability to continually learn and adapt will be crucial for success in the future labour market. Demand for high-level cognitive skills such as complex problem solving, creativity and critical thinking is on the rise.

The World Economic Forum lists 10 skills as the main ones for 2025 (see figure 1). It is worth highlighting the type of self -management skills, where active learning and learning strategies and the resilience, stress tolerance and flexibility, among others (WEF, 2020).

Schwab (2016) argues that resilience, stress tolerance and flexibility are essential to cope with the uncertainty, disruption and complexity that define this new era. The constant disruption in all sectors of the economy and society, the emergence of new technologies, business models and ways of working, challenge traditional paradigms and require rapid adaptation by organizations and their professionals.

Other studies justified resilience as a key competence, which can be developed, and which would have been totally necessary in situations as difficult as the one that occurred in the health sector during the COVID explosion (Comas & Crespo, 2021; Crespo, 2022), and in purely BANI contexts such as the current one.

Given the current situation, it is necessary to emphasize the need to develop greater resilience and tolerance to stress to manage the pressure for productivity and the need to constantly adapt to new technologies, as well as having more resources to deal with information overload and avoid physical and mental exhaustion (Salanova, 2022).

Flexibility to adapt to the uncertainty of the future of work will also be crucial in the face of rapidly evolving technologies and business models. It will allow us to:

a) Adapt to new ways of working, such as teleworking, the on-demand economy and virtual collaboration.
b) Learn new skills and apply them in different work contexts.
c) Work in multidisciplinary and distributed teams, and collaborate with people from diverse backgrounds and cultures; and
d) Be proactive in seeking opportunities and creating a meaningful future of work.

In short, Schwab argues that resilience, stress tolerance and flexibility are essential skills for thriving in the fourth industrial revolution. Skills that enable workers to adapt to disruption, manage stress and navigate the uncertainty of an ever-changing work environment. Developing these soft skills is not only beneficial for individuals, but also for companies and societies, which will be able to take advantage of the opportunities and cushion the risks of this new era.

Figure 1. Future of jobs report 2020, World Economic Forum.

Why Should Unions Change and Get Involved in the Digital Revolution?

Beyond the transformative historical moment that is taking place in the world of work, the economy and culture, and the benefits and dangers that we have outlined above, which in themselves justify the step forward that we propose here, labor

unionism has internal reasons, specific to its development and evolution, that call for its transformation and involvement.

Mainstream unionism has been receiving criticism from different sides since the last century. On the one hand, from political neoliberalism (Hayek, 1991; Richardson & Roberts, 1997), an aspect that we will not develop here, and on the other, from new forms of unionism, such as New Trade Union Movements (NTUM).

Regarding the content of the criticisms, the mainstream unionism is accused of having become too bureaucratic and too far removed from the bases, where there is little real participation of the members and, consequently, too much concentration of decisions in the union leadership. Problems that accentuate the loss of social relevance in the current productive economic context in Europe and the USA (Martín & Icart, 2018).

The continued loss of members, public status and effectiveness in achieving their goals is a glaring reality. Factors such as globalisation, the precariousness of employment and the fragmentation of the working class have contributed to this phenomenon. However, the homogeneity in the union representation of blue-collar workers and the immobility with respect to the industrial reality more typical of post-industrialism at the end of the last century have contributed, if possible, to the loss of this social relevance. This fact demonstrates the difficulties of traditional unionism to represent the new workers of the digital economy, such as platform workers and the self-employed.

Current labor unionism is immersed in a process of marginalization, due to the loss of relevance in regulating the labor market, the decrease in union density, the change in the composition of the workforce and the increasing instability of work (Visser, 2023).

Furthermore, the prevalence of a defensive trade union strategy, focused on the negotiation of existing working conditions, instead of seeking a real transformation of the economic and productive model, is also a reason for criticism of mainstream labor unionism. It is accused of abandoning the transformative utopia, of lacking a project for social transformation that goes beyond the defence of immediate labour interests. Hence, the NTUM advocates offensive trade union action, aimed at transforming labour relations and recovering lost rights.

The ability of mainstream unions to represent workers in the context of globalisation, job insecurity and fragmentation of the working class is questioned. They are accused of being too focused on the traditional model of industrial employment and of not addressing the needs of workers in service sectors. This union decline is attributed to the loss of bargaining power, declining membership and less influence in the public sphere (Beneyto, 2017). In addition, factors such as globalisation, neoliberal labour market reforms and deregulation have also contributed to this weakening of unionism.

This context challenges the role of unions. The fragmentation of the working class, exacerbated by the emergence of platform work, makes union organisation and mobilisation even more difficult . The social perception of the weakening of traditional unionism also leads to a decline in union membership and the perception of inaction in the face of job insecurity (Visser, 2024).

Visser stresses that after the marginalization of labor unions, can be replaced by other institutions that offer similar services, such as the State, employers, professional associations or civil society organisations. This is what he calls substitution. A phenomenon that has been gradually occurring since the beginning of the century. Therefore, considering all the above, a process of labor union revitalization is needed. A process of renewal of the trade union structure, of redefinition of the purpose and which serves as a basis for attracting more members and improving worker protection.

This revitalization requires adopting innovative strategies to organize workers and build alliances with other social actors. It involves developing new practices of participation of members and workers, with the aim of attracting more members and offering better protection to a greater number of workers, but also more diverse (young people, women, immigrants and workers in the digital economy, precarious workers, etc.). In addition, it is necessary, says Visser, to spread the innovations and thus renew a "brand image" that is more attractive to the new workforce, for example with social media campaigns, legal actions, alliances with other social movements and/or the creation of workers' cooperatives.

The relevance of the union in the context of GIG work will largely depend on its ability to adapt to new challenges and seize opportunities. The labor union must be able to effectively represent platform workers, fight job insecurity, develop new strategies and strengthen social dialogue to ensure that the digital transformation of work is fair and benefits everyone.

Certainly, one area where there is much to be done, and where labor unionism could contribute great value in collaboration with other social, economic and professional agents, is the problem of mental health at work, which is being exacerbated by the digital age.

The role that would best fit the idiosyncrasy of a revitalized labor unionism would be that of prevention and guarantee of psychologically healthy working conditions. It could also function as a social service that, in connection with mental health services, would allow workers with mental health problems to be referred to specialized services.

Let's see what the magnitude of the problem is.

Well-Being at Work and Mental Health in Digital Era

Mental health has gained significant relevance in recent times, becoming a global concern, mainly due to the increase in its incidence (WHO, 2022). Work, so central to our society, is a very relevant area of life in the etiology of this incidence (Harnois & Gabriel, 2000; Marten & Wilkerson, 2003). Work stress, work overload, job insecurity and lack of autonomy at work, among others, are factors that can negatively affect mental health.

Linked to this, the introduction of artificial intelligence and digitalisation at work can also present psychosocial risks involved in mental health and well-being at work (Dewa & McDaid, 2010).

New technologies can cause workers to become unsuitable to technological demands and to feel pressured to adapt to the new technical requirements of the job, as well as the fear of losing the job or being displaced by said technology. The possibility of being replaced by machines is facilitating anxiety and stress in workers in broad professional sectors (Sánchez-Anguita, 2017).

This situation, the result of the uncertainty of digitalization and AI, is combined with an event as important as the COVID-19 pandemic, which left a deep mark on mental health globally, but in which the younger population was especially insidious (Cao, 2020; Vivanco et al, 2020). Anxiety and depression disorders increased by more than 25% during the first year of the pandemic. This level of incidence translates into the alarming figure that one in eight people suffers from a mental disorder according to the WHO (2022).

Furthermore, the increase in work intensity and work overload, which have been a common feature of the world of work for decades, are risk factors that produce stress and negatively affect well-being at work.

Managing complex digital systems, multitasking and the constant flow of information can lead to cognitive overload, affecting concentration and mental well-being. Algorithmic management systems and digital monitoring can also increase the pressure to perform, generating stress and anxiety in workers, and limiting workers' autonomy and control over their tasks and work pace. All of this can negatively affect motivation and job satisfaction, as we have highlighted in the case of platform workers.

The negative impact of these risks on workers can lead to chronic work-related stress, which can trigger mental disorders such as anxiety, depression and burnout.

These consequences not only have repercussions on the individuals who suffer from them, but also on the organizations themselves. Mental health problems burden health systems and increase costs for companies as well. Increased absenteeism and sickness leave, reduce performance and productivity .

Psychosocial Risks in Digital Work

Psychosocial risks are those factors present in the work environment that can negatively affect the mental, emotional and social health of workers. They are related to the organization, management and content of work (Cox & Griffiths, 1996). The digitalization of work and its processes, while presenting opportunities, also intensifies and creates new psychosocial risks. The European Agency for Safety and Health at Work (2024) identifies a series of psychosocial risks associated with digital work, namely:

a) The increase in job insecurity and pressure to perform, which generates fear of job loss.
b) The constant threat of job substitution, which creates anxiety and insecurity in workers.
c) In addition, the increase in workload, time pressure, constant connectivity and the expectation of permanent availability often blur the boundaries between work and personal life, leading to an increase in work intensification and greater pressure to perform.

A recent study on psychosocial risks on platforms in Spain highlights that the very nature of this work, including algorithmic management, scoring systems, digital surveillance, lack of autonomy, job insecurity, uncertainty, and intensive use of information and communication technologies, are triggered by stress (INSST, 2024).

As depicted in table 2, presents the mental health problems that may be triggered by risk factors associated with digitalization, which are typical of the 4th industrial revolution.

Table 1. Mental health problems derived from the impact of digitalization and AI.

Mental Health Problem	Description
Stress	Algorithmic management, constant digital surveillance, performance pressure and job uncertainty can lead to high levels of stress in workers.
Physical and mental fatigue	Hyperconnectivity, constant availability and long, irregular working hours can lead to physical and mental exhaustion.
Anxiety	Performance pressure, job uncertainty and fear of job loss due to automation can cause anxiety in workers.
Depression	Social isolation, lack of control over work and job insecurity can contribute to the development of depression.

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Table 1. Continued

Mental Health Problem	Description
Emotional exhaustion (Burnout)	Work intensification, lack of autonomy and high emotional demands in some digital jobs can lead to burnout.
Technostress	Intensive use of ICT, information overload and the feeling of always being connected can generate technostress.
Sleep disorders	Hyperconnectivity and constant availability can interfere with sleep patterns and lead to sleep disorders.
Social isolation	Digitalization can reduce social interaction at work, which can lead to isolation and loneliness, especially in remote work.
Violence and harassment	Digital platforms can facilitate harassment and violence, especially in jobs that involve interaction with clients.

The combination of these factors can significantly increase the risk of mental health problems such as chronic stress, anxiety, depression and burnout. However, psychosocial risks can affect not only mental health, but also physical health, quality of life and general well-being of workers.

It is important to recognize that the effects of digitalization on mental health are also influenced by individual factors, such as personality, resilience and coping strategies, as well as the work context and company policies. Psychologically healthy organizations are more suitable ecosystems for achieving healthy change and healthier adaptation (APA, 2013).

Strategies for a Healthy Work Environment

Considering that the main predictors of mental health are work interest, the opportunity to learn new things and job security (Fernández-Montalvo, 1998), building organizations with an affinity for the culture of change due to the digital challenge and AI learning can help reduce the uncertainty of the change itself and improve job security.

In this context, various strategies could be implemented to address psychosocial risks and promote mental health at work. For example:

a) Involving workers in decision-making that affects their work, providing them with clear information about technological changes and ensuring open and transparent communication are measures that would help mitigate uncertainty and stress.
b) Providing training and skills development opportunities for workers to adapt to new technologies and labour market demands would help reduce fear of job loss and increase confidence in their abilities.

c) Designing jobs that allow for a greater degree of autonomy and control over tasks and the pace of work would improve worker motivation, job satisfaction and well-being.
   (d) Promoting a culture of digital disconnection outside of working hours, establishing clear policies on the use of mobile devices and email outside of work, and encouraging work-life balance would help prevent burnout and stress;
   (e) And of vital importance today, it would be useful to provide access to counselling services, psychological support and employee assistance programmes. These measures could help workers manage stress, deal with mental health problems and facilitate their return to work after a period of leave.

In this line, the European Agency The EU-OSHA (2024) describes good practices in promoting mental health at work, such as the implementation of collaborative robots in Portugal. The introduction of collaborative robots to automate physical and repetitive tasks allowed workers to focus on more cognitive tasks, such as quality control, which reduced physical burden and monotony, and provided them with new learning opportunities.

Also the inclusion of AI-based systems in Germany. The implementation of an AI-based system for air sample inspection reduced the cognitive load on inspectors, allowing them to spend more time on tasks that require human judgment. Clear communication and employee involvement in the implementation process were crucial in mitigating fear of job loss and fostering trust in the new technology.

And finally, comprehensive wellness programmes in Finland. Companies have implemented comprehensive wellness programmes that address the physical, mental and social health of employees, including measures to improve the work environment, training and professional development, and the promotion of a healthy lifestyle.

In summary, mental health at work is a complex challenge that requires a comprehensive approach and collaboration from all stakeholders. The strategies mentioned above, together with learning from good practices and constantly adapting to changes in the work environment, are essential to creating a future of work that is healthy, sustainable and beneficial for all.

Multilevel Interventions: A Holistic Approach to Mental Health at Work

The WHO Comprehensive Action Plan on Mental Health 2013–2030 emphasizes the need for a multisectoral approach to address mental health challenges. Transforming mental health requires a joint effort by governments, communities,

individuals and all stakeholders. Given the importance of work on workers' rights, as well as occupational health, trade unions must be, and are, a highly interested party.

Objective three of the comprehensive action plan highlights the importance of implementing promotion and prevention strategies in the field of mental health. The global goal (3.1) is that 80% of countries should have at least two national multi-sectoral programmes for promotion and prevention in the field of mental health in operation by 2030. It certainly includes the workplace as a necessary place of action to influence the well-being of workers.

The EU-funded H-WORK project (2020) seeks to improve mental health in the workplace. It aims to develop, implement and test an innovative model of multi-level interventions to address psychosocial risks in small and medium-sized enterprises (SMEs) and public organisations. H-WORK uses assessment tools and protocols to identify risk factors at work, creating a digital platform to share solutions and promote best practices across the European Union. The project highlights the importance of mental health in the workplace, while seeking to integrate multi-level interventions to create healthier and more resilient work environments, and with the involvement of organisational leaders.

The IGLO intervention model, an acronym for Individual, Group, Leader and Organization, is a multi-level approach to promoting mental health in the workplace, which is used in the H-WORK project. This model recognizes that sources of mental well-being exist at all levels of an organization and therefore interventions must address these different levels to achieve maximum effectiveness (De Angelis & al., 2020). These are:

a) Individual intervention: This level focuses on the well-being of the individual employee. Interventions at this level could include, for example, individual coaching, stress management programs, or coping skills training.
b) Group intervention: This level focuses on the dynamics and relationships within work teams. Interventions at this level could include, for example, team building workshops, communication improvement programs, or initiatives to foster a climate of social support.
c) Leader Intervention: This level focuses on the role of leaders in creating a healthy work environment. Interventions at this level could include, for example, training for leaders in mental health management, coaching to improve leadership skills, or programs to promote positive leadership styles.
d) Organizational Intervention: This level focuses on the policies, practices, and culture of the organization as a whole. Interventions at this level might include, for example, implementing wellness policies, creating mental health support programs, or changing organizational culture to reduce the stigma associated with mental health issues.

The intervention process begins with an assessment of the organization's needs using the H-WORK Assessment Toolkit (HAT). Based on the results of this assessment, specific interventions are selected from the H-WORK Interventions Toolkit (HIT) and tailored to the particular context of each workplace.

The effectiveness of interventions is assessed using the H-WORK Evaluation Toolkit (HET), which uses a realist evaluation approach to understand "what works, for whom, in what circumstances".

In line with this idea, it is essential to design jobs that provide workers with an adequate level of autonomy, control and participation in decision-making, to reduce stress and improve job satisfaction. Therefore, the involvement of leaders in the mental health and well-being project requires training for them so that, from their management position, they can advocate for actions that have a positive impact on the creation of a positive and psychologically healthy work environment.

Of course, labor unions, in their more political aspect, can also get involved as a social agent, by providing their vision and perspective to the legislator so that the latter takes into account the protection of mental health in all regulations relating to the world of work, for example by urging the improvement of working conditions and promoting the responsibility of companies in the creation of healthy work ecosystems.

In this same social role, labor unionism must be an active agent in the implementation of national campaigns to combat the stigma associated with mental illness and promote the importance of mental health at work.

Ultimately, this multi-level approach, by addressing the factors that influence mental health from multiple levels, allows interventions to have a greater impact and be more sustainable over time. Also, the multi-level approach not only focuses on treating existing problems, but also seeks to prevent the emergence of new cases by promoting mental health and creating healthy work environments. By improving the mental health of workers, multi-level interventions contribute to greater well-being, increased productivity and a better working environment.

The Role of Labor Unions in Occupational and Digital Mental Health

As we said before, the role of labor unions should not only respond to the more than pertinent participation as an organization in actions of prevention and promotion of e-mental health at work, but also to the need to adapt and transform into a valuable organization in the face of the current challenges of this fourth industrial revolution.

In this regard, labor unions could play a crucial role in improving the mental health of workers by taking advantage of the benefits of artificial intelligence (INSST, 2024).

In fact, in this line of action of e-mental health interventions we have evidence of success despite the incipient nature of the technology, its potential and the ethical doubts that its use raises (Cross. 2024). For example, Phillips, Gordeev & Schreyögg (2019) found in their systematic review and meta-analysis of randomized controlled trials, moderate positive effects on stress, insomnia and burnout, and small but significant effects on depression, anxiety and well-being. Despite certain limitations of these trials, e-mental health interventions are a promising tool to improve mental health in the workplace, which should also be promoted by unions.

For example, in terms of psychosocial risks, labor unions can participate in:

a) the identification and control of psychosocial risks in companies. With the help of AI systems, they could analyze large data sets to identify patterns and trends that indicate psychosocial risks.
b) Through algorithms, they could also detect risk factors such as work overload, lack of autonomy, workplace harassment, discrimination, job insecurity, and other elements that negatively impact the mental health of workers.
c) In addition, through predictive AI analysis, they could alert about possible problems before they become worse, allowing early intervention and the implementation of preventive measures.
d) Another area of action in which labor unions can benefit from the contribution of AI is the personalization of interventions through workplace wellness programs tailored to different groups of workers with interventions tailored to the specific needs of everyone. For example, AI-powered chatbot systems can provide emotional support and guidance to workers experiencing stress, anxiety or depression, offering quick access to mental health resources. Also, in the recommendation and/or referral to mental health services, therapy, support groups or counseling, if appropriate.
e) Another area of special interest is collective bargaining and the defense of labor rights and mental health at work. AI can collect and analyze data that allows for progress in negotiations regarding working conditions that affect mental health. For example, it would be interesting to promote contractual clauses that protect the mental health of workers and develop strategies to implement them in collective agreements.
f) Also, in the training and development role, labor unions can use online learning platforms to offer workers information on positive mental health, stress coping strategies and support resources. For example, interactive simulations can be created that allow workers to practice assertive communication skills, conflict resolution, time management, etc. These initiatives would help to better understand the impact of digitalization on workers' mental health and would positively allow for better adaptation to the digitalization of work of those workers with

greater difficulty. It could develop actions to better address psychosocial risks, such as algorithmic management, hyperconnectivity and lack of autonomy in digital work, among others.

In conclusion, we would like to highlight that the role of labor unions in this area must be to add to multiply. Collaboration with other entities, companies, other unions, researchers and universities, public or private mental health services, must be the value that prevails in institutional relations between entities. Avoiding conflicts over prominence or social gain must be the priority of these institutional relations. In this way, the social fabric will be strengthened, which is so necessary in improving working conditions and preventing mental health problems, as well as in improving workplace well-being.

CONCLUSIONS

To successfully address this role in occupational health with a focus on mental health, and as we have reiterated throughout this chapter, the digital transformation and change management of the organizational structure of unions is also essential.

The proposed strategies require the use of digital tools for communication, organization and mobilization. Digital platforms can also be used by unions to reach workers, create online communities and organize collective actions (Gasparėnienė et al., 2024). The use of technology by unions to create networks of workers and forms of collective action, supported and enhanced by social networks, can rebuild links and spaces of solidarity that technology itself has contributed to blurring (Fernández, 2020).

Trade union barriers in the digital age are complex and multifaceted. Unions face the challenge of adapting to a constantly changing work environment, characterized by precariousness, digitalization and fragmentation of the workforce. Overcoming these barriers requires the adoption of new organizational strategies, the use of digital tools, the fight for fair labor legislation, and the recovery of a utopian discourse that inspires workers.

In addition, greater legal regulation is expected in the near future to balance technological progress with the protection of labor rights (Granados, 2022). And it is also there, where digital unionism, based on experience, can help the legislator in the necessary debate on legal security and labor relations in the digital age.

Definitely, labor unions have a crucial role in protecting the mental health of workers in the digital age. And they can do so at several levels:

a) Collective bargaining and defense of labor rights:

Trade unions must fight for fair labor legislation that protects workers' rights in the digital age. This includes the right to digital disconnection, limitation of working hours, and protection against excessive surveillance at work.

In the context of collective bargaining, it is essential to focus on collective agreements that establish fair wages, reasonable working hours and measures to prevent psychosocial risks arising from digital transformation and the implementation of AI in production processes and their automation.

b) Support for workers

Trade unions must represent workers in digital transformation processes and defend their interests. It is important that workers are informed about the changes that are taking place and that they have the opportunity to participate in decisions that affect them. In addition, support must be provided to workers who suffer from mental health problems, such as stress, anxiety or depression. This may include access to psychological counselling services, support groups and legal assistance.

c) Training and awareness-raising:

Trade unions must be involved in the ongoing training of workers on the psychosocial risks of digital work and measures to prevent them. This may include courses on stress management, communication skills and strategies for the responsible use of technology.

In addition, they must participate in raising awareness in society about the importance of mental health at work. This may include public information campaigns, the organization of events and collaboration with other social actors.

d) Responsible use of technology:

Trade unions must also go digital and use technology responsibly to improve their services and reach a greater number of workers.

Digital platforms can be used for internal communication, the organization of campaigns and the dissemination of information on labour rights.

Trade unions also have a relevant role in the fight against the use of algorithms that may discriminate against workers or violate their privacy.

e) Collaboration with other actors:

Following the sustainable development objectives, trade unions must collaborate with other social actors, such as companies, governments and researchers, to address the challenges of mental health in digital work. They must create strategic alliances that allow the development of public policies, training programs and support resources for workers.

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