

Has the rise of post-pandemic digital labour fostered the crisis of global trade unionism? A brief analysis of the current trade union scenario

O avanço do trabalho digital pós-pandemia fomentou a crise do sindicalismo mundial? Uma breve análise do cenário sindical actual

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ABSTRACT: We assess the consequences of the advance of digital labour on trade union relations as the SARS-CoV2 coronavirus pandemic unfolds. The global response has accelerated the shift towards a stronger globalisation of work. As an issue that cuts across society, the evolution of technologies, especially with the advent of Artificial Intelligence, is challenging for traditional actors in the world of work who are used to working in a face-to-face format. This article, therefore, discusses the distinct possibilities for the revitalisation of trade unionism post-pandemic.

KEY WORDS: Weakening of trade unionism; SARS-CoV2 coronavirus pandemic; Digital labour; Revitalisation.

RESUMO: Avaliamos as consequências do avanço do trabalho digital com o desdobramento da pandemia do coronavírus SARS-CoV2 nas relações sindicais. A resposta mundial acelerou a mudança em direção a uma globalização mais forte do trabalho. Sendo questão transversal a toda a sociedade, a evolução das tecnologias, especialmente com o advento da Inteligência Artificial, é desafiadora para os atores tradicionais do mundo do trabalho questão acostumados ao trabalho em formato presencial. Este artigo, portanto, discute as possibilidades distintas para a revitalização do sindicalismo pós-pandemia.

PALAVRAS-CHAVE: Enfraquecimento do sindicalismo; Pandemia do coronavírus SARS-CoV2; Trabalho Digital; Revitalização.

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1. Introduction

The post-pandemic advance of digital working in the wake of the SARS-CoV2 coronavirus, which causes the disease called COVID-19, has brought along several transformations in the labour market and raised questions about the impact of these changes on trade unionism worldwide.

The pandemic has accelerated the transition to remote and digital working, leading many professionals to adapt to new ways of performing their tasks. This technological advance has allowed for greater flexibility and autonomy, but it has also brought major challenges for the trade union movement.

Trade unionism is closely linked to models of production and work organisation. And the more there is competitiveness and change in the way work is done, the more trade unions must seek to reorganise and change their way of acting.

In the past, trade unions had greater institutional representative strength and a high rate of worker membership, which, in theory, guarantee negotiating power in collective bargaining. Over the years, trade unionism has shifted to an action weakened by low union density, leading to difficulties in fulfilling its role in protecting workers' rights. It is interesting to mention that the crisis in the trade union system had already been an object of concern at the beginning of the 20th century, as observed by Henry White in 1909¹, who criticised trade unions that insisted on denying the advance of machines that would replace human labour power.

The greatest difficulty for trade unionism today is the organisation of work in the digital age. One of its particularities is the fact that work is not always located in a specific physical space, sometimes not even in the same country, making it difficult to mobilise and form traditional unions. It is also fragmented in nature, characterised by independent workers.

Globalisation of work is another challenge for trade unions. This phenomenon allows workers to be hired anywhere in the world, thus obviously enabling companies to exploit cheaper workforce to avoid labour law costs in countries with stronger legal systems and unions. The weakening of bargaining power is one of the consequences of this.

On the other hand, it is important to note that trade unionism is not completely in crisis, as there are ways to deal with the challenges of digital labour, with the creation of unions representing workers in specific sectors, such as app drivers and technology professionals. Furthermore, international organisations, concerned about the future of human work, have mobilised around providing minimum guarantees for workers in the digital age. The European Union has sought to strengthen cooperation between trade unions in different countries, in addition to promoting transnational collective bargaining regarding new forms of work, as in the case of the European Framework Agreement for Digitalisation in 2020, signed by the European social partners in the midst of the pandemic.

¹ HENRY WHITE, *The crisis in unionism*, 1909, in *The North American Review*, in <https://www.jstor.org/stable/25106361> (06.09.2023).

Following the end of the pandemic, trade unionism worldwide has had to adapt to the advance of digital labour. To this end, the entire trade union system must be reassessed and reformulated to face these new challenges, so that it adopts strategies that address the specific issues of digital and global labour. This change of direction for trade unions is essential if the global representative crisis is to be minimised in order to meet future challenges and ensure the protection of workers' rights in this new scenario.

From this point of view, some details should be taken into account. There is no denying that the legal framework of digital labour is part of a changing labour market. As stated earlier, a different rethinking of the labour relationship is needed. Digital labour is an illustration of the growing importance of seeing autonomy and responsibility in labour relations as a challenge, along with the elimination or mutation of existing standard forms of work.

These issues, therefore, are closely linked to the complexity of framing digital work in existing labour legal frameworks and the need for trade unions to be responsive to the increasing diversity of the labour market.

Thus, with this contribution, we aim to address some of the pressing bottlenecks regarding the post-pandemic crisis of trade unionism and also contribute to an exercise of strategic reflection for a more sustainable legal anchoring of trade union representation, or even a recalibration if necessary, in the face of the upcoming forms of work.

2. The globalisation of work

There is no consensus as to when the process of globalisation began. It would be a mistake to believe that it is a phenomenon of the 20th century. Likewise, to consider it as synonymous with the influence of the United States in the recent history of the world economy, as many have argued.

The American historian Valerie Hansen, in an interesting approach to explorations and trade missions, states that the year 1000 marked the beginning of globalisation, when trade routes allowed "products, technologies, religions and people to leave home and go somewhere new"², notably in China, which already had extensive trade links with other countries at that time.

Regarding the analysis of the world economy, one of the most prominent experts on the subject was Wallerstein³, in his study on the so-called "world economy", where he states that the process has been going on for more than five centuries with a gradual evolution of integration of the world economic system. According to the renowned sociologist, between the end of the 15th century and the beginning of the 16th century, the European world economy began its development into a "world economic system", not because it encompassed the whole world,

² VALERIE HANSEN, *The year 1000: When globalization began*, 1st ed., New York, Scribner, 2020, p. 14.

³ IMMANUEL WALLERSTEIN, *The Modern Worldsystem: Capitalist agriculture and the origins of the European world-economy in the Sixteenth Century*, 1st ed., vol. I, Los Angeles, University of California, 2011, p. 56.

but because it superseded the political formations of the time, through a link, albeit initially tenuous, between economic systems. To some extent, this embryo of globalisation reinforced cultural and political links.

However, the development of globalisation has not always been peaceful. Certainly, political and power disputes among peoples, with cultural, religious and customs impositions, occurred from the European colonialist phase of the 16th century until the end of the Second World War, when the process of formation of the European Union began.

Wallerstein explains the formation of the world economy since the 16th century and the development of capitalism until the present day. His analysis encompasses the economic, political, and socio-cultural systems as a whole, without considering the borders of each state, and are seen as intrinsically connected. The author seeks to demonstrate that the world economy, based on the capitalist system, relies on the fact that the world economy is at a level that transcends any political-geographical division. He also notes that there is a huge division of labour that is not evenly distributed across the global system.

Although capitalism has as its defining characteristic its continuous expansion, only at the end of the 20th century "the world economy was able to become truly global on the basis of the new infrastructure provided by information and communication technologies, and with the decisive help of deregulation and liberalisation policies implemented by governments and international institutions"⁴.

The idea of the nation-state and sovereignty has been significantly altered as the globalisation of capitalism intensified after the end of the Cold War, especially with the consolidation of the European Union. The shock of the pandemic on the global labour system can only be seen as an intensification of a trend that was already underway⁵.

Before the era of globalisation, nation states were considered fundamental in the conception of political and territorial unity, fully exercising their powers of sovereignty within their borders. They were seen as central actors in the international system, responsible for ensuring the security, domestic order, and well-being of citizens. However, the globalisation of capitalism has challenged this traditional conception.

This phenomenon has had a direct impact on the distribution of labour power, as it has expanded and legitimised the ability of certain groups to exploit human labour. The so-called world economies are therefore divided into central states, which command production and specialised economic activity, and peripheral states, which engage in unskilled labour and the extraction of raw materials.

Globalisation has broken some paradigms, especially with regard to economic and financial frontiers and, consequently, labour relations, when it crosses its borders in a movement of

⁴ MANUEL CASTELLS, *The information age: economy, society and culture*, 2nd ed., vol. I, Chichester West Sussex, Wiley-Blackwell, 2010, p. 101.

⁵ STEVEN BRAKMAN / HARRY GARRETSEN / ARJEN VAN WITTELOOSTUIJN, *Robots do not get the coronavirus: The COVID-19 pandemic and the international division of labor*, 2021, in *Journal of international business studies*, in <https://doi.org/10.1057/s41267-021-00410-9> (19.09.2023).

transnational market expansion. The process of internationalisation of capital began with trade in goods and services. In a second step, national boundaries were diffused in financial negotiations and, in a third cycle, industrial capital began to move through subsidiaries of multinational companies installed in various countries.

The vast majority of countries in the world are already part of globalisation, albeit to different degrees in this modern order, which is not only economic but also cultural, and has a strong influence on labour relations.

Widely discussed in academia, globalisation is an irreversible process, especially in integrated markets such as the European Union. There is no doubt that it has generated an increase in inequalities between countries and, therefore, there is a need to seek alternatives to face its consequences.

These transformations take place at different moments in world history. The new global political and economic conjunctures, especially in the European Union, have fostered the expansion of transnational companies, which seek new markets to reach more consumers, in addition to benefiting from cheaper labour and inputs, with the consequent decrease in production costs and increase in profits.

Despite the globalisation of the economy, much of the production will remain regional, even if the local economy is integrated into the globalised core. In this context, Castells⁶ asserts that “in the last two decades of the twentieth century, international trade grew faster than production, but the domestic sector of the economy still accounts for the large majority of GDP in most economies”.

With global economic integration, markets have become interdependent, operating in real time 24 hours a day, especially after the implementation of new technologies in the financial sector, which have made it possible to carry out transactions in high volumes with speed and complexity.

Due to this market interdependence, it is naturally observed that the performance of capital in the most globalised economies acts as a thermometer of the world economy. Castells⁷, in this regard, states that financial market movements are the result of a complex combination of market rules, business strategies, and speculative manoeuvres, among other political-economic turbulences of various kinds.

Financial market flows are transmitted around the world at the speed of light, although the impact of these movements is processed in a particular and unpredictable way within each market. Information technology and the development of telematics in general have further favoured the minimisation of borders and have encouraged the flexibilisation of the market according to its specific needs, with the alteration of the production model that existed until then.

⁶ MANUEL CASTELLS, *The information age...*, p. 101.

⁷ MANUEL CASTELLS, *The information age...*, p. 106.

The world has turned into a large global factory, as the implementation of technology in the labour environment has allowed the fractionation of the production phases of a company in several different locations. If a particular country has very strict labour or tax legislation, the company simply moves to a place that offers more beneficial conditions. One of the main features of globalisation is the economic interdependence between countries. Companies and investments cross national borders more easily than ever before. This creates a certain dialectical tension between the sovereignty of the nation state and the need to integrate into a globalised economy. The great impasse lies in seeking to balance national interests with the demands and pressures of international markets.

There is no doubt that human labour has been strongly influenced by globalisation, especially as social connections have become more dynamic, thus making labour relations more agile. However, it can be observed that this volatility in the relationship between capital and labour has triggered a process of diminishing rights and guarantees provided by law to favour the market.

The growing interconnectedness of international political systems was inevitable. Supranational organisations such as the World Trade Organization, the International Monetary Fund, and the European Union have gained power and influence in political and economic decision-making. These institutions often limit the autonomy of nation states by setting rules and regulations that states must follow to participate fully in the global economy.

In this context, the growing power of transnational corporations should also be considered. Multinational corporations often possess greater economic and political resources than many states, giving them significant influence over government policies and decisions. This dynamic challenges the authority of the nation state and its ability to control economic power.

The main importance of collective bargaining in a globalised environment lies precisely in the regulation of labour rights not covered by the laws of the host countries of multinational enterprises, which take advantage of neighbouring countries, as it is often the case within the European Union, for example.

Modernity is inherent in economic globalisation, as Giddens⁸ has already said since the 1990s. The evolution of globalisation is inevitable, but it is possible to take other paths to minimise its negative impacts, especially on labour rights. In this regard, trade unions and employers are active strategic actors in the reconfiguration of labour regulation.

3. The labour market crisis

Economic crisis can be considered as one of the phases of capitalism. Economic theories consider that the “conceive society as governed by a general tendency toward equilibrium,

⁸ ANTHONY GIDDENS, *The consequences of modernity*, 1st ed., Cambridge, Polity Press, 1996, p. 63.

where crises and change are no more than temporary deviations from the steady state of a normally well-integrated system”⁹.

In times of crisis, there is a clear reduction in economic activity and, as a result, credit constraints and the collapse of the financial system. Consequently, the economic crisis directly affects employment relations.

These economic downturns inevitably fall on workers, regardless of the country where they occur. The ILO produced a report in 2008¹⁰, when there was a major global economic downturn, which collected data on the proportion of wages as a total share of income. The conclusion was that in the 51 of its 73 member states where complete information was obtained, average labour compensation had fallen sharply. In the European Union economic area there was an average decrease of 9%.

From the data collected by the ILO, it can be concluded that there is a trend towards impoverishment of the working class with each global economic crisis. The same ILO study points out that in European countries the number of trade unions has fallen sharply, concluding that bargaining power has declined dramatically in recent decades.

Another important issue to be considered is the decrease in investment by companies as a result of international economic crises and, as a consequence, less hiring of labour, which reflects in the slowdown of growth in the country where it occurs.

We are all feeling the economic crisis triggered by the spread of the SARS-CoV-2 coronavirus and also by the war in Ukraine, whose effects are experienced in all sectors with the disruption of production chains, which have generated a large unemployment rate almost worldwide¹¹.

It is not possible to gauge the economic impact of the pandemic on the world of work, as it is not known the real extent of the disruption to business operations and how long the war in Ukraine will take to end. These factors have a direct impact on labour relations, especially in Europe, due to its economic integration.

The global labour market has been hit hard, but has affected the working class differently. There was an increase in unemployment for a portion of the economically active population during the pandemic, especially in segments that require the physical presence of the worker. On the other hand, for other sectors it meant the intensification of work, especially the ones that started to use digital means to carry out their profession.

Although several governments took action to minimise the impact of government policies to prevent the spread of the coronavirus, job protection was not available to all workers. Many sectors were severely affected and naturally there was a decrease in the labour force.

⁹ WOLFGANG STREECK, *The crises of democratic capitalism*, 2011, in *New Left Review*, in <https://newleftreview.org/issues/ii71/articles/wolfgang-streeck-the-crises-of-democratic-capitalism> (20.09.2023).

¹⁰ INTERNATIONAL LABOUR ORGANIZATION, *World of Work Report*, 2008, in https://www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_100354/lang--en/index.htm (03.09.2023).

¹¹ FRANK HENDRICKX, *The coronavirus and the world of work: renewed labour law questions*, 2020, in *Global Workplace Law & Policy*, in <https://global-workplace-law-and-policy.kluwerlawonline.com/2020/04/01/the-coronavirus-and-the-world-of-work-renewed-labour-law-questions/>.

In the face of this sharp loss of jobs in the affected sectors, there was a search by workers for jobs in categories less sensitive to the restrictions imposed by governments. In the face of this movement, there have been substantial differences in the rate of job change, with an increase in jobs where digital labour predominates.

All industrial sectors experienced a sharp decline in activity, directly affecting the labour market in the first "waves" of the coronavirus, especially in retail, manufacturing, and hospitality. Nevertheless, there has been some recovery in all sectors since mid-2022, but not to pre-pandemic levels¹².

This recent economic downturn differs in two main ways from previous ones in human history. Firstly, what caused the recession was government action to try to minimise the global pandemic rather than a pure financial crisis arising from a natural market destabilisation. Second, the government response to the economic and social effects of restrictive acts (lockdowns, for example) was more extensive than those of the past¹³.

Policy responses to the pandemic were directed especially at public health and not at the economy in the first moment. As a result, workers were not initially supported, but as the pandemic gained momentum, governments turned to safeguarding jobs and industry. In general, governments around the world started to offer direct and indirect aid, not only financial, such as unemployment insurance for workers who would not normally be entitled to the benefit (self-employed, independent, and temporary), but also in the form of incentives, tax, for example, to ensure job retention.

There is no doubt that the most economically vulnerable workers have suffered the greatest negative economic impact of the pandemic, such as those on low incomes¹⁴, young people¹⁵ e older persons¹⁶. The service sector has not felt it as much because it has mostly gone digital during the pandemic, especially teleworking¹⁷, but even after the health crisis ended, most workers remained remote, as there was generally no perceived loss in the quality of work.

The labour market crisis is also related to ongoing structural and technological changes. Automation and Artificial Intelligence are replacing certain tasks, including intellectual ones, that were previously performed by people. Simpler and therefore "automatable" professions,

¹² THOMAS F. CROSSLEY / PAUL FISHER / HAMISH LOW / PETER LEVELL, *A year of COVID: the evolution of labour market and financial inequalities through the crisis, 2023*, in *Oxford Economic Papers*, in <https://doi.org/10.1093/oeq/gpac040> (05.09.2023).

¹³ GOPI SHAH GODA / EMILIE JACKSON / LAUREN HERSCH NICHOLAS / SARAH SEE STITH, *The impact of Covid-19 on older workers' employment and Social Security spillovers, 2023*, in *Journal of population economics*, in <https://doi.org/10.1007/s00148-022-00915-z> (10.09.2023).

¹⁴ ALEXANDER BARTIK / MARIANNE BERTRAND / FENG LIN / MATT UNRATH, *Measuring the Labor Market at the Onset of the COVID-19 Crisis, 2020*, in *Working Papers, Becker Friedman Institute for Research In Economics*, in <https://econpapers.repec.org/paper/bfiwpaper/2020-83.htm> (11.09.2023).

¹⁵ LAURA MONTENOVU / XUAN JIANG / FELIPE LOZANO ROJAS / IAN M. SCHMUTTE / KOSALI I. SIMON / BRUCE A. WEINBERG / COADY WING, *Determinants of Disparities in Covid-19 Job Losses, 2020*, in *NBER Working Papers*, in <https://ideas.repec.org/p/nbr/nberwo/27132.html> (11.09.2023).

¹⁶ TRUC THI MAI BUI / PATRICK BUTTON / ELYCE G. PICCIOTTI, *Early Evidence on the Impact of Coronavirus Disease 2019 (COVID-19) and the Recession on Older Workers, 2020*, in *The Public policy and aging report*, in <https://doi.org/10.1093/ppar/praa029> (11.09.2023).

¹⁷ ÁRON KISS / MARIA CHIARA MORANDINI / ALESSANDRO TURRINI / ANNELEEN VANDEPLAS, *Slack & tightness, making sense of post Covid-19 labour market developments in the EU*, 1st ed., Luxembourg, Publications Office of the European Union, 2022, pp. 11-12, in https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en (11.09.2023).

such as those related to repetitive and low-skilled tasks, are more susceptible to replacement by machines and algorithms. It is important to mention that even with Artificial Intelligence already implemented in some areas before 2020¹⁸, the pandemic has acted as an accelerator of the digital transition in the world of work¹⁹.

Rapid changes in industry and the global economy require new skills and competences from workers. Those who are not prepared to adapt to these changes may face difficulties in finding employment. The need for digital skills has become increasingly important in many areas. There is no doubt that the traditional labour market is in crisis, and given that, trade unionism naturally weakens.

4. Labour in the digital age

Technological advances have always been crucial for the evolution of industrial production and, consequently, for human labour. Prior to the advent of industry, all labour was manual and was out of step with population growth. There was a need to produce more and with a higher profit margin.

Based on a historical analysis of employment, there is a tendency to increase labour productivity, as technological and organisational developments allow increased manufacturing with higher quality and less effort²⁰.

World economic development has undergone major changes over the course of human history, which is divided into four industrial revolutions. The first revolution took place in the 18th century and is characterised by the transition from animal to mechanical power. The second one, marked by the advent of electricity and the assembly line, happened at the end of the 19th century and boosted mass production. The third one had its start in the mid-20th century with the development of computers followed by the Internet in the 1990s²¹.

Society is currently undergoing the fourth industrial revolution, which began at the turn of the 21st century and is manifested by digital integration in all sectors of production and in the daily lives of citizens. It is characterised by the omnipresence of the internet and Artificial Intelligence, whose advances occur simultaneously in all areas, from genetic sequencing to nanotechnology. It is this remarkable technological integration that essentially differentiates it from previous revolutions. Although the concept of Artificial Intelligence was first mooted in

¹⁸ CARL BENEDIKT FREY / MICHAEL A. OSBORNE, *The future of employment: How susceptible are jobs to computerisation?*, 2017, in *Technological Forecasting and Social Change*, in <https://doi.org/10.1016/j.techfore.2016.08.019> (10.09.2023).

¹⁹ GLÓRIA REBELO, *O trabalho na era digital: Estudos laborais*, 1.^a ed., Coimbra, Almedina, 2021, pp. 27-28.

²⁰ MANUEL CASTELLS, *The information age...*, pp. 56-57.

²¹ KLAUS SCHWAB, *The fourth industrial revolution*, 1st ed., Geneva, World Economic Forum, 2016, p. 11.

the 1950s, when Alan Turing explored its mathematical possibility²², only in the last decade has its development been realised.

There is no doubt that the phenomenon of the fourth industrial revolution directly affects human labour, in that it has radically changed its nature in all occupations at great speed and with the complete renewal of entire systems²³.

Frey and Osborne²⁴ understand that the fourth industrial revolution will inevitably have a direct impact on the labour market worldwide. However, this does not mean that the machine will replace the human being, but an adaptation and improvement of labour is necessary. From another perspective, Ford²⁵ says that "this time it's different" and that human labour is increasingly scarce, especially in the most advanced countries, where factory jobs are rapidly disappearing.

Keynes, in 1931, already foresaw that new technologies would bring the disease of "technological unemployment"²⁶. The deployment of technology in the labour market has been a source of concern since the first industrial revolution, when the first machines replaced human labour.

One of the main features of work in the digital age is connectivity, which is nothing new in the world of work. The use of the Internet, already applied to the work environment since its popularisation in the 1990s, has made it possible to work from any geographical location, despite the fact that teleworking was first provided long before the advent of the World Wide Web.

Jackson and Van der Wielen²⁷ report that teleworking was first effectively put into practice in the 1970s in the United States of America, as a response to the energy crisis. Subsequently, in the 1980s, teleworking was again advocated as flexible working to enable work-life balance. From the 1990s onwards, remote working developed considerably due to the introduction of computerisation in the workplace. In the same decade, interest in teleworking gained prominence in Europe to guarantee employment in the Community area, in response to the competitiveness of the North American market.

In order to better compete in the market and ensure survival in times of crisis, companies have restructured and reduced the need for workspace (a phenomenon called downsizing),

²² ZEYI MIAO, *Investigation on human rights ethics in artificial intelligence researches with library literature analysis method*, 2019, in *The Electronic Library*, in <https://www.emerald.com/insight/content/doi/10.1108/EL-04-2019-0089/full/pdf> (01.09.2023).

²³ ERIK BRYNJOLFSSON / ANDREW MCAFEE, *Race against the machine: how the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy*, 1st ed., Lexington (Massachusetts), Digital Frontier Press, 2011, p. 21.

²⁴ CARL BENEDICT FREY / MICHAEL A. OSBORNE, *Technology at Work: The Future of Innovation and Employment*, 2015, in *Oxford Martin School*, in <https://www.oxfordmartin.ox.ac.uk/publications/technology-at-work-the-future-of-innovation-and-employment/> (31.08.2023).

²⁵ MARTIN FORD, *Rise of the robots: Technology and the threat of a jobless future*, New York, Basic Books, 2015, p. 29.

²⁶ JOHN MAYNARD KEYNES, "Economic Possibilities for Our Grandchildren". In KEYNES, JOHN MAYNARD, *Essays in Persuasion*. London, Palgrave Macmillan UK, 2010. pp. 321–332, p. 325.

²⁷ PAUL J. JACKSON / JOS M. VAN DER WIELEN, "Introduction: actors, approaches and agendas: from telecommuting to the virtual organisation", In JACKSON, PAUL J. / VAN DER WIELEN, JOS M., *Teleworking: international perspectives, From telecommuting to the virtual organisation*, 1st ed. London, Routledge, 2002. pp. 1–18, p. 1.

this reducing operating costs. Obviously, this concept of work is not applicable to all sectors, although every day technology is increasingly allowing remote working in areas of labour that were previously deemed impossible.

Since the end of the 20th century, several studies have shown great concern about technologies that replace the worker with the use of computers²⁸, industrial robots²⁹, and Artificial Intelligence³⁰. In fact, many "traditional" jobs are dying out and being replaced by new technological approaches, especially routine and repetitive jobs, which were the first to suffer this impact³¹. It has not been different from other industrial revolutions, because as some labour models are eliminated, other business patterns based on the digital world are created and expanded.

Work in the digital age has undergone several significant transformations with the advancement of technology, especially with Artificial Intelligence now present in almost all production processes, both industrial and services. These changes have affected not only the way companies operate, but also the way professionals perform their tasks.

In 2016, Elon Musk, in a meeting with shareholders, presented a project to build a fully automated factory for the production of Tesla vehicles. At the time, he referred to it as "the machine that makes the machine", in which he would produce cars using robots with Artificial Intelligence technology with very little involvement of human labour³². Two years later, in 2018, faced with serious delays to his project, Musk admitted that it was not yet time for robots and stated that "humans are underrated".

The idea of the total or almost total replacement of workers by intelligent systems in industrial production has been coined "Dark Factory", i.e. one that can operate in the dark without any lighting. However, attempts to implement this idea have shown that human workers are still needed even in highly automated work environments.

As IT develops, coupled with the globalisation of production and consumption, new discussions are launched about its regulation, especially because many traditional employers were still suspicious of and insecure about the quality of the service in a digital way, something that is now more common and accepted.

Automation and Artificial Intelligence have played an important role in the transformation of work. Routine and repetitive tasks are increasingly being automated, thus allowing professionals to focus on more strategic and creative activities.

²⁸ D. H. AUTOR / F. LEVY / R. J. MURNANE, *The Skill Content of Recent Technological Change: An Empirical Exploration*, 2003, in *The Quarterly Journal of Economics*, in <https://doi.org/10.1162/003355303322552801> (09.09.2023).

²⁹ DARON ACEMOGLU / PASCUAL RESTREPO, *Robots and Jobs: Evidence from US Labor Markets*, 2020, in *Journal of Political Economy*, in <https://doi.org/10.1086/705716> (10.09.2023).

³⁰ CARL BENEDIKT FREY / MICHAEL A. OSBORNE, *The future of employment: How susceptible are jobs to computerisation?*, 2017, in *Technological Forecasting and Social Change*, in <https://doi.org/10.1016/j.techfore.2016.08.019> (10.09.2023).

³¹ GAAITZEN J. de VRIES / ELISABETTA GENTILE / SÉBASTIEN MIROUDOT / KONSTANTIN M. WACKER, *The rise of robots and the fall of routine jobs*, 2020, in *Labour Economics*, in <https://doi.org/10.1016/j.labeco.2020.101885> (02.09.2023).

³² SIMON TAES, "Robotisation and Labour Law. The Dark Factory: the Dark Side of Work?" In BRUYNE, JAN de / VANLEENHOVE, CEDRIC, *Artificial Intelligence and the Law*, 1st ed., Intersentia, 2021. pp. 285–316, p. 285.

Not only repetitive tasks are automated. Customer service is already a reality with chatbots (robots that provide automated customer service via chats), algorithms that analyse large volumes of data, and virtual assistants that generate appointments and perform administrative tasks. This new form of automation allows a virtual assistant to make human-like calls, including the incorporation of various elements that can even make it difficult to distinguish it from a person, such as voice intonation, making the conversation with the robot extremely natural³³. Although the technology of robots equipped with Artificial Intelligence has existed since 2018, coincidence or not, this automation in customer service has increased considerably in the years of the pandemic, leading to the dismissal of workers who had this function in much of the world.

There is no doubt that as machines take over certain tasks, some jobs become obsolete, leading to the need for retraining and adaptation to new market demands³⁴. On the other hand, technology also creates opportunities for new occupations and sectors to emerge, such as data intelligence, cybersecurity, and virtual/augmented reality.

The big difference between the current industrial revolution and the others, according to Soete³⁵, is the direct digital interaction between producers and consumers, enabling global market outreach almost instantaneously. Soete also states that the globalisation of human labour now gives rise to "dramatic" and almost infinite opportunities for creative destruction³⁶, given its intangible nature of knowledge and the opportunities for rapid expansion of innovative activities.

The extent and ways that digital technologies impact on work are much broader than in past waves of innovations. Today, technological advancement is almost daily and naturally influencing the entire world of work. As a result, it is very difficult to identify which job categories have been and will be affected. In fact, there is currently talk of a third category of workers, situated between the categories of "employee" and "independent contractor"³⁷, which includes the so-called gig economy³⁸ and crowdwork³⁹, for example.

In the past, it was mainly manual work in general that was at risk of being replaced by a machine. The situation is really different today. With Artificial Intelligence, virtually all forms

³³ JACOB MARKUS WERBROUCK, "The Hypothesis of Technological Unemployment Caused by AI-Driven Automation and its Impact on Social Security Law". In BRUYNE, JAN de / VANLEENHOVE, CEDRIC, *Artificial Intelligence and the Law*, 1st ed., Intersentia, 2021. pp. 317–334, pp. 317-318.

³⁴ FRANK HENDRICKX / SIMON TAES, *Robotisering en werk in coronatijden: een kijk op het nieuwe DNA van de arbeidsmarkt*, 2021, in <https://data-en-maatschappij.ai/uploads/publications/Visiepaper-Robotisering-en-corona-pdf.pdf> (13.09.2023).

³⁵ LUC SOETE, "Destructive creation: explaining the productivity paradox in the digital age". In NEUFEIND, MAX / O'REILLY, JACQUELINE / RANFT, FLORIAN, *Work in the digital age, Challenges of the fourth Industrial Revolution*, 1st ed. London, Rowman & Littlefield International, 2018. pp. 29–46, p. 36.

³⁶ Expression coined by Joseph Schumpeter in his landmark book "Capitalism, Socialism, and Democracy", which expresses the idea that, in a capitalist society, "the old way" of doing things is constantly being destroyed or supplanted as it is replaced by a newer and better alternative.

³⁷ MIRIAM A. CHERRY / ANTONIO ALOISI, "A Critical Examination of a Third Employment Category for On-Demand Work". In DAVIDSON, NESTOR M. / INFRANCA, JOHN / FINCK, MICHÈLE, *The Cambridge handbook of law of the sharing economy*, 1st ed. New York, Cambridge University Press, 2018. pp. 316–327, p. 326.

³⁸ Work model characterized by the provision of casual services on digital platforms, such as, for example, Uber driver.

³⁹ Work carried out through online platforms, which enable companies to publish proposals online for small projects or tasks, which are only paid if the work is of the desired quality.

of labour are subject to the impact of automation. It is a process "largely orthogonal to the traditional classification into blue-collar versus white-collar jobs"⁴⁰.

One important aspect is the increasing reliance on digital skills. The ability to effectively use new technologies and adapt to change has become critical to professional success. Companies are looking for professionals who have skills in areas such as data analysis, programming, digital marketing, and project management. In addition, continuous learning and constant updating of knowledge are essential to keep up with the fast pace of digital transformations.

Discussions about work in the digital age, according to Degryse⁴¹, usually revolve around the distinction between traditional companies that are struggling to adapt to new technologies and those that have already emerged as a consequence of this evolution, whose organisations differ fundamentally, especially in terms of the efficiency of the labour system, workplace, among other characteristics.

Indeed, there is no way to predict what will happen in the (near) future with the adoption of technology in the labour environment, notably Artificial Intelligence⁴². It is inevitable to recognise that the fourth industrial revolution is a current reality. And there are researchers who present certain speculations on the issue, arguing that the replacement of workers by robots will be between 9%⁴³ and 47%⁴⁴.

5. The post-pandemic crisis of trade unionism

Trade unions have always been more influential in the manufacturing industry⁴⁵, which has suffered a decline with the massive automation of production during the last decades, in addition to the displacement of a large part of the industrial park to countries in the East, such as China, for example. For some scholars, these facts lead them to believe that these trade union organisations or models tend to move towards extinction⁴⁶.

Automation in industry is on the rise, resulting in a decrease in the number of workers, who are moving to other sectors, notably services. At a closer look, it is possible to see that the

⁴⁰ GIACOMO DOMINI / MARCO GRAZZI / DANIELE MOSCHELLA / TANIA TREIBICH, *Threats and opportunities in the digital era: Automation spikes and employment dynamics*, 2021, in *Research Policy*, in <https://doi.org/10.1016/j.respol.2020.104137> (25.08.2023).

⁴¹ CHRISTOPHE DEGRYSE, *Digitalisation of the economy and its impact on labour markets: Working paper*, 2016, in <http://dx.doi.org/10.2139/ssrn.2730550> (22.09.2023).

⁴² TOD D. RUTHERFORD / LORENZO FRANGI, *Is Industry 4.0 a Good Fit for High Performance Work Systems? Trade Unions and Workplace Change in the Southern Ontario Automotive Assembly Sector*, 2020, in *Relations industrielles/Industrial Relations*, in <https://doi.org/10.7202/1074563ar> (30.08.2023).

⁴³ MELANIE ARNTZ / TERRY GREGORY / ULRICH ZIERAHN, *The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis*, 2016, in *OECD Social, Employment and Migration Working Papers*, in <https://doi.org/10.1787/1815199X> (29.08.2023).

⁴⁴ CARL BENEDIKT FREY / MICHAEL A. OSBORNE, *The future of employment: How susceptible are jobs to computerisation?*, 2017, in *Technological Forecasting and Social Change*, in <https://doi.org/10.1016/j.techfore.2016.08.019> (10.09.2023).

⁴⁵ MAGDALENA BERNACIAK / REBECCA GUMBRELL-MCCORMICK / RICHARD HYMAN, *European trade unionism: from crisis to renewal?: Report 133*, 1st ed., Brussels, European Trade Union Institute, 2014, p. 11.

⁴⁶ CLAUDIUS SCHNABEL, *Union membership and density: Some (not so) stylized facts and challenges*, 2013, in *European Journal of Industrial Relations*, in <https://doi.org/10.1177/0959680113493373> (26.08.2023).

decline of trade unions has also been influenced by these changes, especially as industry is commonly highly unionised and the service sector has low union membership⁴⁷. Obviously, these factors vary depending on the culture and trade union strength of each country, but, overall, the global decline of trade unionism is evident.

There is no doubt that the trade union movement has also been strongly affected by globalisation and new working arrangements linked to technology and the growth of atypical forms of employment. The increase in part-time jobs, which are usually associated with low union membership, has also had an impact on the labour movement⁴⁸. Furthermore, it contributes to the weakening of trade unionism.

Schnabel⁴⁹ asserts that younger workers are less prone to join a union because they perceive that organisations mainly represent the interests of older employees. These young people are the majority of those working on digital platforms, which is very common in the service sector. As a result, this growing phenomenon is transforming the employment relationship, which tends to be non-unionised⁵⁰.

During the recent pandemic, a large proportion of young people entering the labour market have opted for jobs on digital platforms, either teleworking, gig economy, or crowdwork. Consequently, there has been a significant impact on trade union organisations around the world, further aggravating the crisis of trade unionism that had been developing over the past decades.

As discussed in previous sections, the economic crisis resulting from the pandemic has led to high unemployment and a drastic reduction in economic activity in many sectors. This resulted in mass layoffs and, consequently, a weakening of trade unions' bargaining positions. In the face of financial difficulties, most companies restricted collective bargaining to increase rights, as the aim at that time was to reduce costs and recover from the crisis. Negotiations between trade unions and employers were mainly aimed at safeguarding jobs, such as temporary reductions in wages and other rights.

Due to the social distancing measures and lockdowns imposed during the pandemic, it was not possible to organise demonstrations, strikes, and other forms of collective pressure, which are usually concentrated among blue-collar workers. This is compounded by the feeling of some workers who had their labour rights reduced during the pandemic (albeit temporarily) that unions did not mobilise sufficiently to prevent this from happening.

It is also observed that a large part of the unions is still acting against the changes in the labour market, thus trying to return to the golden era. Instead of trying to adapt to the new

⁴⁷ CLAUS SCHNABEL, *Union membership and density...*, pp. 258-259.

⁴⁸ MAGDALENA BERNACIAK *et al.*, *European trade unionism...*, pp. 11-12.

⁴⁹ CLAUS SCHNABEL, *Union membership and density...*, p. 262.

⁵⁰ JELLE VISSER, *Trade unions in the balance*, 1st ed., Geneva, International Labour Office, 2019, p. 53.

system and the advances of technology in the labour environment, the general attitude of the unions is to try to prevent the advance of digital work⁵¹.

It is difficult to predict the future of trade unionism. However, Visser⁵² points to four possibilities: marginalisation, dualisation, substitution, and revitalisation.

The loss of relevance of trade unions, as evidenced by their steady decline over the last thirty years, puts their survival at risk, especially if their membership is below 10 per cent of workers in the sector, as they will not be financially sustained. However, it seems premature to predict trade union marginalisation, especially since, for this to occur, there would have to be large-scale disaffiliation in all sectors of the economy.

In the same vein as marginalisation, dualisation predicts the weakening of trade unions due to a trend towards an increasing platform economy. In this respect, trade unions end up yielding to employers' demands to promote the maintenance of "their 'insider' members - professionals and workers in large firms with permanent contracts - potentially at the expense of 'outsiders', those with temporary, casual, or no jobs"⁵³. In doing so, trade unions are implicitly accused of neglecting the problems of the most vulnerable workers⁵⁴.

The third scenario imagined by Visser is the possibility of trade unions being replaced by other forms of representation, especially in the face of new forms of atypical employment, such as platform workers, and informal work. Tapia *et al.*⁵⁵ propose four new forms of representation: direct worker participation and representation through employer-provided mechanisms; voluntary employer commitments to labour standards; international framework agreements negotiated with international trade unions; and Civil Society Organisations. However, there are still questions as to whether these new forms of representation would fulfil the role of absent or weakened trade unions.

Finally, the fourth scenario for the future of trade unionism is its revitalisation. Visser⁵⁶ presents some evidence in this regard. According to him, a few trade unions and similar organisations have started to make inroads into informal economies on all continents, especially in developed economy countries, to foster smart ways of communicating with the self-employed to recruit them in both the digital and traditional economy.

Hendrickx⁵⁷ warns that modernisation has led labour law to "a kind of regulatory crisis", especially since the traditional regulatory model is based on long-term service and homogeneous forms of work. Industrial unionism is increasingly outdated and no longer fits

⁵¹ IOULIA BESSA / SIMON JOYCE / DENIS NEUMANN / MARK STUART / VERA TRAPPMANN / CHARLES UMNEY, *A global analysis of worker protest in digital labour platforms*, 2022, in *ILO Working Paper 70*. 47 p., in <https://doi.org/10.54394/CTNG4947> (25.08.2023).

⁵² JELLE VISSER, *Trade unions in the balance...*, pp. 59-70.

⁵³ JELLE VISSER, *Trade unions in the balance...*, p. 64.

⁵⁴ GUY STANDING, *The precariat: The new dangerous class*, 1st ed., London, Bloomsbury, 2014, p. 25.

⁵⁵ MAITE TAPIA / CHRISTIAN LYHNE IBSEN / THOMAS ANTON KOCHAN, *Mapping the frontier of theory in industrial relations: the contested role of worker representation*, 2015, in *Socio-Economic Review*, in <https://doi.org/10.1093/ser/mwu036> (26.08.2023)..

⁵⁶ JELLE VISSER, *Trade unions in the balance...*, p. 68.

⁵⁷ FRANK HENDRICKX, *Regulating new ways of working*, 2018, in *European Labour Law Journal*, in <https://doi.org/10.1177/2031952518781449> (11.09.2023).

today's dynamic, non-standardised working models. In globalised economies, it is clear that companies are seeking flexible working patterns, such as temporary jobs, non-standard forms of work, and outsourcing. This leads to the weakening of the idea of a traditional fixed workplace. In addition, the hierarchical structure of companies is losing relevance and small-scale teams and co-operation based on individual experiences are becoming more important.

At the transnational level, the International Labour Organization in recent decades has made efforts to promote more equitable and decent working conditions in the digital age. Although there are no specific regulations, some international conventions addressing issues in this regard have been signed, such as the Conventions 177⁵⁸ and 181⁵⁹. In addition, the ILO promotes various publications⁶⁰ and events⁶¹ aimed at digital labour.

Within the European Union, an important labour regulatory movement due to the widespread use of technology was that of teleworking, which resulted in the signing of a European Framework Agreement in 2002⁶² which was the first autonomous agreement of this nature. Since then, particularly in the last ten years, European social partners from various sectors of the economy have produced a series of statements on the impact of the digitalisation of work⁶³.

Although the Framework Agreement on Telework has been in force since 2002, it was only with the government restrictions applied to contain the pandemic that this type of work was, in fact, implemented on a large scale in the European Union. The Framework Agreement helped to leverage the standardisation of teleworking in the European bloc, either by legislative implementation or by local social dialogue (sectoral or national).

In the pre-pandemic period, the regulation of telework, especially due to the implementation of the Framework Agreement, could be divided into two groups⁶⁴:

- Countries that had already regulated telework by specific laws: Belgium, Bulgaria, Czechia, Estonia, France, Germany, Greece, Hungary, Croatia, Italy, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, and Spain;
- Countries that did not have legal regulations, as telework was dealt with by social dialogues: Austria, Cyprus, Denmark, Finland, Ireland, Latvia, and Sweden.

Since the beginning of the pandemic, social partners and governments have had to deal with an extraordinary situation for adopting measures related to telework. The widespread

⁵⁸ "Home Work Convention" (1996), which guides Member States on the protection of the rights of workers who carry out their activities remotely, often using digital technologies.

⁵⁹ "Private Employment Agencies Convention" (1997), which provides principles and guidelines to regulate the activities of employment agencies, including those operating in the context of digital work.

⁶⁰ INTERNATIONAL LABOUR ORGANIZATION, *Publications on digital labour platforms*, 2023, in <https://www.ilo.org/global/topics/non-standard-employment/crowd-work/publications/lang--en/index.htm> (01.09.2023).

⁶¹ INTERNATIONAL LABOUR ORGANIZATION, *Meetings and events about digital labour platforms*, 2023, in <https://www.ilo.org/global/topics/non-standard-employment/crowd-work/events/lang--en/index.htm> (01.09.2023).

⁶² EUROPEAN TRADE UNION CONFEDERATION, *Framework agreement on telework*, 2002, in <https://www.etuc.org/en/framework-agreement-telework> (22.08.2023).

⁶³ RAFAEL MUÑOZ DE BUSTILLO LLORENTE, "Digitalization and social dialogue: Challenges, opportunities and responses". In VAUGHAN-WHITEHEAD, DANIEL / GHHELLAB, YUCEF / BUSTILLO LLORENTE, RAFAEL MUÑOZ DE, *The New World of Work*, 1st ed. Cheltenham (UK), Edward Elgar Publishing, 2021. pp. 110–154, p. 126.

⁶⁴ PABLO SANZ DE MIGUEL / MARIA CAPRILE / JUAN ARASANZ, *Regulating telework in a post-COVID-19 Europe*, 1st ed., Luxembourg, European Agency for Safety and Health at Work, 2021, pp. 6-7.

expansion of teleworking has led to the need for legislative changes and encouraged collective bargaining to adapt to the new reality, including the right to disconnect⁶⁵.

What can be observed is that teleworking, especially in the service sector, will probably stand out compared to face-to-face work, a movement that is currently taking place. There is no doubt that the pandemic has spread this type of work and stimulated the effective application of the 2002 Framework Agreement, but with a more flexible approach in the field of work organisation to adapt to the new reality.

It is interesting to highlight the "declaration of the European social partners on digitalisation" signed in March 2016 by the European Trade Union Confederation, BusinessEurope (Confederation of European Business), the European Centre of Employers and Enterprises providing Public Services and Services of General Interest (now SGI Europe), and the European Association of Craft, Small and Medium-Sized Enterprises (now SMEunited), in which it emphasises that job creation in this technological context, but with simultaneous safeguarding of the interests of companies and workers. This declaration gave rise to the European Framework Agreement on Digitalisation in 2020⁶⁶.

At the time the Telework Framework Agreement was concluded, the influence of technology in the labour environment was limited and still required the presence of the worker in some situations, such as attending business meetings. Nowadays, meetings can be held remotely with new technologies without losing quality, such as Zoom and GoogleMeet applications.

In the face of this technological dynamic, the European social partners have realised the need to conclude a new framework agreement that is more comprehensive compared to the one on teleworking. In this recent 2020 normative instrument, four challenges on work organisation were negotiated: digital skills and job security (Article 1), the right to disconnect (Article 2), the right to human control of artificial intelligence (Article 3), and respect for human dignity and surveillance of artificial intelligence systems (Article 4).

The Framework Agreement on Digitalisation is in line with the European Union's initiatives for a "just transition" to digitalisation, as set out in the White Paper on Artificial Intelligence⁶⁷, strongly promoting the need for upskilling and reskilling of workers in the face of new digital skills. On the employer side, it implies a commitment "to use digital technology in a positive way, seeking to improve innovation and productivity, for the long-term health of businesses and job security of the workforce and for better working conditions". On the other hand, workers commit "to support the growth and success of businesses and recognise the potential role of digital technology if businesses are to remain competitive in the modern world".

Due to the different customs and labour standards of each country and production sector, the autonomous agreement allows the worker's training to be carried out internally or externally,

⁶⁵ SANZ DE MIGUEL *et al.*, *Regulating telework in a post-COVID-19...*, pp. 17-18.

⁶⁶ EUROPEAN TRADE UNION CONFEDERATION, *Framework agreement on digitalisation*, 2020, in <https://www.etuc.org/en/document/eu-social-partners-agreement-digitalisation> (22.08.2023).

⁶⁷ EUROPEAN COMMISSION, *White paper on Artificial Intelligence - A European approach to excellence and trust*, 2020, in https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf (18.08.2023).

always at the expense of the employer, and guarantees adequate compensation if it has been carried out outside contractual hours. According to Battista⁶⁸, all these measures are fully in line with most of the collective or legal rules already in force in many European countries.

Indeed, digitalisation has pushed workers away from traditional workplaces to work from home and this has naturally led to a diminishing presence of trade unions in the business environment. Trade union density has fallen over time in all developed countries, including the Nordic ones that have adopted the Ghent system⁶⁹⁻⁷⁰. As a result, the realisation of agreements with a major impact on increasing economic and social rights has decreased compared to past decades.

The challenges faced by trade unions post-pandemic are immense and closely related to changes in the labour market. The crisis has accelerated the process of adopting digital technologies and automation in many industries, resulting in structural changes and reorganisation of work. This has led to the emergence of new forms of employment, such as self-employment, the gig economy, and short-term contracts, which are often beyond the reach of traditional trade unions. Unions struggle to represent and organise workers in these new forms of work, which weakens their membership base and bargaining power.

Faced with these challenges, unions need to adapt and reinvent their strategies to regain relevance and strengthen their representative capacity. This includes investing in technology and digital skills, seeking strategic partnerships and alliances, expanding their membership base, especially among workers in new forms of employment, and developing innovative mobilisation and collective bargaining strategies. In addition, trade unions need to work together with other social partners, such as civil society organisations and social movements, while maintaining close contact with governments, to address inequalities and fight for fair and decent working conditions.

The regulation of work in the digital age is under lively discussion around the world, especially in academia. There is a global movement to try to regulate digital work as far as possible, and the issue has also been the subject of social dialogues, albeit rather timidly, in the face of the notorious weakening of trade unionism.

⁶⁸ LEONARDO BATTISTA, *The European Framework Agreement on Digitalisation: a tough coexistence within the EU mosaic of actions*, 2021, in *Italian Labour Law e-Journal*, in <https://doi.org/10.6092/issn.1561-8048/13357> (01.08.2023).

⁶⁹ The Ghent system, implemented for the first time in the Belgian city with the same name, is characterised by the allocation of payment of certain welfare benefits, such as unemployment insurance, to the union rather than the state. Although the system was created in Belgium, in this country the system is hybrid, whereby the government also plays a role in maintaining the benefits together with the unions.

⁷⁰ ANDERS KJELLBERG / KRISTINE NERGAARD, *Union Density in Norway and Sweden: Stability versus Decline*, 2022, in *Nordic Journal of Working Life Studies*, in <https://doi.org/10.18291/njwls.131697> (04.09.2023).

6. Will trade unionism survive?

The digital age has made work increasingly multifaceted and generally far removed from a physical environment, which is the natural place for trade union action. The so-called "third labour genre" further complicates the situation, especially since there is no clear recipe for effective union representation in these cases. There is also the change in the worker's profile after the SARS-CoV2 coronavirus pandemic, as we have already explained.

For a decade now, it has been quite evident that forms of work have become more differentiated with technological innovations and, consequently, have pulverised union action, since the traditional interdependence between professional category and company is no longer a standard for labour relations.

These recent changes lead to an imbalance of the whole system of trade union representation. Notwithstanding, this systemic imbalance is part of a historical labour cycle of humanity. In all previous industrial revolutions, this tension has been present, which later resulted in a dialectical synthesis that brought a certain balance to the world of work.

All the industrial revolutions had major immediate consequences, with the extinction of various forms of labour that were prevalent before, such as the artisanal activity that predominated before the first revolution. These transitions brought significant challenges for the representation of the affected categories. Over time, however, new employment opportunities opened up and the labour movement progressively adapted to act in ways that implemented new social protections.

Increasingly specialised sets of workers are involved in a growing range of specific economic activities and from this specialised differentiation comes an increasing diversity of interests, as "each newly differentiated set of people desires a somewhat different set of social goals"⁷¹.

The social response of the trade union movement should be developed according to the needs and interests of workers in each economic category, with articulations to organise supporters and provide more effective bargaining power in relation to other groups in the face of new forms of labour.

The association of workers can be seen as a kind of brake on the process of social differentiation, as it has a full and independent effect on the processes of rights' regulation. There is no doubt that the absence of an organised and fragmented associative force will inevitably result in an imbalance of power between workers, employers, and service providers in general.

In any case, labour values are changing rapidly, not only on the part of service providers, but also on the part of workers themselves, especially young people, whose interests are closely linked to computerisation, both in their personal and professional lives.

⁷¹ ROBERT H. SALISBURY, *An Exchange Theory of Interest Groups*, 1969, in *Midwest Journal of Political Science*, in <https://doi.org/10.2307/2110212> (19.08.2023).

Trade unionism must first seek active engagement with the social partners to ensure that social policies are implemented in a way that benefits all workers. Social dialogue, whether bipartite or tripartite (social concertation), with support from supranational bodies, is essential to ensure effective action. To act against the new forms of labour is to repeat the mistakes of the past, as White⁷² preached at the beginning of the 20th century.

We believe that there are several paths that can be followed by the trade union movement to embrace workers in the digital age: (a) acting smartly and effectively to bring in new members, using digital means to reach out to workers; (b) offering both mediate and immediate benefits to workers; (c) internationalising trade unionism; (d) formalising international alliances between national unions to act together; (e) promoting transnational framework agreements together with international social partners.

As digital technologies dramatically reshape the world of work, many unions are undertaking large-scale change efforts to maintain their representativeness and, consequently, their bargaining power. It is impossible to predict whether change efforts will be successful or not. To do so, unions must have a good understanding of the audience they intend to represent, especially the new classes of workers who are deeply connected to technology and remote working.

Nowadays, any successful organisation – be it companies, public authorities or associations, such as trade unions – must necessarily rely on technologies, preferably advanced ones, to develop not only their purpose itself, but also to maintain effective communication with workers.

The use of internet-connected tools, such as messaging apps and social networks, is not only the best means of communicating with workers, but largely the only way, in the face of physical absence in the workplace.

However, the vast majority of trade unions do not utilise the potential of technology to communicate with workers. Trade union websites are often poor, confusing, and of low quality. And many do not adapt to mobile phones. There is little relevant content to raise workers' awareness for impactful actions. On social media and other digital platforms, a significant proportion of unions restrict themselves to posting only news. Furthermore, the unions only show weak engagement in the demonstrations in their network, which are devoid of the necessary strength to move those they represent.

Unions need to invest heavily in redesigning their own websites and apps, as well as professionalising their communication, especially to promote debates and assemblies online in an interactive, practical, and objective way. In short, for trade unions to succeed in their goals they must work on marketing just like any business. After all, lengthy, emotional speeches that once drew crowds no longer have the same effect.

⁷² HENRY WHITE, *The crisis in unionism...*, p. 775

Immediate advantages refer to benefits that are experienced or acquired instantly, without delay, in the present, or in a short period of time. They are rewards or gains that can be enjoyed consecutively. Mediated advantages are benefits that are achieved or perceived over a longer period of time in the future. They are results that require the use of time, effort, resources, or planning to be obtained in the long term⁷³.

We currently live a culture of immediacy or instant gratification, where people look for quick results to fulfil their desires⁷⁴. This culture is no longer a trend, but a reality already realised in contemporary society, driven by technology, the speed of communications, and the availability of information.

There is no denying that society revolves around the exchange of interests, not in the negative perspective, but on a positive macro-social scale, where life is based on systems of exchange, whether economic-wise or of any other values. To establish meaningful connections between people and entities, such as trade unions, there needs to be a balanced exchange of mutual interests. In this context, trade unions need to attract new members, as well as retain those who are already members, in an intelligent way that offers mediate and immediate benefits to workers.

The main reason for trade unionism is representation of workers, both vis-à-vis companies and governments. This is a medium-term and long-term interest, i.e. the services offered by trade unions are not delivered instantly.

Although not perfect, the Ghent System, currently adopted by Belgium (in hybrid form), Denmark, Finland and Sweden, is an important mechanism for trade union recruitment⁷⁵. As widely known in the literature, this system is closely linked to high union density, so much so that the mentioned countries have on average 65% unionised workers, while Norway, which has been outside Ghent since 1946, has a substantially lower rate of 50%⁷⁶.

In countries where Ghent is adopted, trade unions offer mediated benefits, especially unemployment insurance, to encourage workers to unionise. It is important to note that the main criticism of this system lies in the fact that it moves away from the welfare state doctrine, because as the state is not responsible, several benefits are not available to all workers in the country, but only to those who have chosen to unionise. Because of this, there is a movement to change the system in some countries, such as Denmark and Sweden⁷⁷.

⁷³ LEONARD S. CARRIER, *Immediate and Mediate Perception*, 1969, in *The Journal of Philosophy*, in <https://doi.org/10.2307/2024420> (02.09.2023).

⁷⁴ ANTHONY TURNER, *Generation Z: Technology and Social Interest*, 2015, in *The Journal of Individual Psychology*, in <https://doi.org/10.1353/jip.2015.0021> (12.09.2023).

⁷⁵ JENS LIND, *The end of the Ghent system as trade union recruitment machinery?*, 2009, in *Industrial Relations Journal*, in <https://doi.org/10.1111/j.1468-2338.2009.00543.x> (16.09.2023).

⁷⁶ JAYEON LINDELLEE / TOMAS BERGLUND, *The Ghent system in transition: unions' evolving role in Sweden's multi-pillar unemployment benefit system*, 2022, in *Transfer: European Review of Labour and Research*, in <https://doi.org/10.1177/10242589221080885> (13.09.2023).

⁷⁷ ANDERS KJELLBERG / CHRISTIAN LYHNE IBSEN, "Attacks on union organizing: Reversible and irreversible changes to the Ghent-systems in Sweden and Denmark". In LARSEN, TRINE PERNILLE / ILSØE, ANNA, *Den danske model set udefra - komparative perspektiver på dansk arbejdsmarkedsregulering, Komparative perspektiver på dansk arbejdsmarkedsregulering: et festskrift til professor emeritus Jesper Due og professor emeritus Jørgen Steen Madsen*, 1st ed. København, Jurist- og Økonomforbundets Forlag, 2016. pp. 279–302, p. 284.

What we see today is that trade unionism has entered a vicious circle that is difficult to get out of. In order to have bargaining power, there is a need to have workers affiliated and active in the trade union movement. If there is a drain of workers or disinterest in the class, this power decreases and, consequently, unions are unable to perform their main function.

That is why offering immediate advantages is also necessary to attract new members. In this respect, these advantages should be offered mainly to those workers who are involved in digital labour. Perks such as health insurance, vehicle insurance⁷⁸, life insurance, bank agreements, and other benefits can be effective mechanisms to attract new members. Trade unions should also promote training courses and reintegration into the labour market, especially for the use of new digital tools with those workers who are unfamiliar with this new way of working. Therefore, trade unions should act as a full support entity for workers, seeking to offer benefits that their categories need.

There is no doubt that globalisation together with digitalisation and Artificial Intelligence have decentralised work in the world, in a way that in the same company, for example, there are workers in the same team performing their duties in different corners of the planet. This digitalisation process has been greatly accelerated by the recent pandemic. In view of this, trade unions have been unable to act in defence of all workers in the category. And that is why we advocate the internationalisation of representative activities.

The first step that can be taken in this direction is the formalisation of international alliances of cooperation and partnership between national unions for joint action. The plasticity of trade union responses in terms of transnational solidarity opens up an almost limitless field of possibilities for labour regulation.

It is true that transnational collective bargaining of multinational enterprises is a reality, especially in the European Union. Multinational companies are major players in the global economy. There is no certain number of such companies, but it is estimated that there are around 60,000 multinationals controlling more than 500,000 subsidiaries spread in hundreds of countries around the world⁷⁹. Batt *et al.*⁸⁰ in a study on the impacts of multinationals in the field of call centres, state that these companies have a strong influence on changes in labour relations in national legal systems.

Internationalised production has been consolidated by the development of multinational companies and international production networks coordinated by these transnational groups, which incidentally weakens the power of the nation state. Because of their influence on the global labour scene, agreements concluded with multinational companies with subsidiaries in more than one country are of paramount importance.

⁷⁸ Vehicle insurance is especially important for those working on digital platforms such as Uber, as insurance for those working in this way usually is more expensive than the ordinary one.

⁷⁹ ESPACE MONDIAL L'ATLAS, *Multinational Corporations*, 2018, in <https://espace-mondial-atlas.sciencespo.fr/en/topic-strategies-of-transnational-actors/article-3A11-EN-multinational-corporations.html> (03.01.2022).

⁸⁰ ROSEMARY BATT / DAVID HOLMAN / URSULA HOLTGREWE, *The Globalization of Service Work: Comparative Institutional Perspectives on Call Centers*, 2009, in *ILR Review*, in <https://doi.org/10.1177/001979390906200401> (03.09.2023).

Although most transnational agreements were concluded after 2010, agreements with multinational companies have been in place for over thirty years, the first being the Danone International Framework Agreement of 1988. Most of the agreements were concluded in the metal, food, construction, and woodworking sectors with global effects, dealing with issues related to fundamental rights, trade union rights, health and safety, equal opportunities, training skills, social dialogue, working time, subcontracting, environment, restructuring, and others⁸¹.

In the global context, international and national trade union federations are the signatory parties. In the European Union, however, workers are usually represented by European Works Councils⁸², European and/or international workers' federations, and national workers' organisations. Nevertheless, none of these three entities has the full legitimacy or legal capacity to conclude transnational texts with multinational companies to have collective agreement effect in several Member States⁸³.

For this reason, employee representation has been regulated by Directive 2001/86/EC (*Societas Europæa*), which establishes the form of employee involvement in European public limited liability companies referred to in Regulation (EC) 2157/2001. In addition, Directive 2009/38/EC on the establishment of a European Works Council or a procedure in Community-scale undertakings and Community-scale groups of undertakings for the purposes of informing and consulting employees also regulates the procedures for transnational enterprise bargaining.

In order to conduct negotiations, both rules provide that a Special Negotiating Group must be set up to represent the employees of the participating companies and subsidiaries or establishments concerned, bearing a number of members proportional to the number of employees in each Member State affected. This Special Negotiating Group may only request the presence of representatives of the European trade union organisations to support its work, but without negotiating power.

The topics addressed in European transnational agreements differ significantly from those at the global level, which include provisions on basic labour rights and corporate social responsibility⁸⁴. European agreements, on the other hand, tend to deal with more specific issues, given the peculiarities arising from the European Union legal order.

Although transnational agreements of this kind are seen both in the European Union and globally, only in rare cases have relevant issues been the subject of negotiation. Certainly, the

⁸¹ ROMUALD JAGODZIŃSKI, "Transnational collective bargaining: a literature review". In SCHÖMANN, ISABELLE / JAGODZIŃSKI, ROMUALD / BONI, GUIDO / CLAUWAERT, STEFAN / GLASSNER, VERA / JASPERS, TEUN, *Transnational collective bargaining at company level, A new component of European industrial relations?*, 1st ed. Brussels, European Trade Union Institute, 2012. pp. 19–76, p. 61.

⁸² Initially regulated by Directive 94/45/EC, then by Directive 2009/38/EC.

⁸³ EUROPEAN UNION, *The role of transnational company agreements in the context of increasing international integration: COM(2008)419*, 2008, in <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52008SC2155> (04.09.2023).

⁸⁴ EVELYNE LÉONARD / ANDRÉ SOBCZACK, *Les accords transnationaux d'entreprises et les autres niveaux de dialogue social*, 2010, in *Courrier hebdomadaire du CRISP*, in <https://www.cairn.info/revue-courrier-hebdomadaire-du-crisp-2010-5-page-5.htm> (03.09.2023).

development of these international arrangements has been frail due to the lack of a more coordinated and effective action by trade unions vis-à-vis multinational companies.

Social dialogue has been seriously challenged in recent years of intense globalisation and digitalisation of work, especially after the Coronavirus pandemic, which accelerated the process that had been already underway. Despite the inertia of trade unions, which still insist on acting in the "traditional" way, without modernising and changing the method of dealing with workers, it is still possible for them to revitalise so that there is a minimum of dignity in the work of these new categories that have emerged and of those yet to come.

7. Conclusion

Based on the mass technological application in the workplace, with regard to both the distancing of workers from trade unionism and its replacement by technology as a starting point, this article has attempted to trigger a debate on the potentially transformative impact of Artificial Intelligence-driven automation and robotisation on trade unionism in the aftermath of the SARS-CoV2 coronavirus pandemic.

As things stand, trade union systems seem ill-prepared for the hypothesis of mass technological unemployment caused by the technological advances associated with the fourth industrial revolution. The bargaining power of any union system, based primarily on traditional employment, is exposed and weakened as a result of new technologies that allow human labour anywhere in the world, and also by far-reaching automation and robotisation that replace the worker entirely.

The question therefore arises as to whether we can still see trade union protection in the very near future if an increasing proportion of workers is not brought into the system, either through lack of interest or because they have been replaced by machines. As in all fields, changes in human labour must be followed by adaptation and changes in representative arrangements. As the meaning of work changes, it is up to trade unions, as a collective expression, to keep pace with this change.

Therefore, seeking to prevent technological advancement in the labour environment or seeking to regulate work in a way to avoid teleworking outside the country where companies are based could be compared to paddling against the tide.

The existence of trade unions will depend on a number of factors, such as the strategies of digital labour platforms, labour market institutions in each country, national regulations governing platforms, trade union cultures and identities, the strategic choices of union leaders, and the power of digital platform workers.

While still limited, there is great potential to expand the presence of trade unions in the digital labour world, but this requires a significant shift in the idea of social protection. It is essential,

therefore, that unions act intensively in favour of workers, be effective, and bear fruit, such as adding new rights to the category through collective bargaining or any other means of guaranteeing decent work.

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