



The Occupational Health in the Digital Age

Rethinking employer obligations

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Abstract

The introduction of technology into the workplace raises a number of issues, including occupational health. In this respect, the article shows that the principles of prevention at work are a relevant source for contributing to decent work for workers in the digital age. Starting with a mapping of digital tools and their impact on health and working conditions, the article looks at the importance of worker participation in establishing the risk assessment document. Then, the article discusses the strengthening of the legal force of principles of prevention with regard to the employer liability.

Keywords: digital work, occupational health, principle of prevention, risk assessment process, employer liability

1. Introduction

Work, technology and occupational health form a triptych which is actually made up of two intertwined pairs with close causal links between them. The first is made up of work and technology, while the second, equally central, is constituted by work and health.

In this network of relationships, technology plays a major role that is certainly not new. Indeed, work and technology have gone hand in hand for a very long time. From the earliest times, human has tried to create tools to make his work more efficient. However, in the industrial age, technical tools began to be associated with the purpose of productivity. Since then, the link between technology and

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work has continued to strengthen, leading first to the emergence of the automation of production in the 19th century and continuing with the dematerialisation of work in the 21st century.

If these two eras seem to be distant, invariants allow for certain parallels. Indeed, the idea that technology, as a source of rationality and efficiency, guides organisational choices remains valid. From the Taylorist factory to the smart company, the productivity gained through technology has continually transformed work. So, its influence is not new. But its current magnitude makes a significant difference. The introduction of digital tools into the enterprise has enabled the physical decompartmentalisation of markets, the functioning of the economy in “a synchronised way on a planetary scale”¹.

This quest for performance is also, and perhaps above all, a quest for time. Speed, which is at the heart of competitive advantage creates an endless spiral in which “the time thus gained is immediately put at the service of the search for ever greater productivity”² and gives the individual the belief that he is the master of time. Seemingly master of time, “[the individual] falls under the yoke of urgency”³. This forced march, which guides organizations in their technical choices, can lead them to adopt techniques that are likely to entail risks of harm to workers’ health.

While work and technology constitute the first binominal, work and health constitute the second relationships which is expressed in the involvement of the worker’s body. However, there is not always a consensus on identifying the pathological nature of digital tools. Difficult to identify and measure, it can be obscured by their ambivalent character, which is both liberating and constraining. In this sense, there are many illustrations. Thus remote working can be a source of positive effects by encouraging autonomy, and conversely trigger new techno-social risks such as permanent availability and information overload. Connected objects, for their part, depending on the use made of them, can be very useful in the health field, but they can also be used as surveillance tools. Moreover, the risks may be intrinsic to the techniques implemented and this observation renews the debate on the neutrality of the technique⁴. For instance, voice control facilitates the preparation of orders in transport warehouses by allowing “hands-free” work, but this technology creates a very high level of stress for pickers who are subjected to the rhythmic orders of the machine⁵. This is why the use of exoskeletons, connected objects inseparable from algorithms, artificial intelligence and big data at work call for great vigilance.

Against such context, the aim of the article is to determine how the occupational health policy could contribute to decent work for workers in the digital age.

¹ Michel LALLEMENT: *Le travail sous tension*. Paris, Seuil, 2010. 20.

² Nicole AUBERT: *Le culte de l’urgence, la société malade du temps*. Paris, Flammarion, 2010. 71.

³ Ibid.

⁴ See: Pierre-Yves VERKINDT: Ambivalences et promesses de l’intelligence artificielle dans le champ de la santé et de la sécurité des travailleurs. In: Patrice ADAM – Martine LE FRIANT – Yasmine TARASEWICZ (eds.): *Intelligence artificielle, Gestion algorithmique du personnel et droit du travail – Les travaux de l’AFDT*. Paris, Dalloz, 2020. 201.

⁵ Ibid.

From such perspective, it is certainly possible to strengthen the rights of employees, but it is also possible to focus attention on the obligations of the employer, since the employer is the one who chooses the digital tools at work. From this angle, the article carries out thinking about strengthening the legal consideration of the impact of digital technologies on the occupational health imperatives with regard to organizational choices resulting from the freedom of enterprise.

First of all, in the section 1, the analysis will follow a reflection on how to enhance primary prevention through an emphasis on the consideration of real work in the face of digital risks. Indeed, even if, the legal framework obliges employers to draw up a risks inventory, employees are the main stakeholders who have a precise vision of the work as it is carried out in practice. Therefore, giving them a place in the risk assessment process by promoting the expression of employees seems to be the first step in building a prevention policy adapted to the realities of work.

Secondly, in the section 2, the article aims to reflect from the liability of the employer with regard to the principle of prevention. Generally, employers have the duty to ensure the safety and health of workers in all aspects related to the work. In this sense, they are obliged to avoid risks, to assess risks that cannot be avoided and to combat risks at source. This diagnosis is part of a preventive approach aimed at anticipating the risks. It refers to the logic of primary prevention as developed by the World Health Organization (WHO). It could also be used to assess the employer's liability in order to strengthen the principle of prevention. When the employer shirks his obligation to assess risks, he shirks his obligation of prevention. This results in a lower guarantee of the employee's health and constitutes an autonomous damage.

2. Enhance primary prevention in face of digital risks

A recent European survey on musculoskeletal disorders (MSDs) and psychosocial risk factors in the workplace makes the worrying observation that recent trends in the labour market, particularly digitalisation, have led to a deterioration in working conditions⁶. On the basis of this observation, the question arises as to which preventive strategies could promote the improvement of occupation health. To answer this question, it is necessary to focus on the devices, and then on the work. In such an approach, the function of occupational health prevention is twofold. On the one hand, the prevention policy contributes to the elimination of risks, on the other hand it contributes to the development of sustainable working conditions.

⁶ Sem VANDEKERCKHOVE – Karolien LENAERTS – Lise SZEKÉR – Sam DESIERE – Miet LAMBERTS – Monique RAMIOUL: *Musculoskeletal disorders and psychosocial risk factors in the workplace – statistical analysis of EU-wide survey data*. Luxembourg, Publications Office of the European Union, 2021. 3.

2.1. digital tools analysed as a risk factor

Occupational safety and health policies are mainly based on the Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health at work⁷. Article 6(1) of the text states that “within the context of his responsibilities, the employer shall take the measures necessary for the safety and health protection of workers, including prevention of occupational risks”. In order to implement these measures, he must avoid risks, assess those which cannot be avoided, and combat them at source⁸.

Occupational risk can be defined as “the likelihood of harm to safety or physical or mental health caused by a work activity”⁹. Linked to the work activity, occupational risk is necessarily influenced by changes in work and product methods. Therefore, the current digital transformation in the workplace will not be without consequences for safety and occupational health as it can represent a risk factor. Prosaically, in the industrial field, a robot represents a risk factor as it could be responsible for an injury. In other terms, the presence of a robot in the workplace then creates an occupational risk of injury. Thus, analysing digital devices as a risk factor constitutes the first step in developing an occupational safety and health policy.

In terms of technological progress, the range of digital tools seems endless. The evolution of the lexical field illustrates this constant flow of innovation in this field. In this panorama, starting from the term “computer”, the new information and communication technologies (NICT) then arrived to give way to the single information and communication technologies (ICT), to finally be replaced by the digital, now associated with algorithms and artificial intelligence (AI). In the industry, the development of automation technologies has made possible the arrival of collaborative robots and exoskeletons. The deployment of all of these elements forms an ecosystem that makes up the digital age.

In companies, the equipment followed the same evolution; no business sector is immune to digitalization. To accompany this trend, the European Parliament and the Council adopted a decision (UE) 2022/2481 of 14 December 2022 establishing the Digital Decade Policy Program 2030¹⁰. With this decision, the European Union wanted to set a number of targets “in order to follow the trajectory of the Union regarding the pace of the digital transformation”¹¹. Regarding the digital transformation of businesses, the digital target to be achieved is that at least 75% of Union enterprises have adopted

⁷ OJ L 183., 29.06.1989., 1.

⁸ Article 6(2) (a), (b), Council Directive 89/391/EEC.

⁹ Lucie JUBERT: *L'organisation du travail et la prévention des risques*. Thesis. Paris Nanterre University, 2019. 17.

¹⁰ OJ L 323., 19.12.2022., 9.

¹¹ “The digital targets follow the four cardinal points identified in the Digital Compass Communication, identified as the essential areas for the digital transformation of the Union: digital skills, digital infrastructures, the digitalization of businesses, and the digitalization of public services”, Ibid. 10. point.

cloud computing services, big data or AI in line with their activities and more than 90% of EU SMEs reach at least a basic level of digital intensity¹².

According to the text, promoting the transformation of the businesses through digital way means to adopt new digital technologies in industrial and services ecosystems¹³. In this perspective, exoskeletons, collaborative robots so-called cobots, and connected objects will develop. While productivity gains are expected for each of them, the benefits in terms of occupational health can be discussed.

Thus, exoskeletons, defined as “a personal assistance system”¹⁴ that increase or supports the user’s strength, seem to be a solution to the problem of MSDs, which is the main work-related health problem in the EU¹⁵. Their ambivalence is highlighted by the French National Institute for Research in the Prevention of Occupational Accidents and Diseases (INRS), which underlines that they may also be responsible for troubles in another part of the body¹⁶.

The same can be said about cobots. Designed to interact with workers, to provide them technical assistance, the cobot is seen by companies as a key to competitiveness. At the same time, when robots are coupled with an AI system, workers are under the command of the machine. Consequently, as several studies have shown, working alongside them can cause “excessive cognitive load”¹⁷ or provoke suffering due to the loss of autonomy¹⁸.

The arrival and the development of connected objects, for their part, should also bring about major changes. Based on the ability to track user-related information and the data transmission mechanism, these devices offer a wide range of possibilities in the field of occupational health. Some of them enable measurement of the metrics of a working environment (heat, light, noise), while others control the user’s posture, the arduousness at work. Whether they can effectively serve as an alarm in the event of a health risk, when they are associated with big data and AI, it is also possible to use them in order to compare data collected with optimal values. The risk is then to take this optimum as a standard to be achieved¹⁹.

With particular regard to AI used to manage workers, the European Agency for Safety and Health at Work (EU-OSHA) commissioned a research programme on digitalisation and occupational safety

¹² Ibid. article 4, (3), (a), (b).

¹³ Ibid. 16. point.

¹⁴ M. PETERS – S. WISCHNIEWSKI: *The impact of using exoskeletons on occupational safety and health*. Discussion paper. Luxembourg, Publications Office of the European Union, 2019. 2.

¹⁵ “The prevalence of 59,31 % is observed in the employed population in UE”, VANDEKERCKHOVE et al. op. cit. 32.

¹⁶ *Exoskeletons at work: impact on occupational safety and health – an overview*. Paris, INRS, 2018. 18–22.

¹⁷ Nicola STACEY – Peter ELLWOOD – Sam BRADBROOK – John REYNOLDS – Huw WILLIAMS – David LYE: *Foresight on new and emerging occupational safety and health risks associated digitalisation by 2025*. Luxembourg, Publications Office of the European Union, 2018. 37.

¹⁸ In this sense: Cédric VILLANI: *Give a sense to artificial intelligence: for a European and national strategy*. Paris, 2018. 105.

¹⁹ Vincent GROSJEAN – Virginie GOVAERE: ICT and connected objects: what are the health and safety issues? *Hygiène et sécurité du travail*, INRS, no. 244. (2016) 108–112.

and health (OSH)²⁰, focusing specifically on AI-based worker management (AIWM). According to the study, the AIWM system is defined as “a worker management system that gathers data, often in real time, from the workplace, the workers and the work they do, which is then fed into an AI-based system that makes automated or semi-automated decisions, or provides information for decision-makers, on worker management-related questions”²¹. The research shows that while AIWM can provide opportunities to improve workers’ safety and health²², it also poses numerous risks to occupational safety and health²³.

To conclude this brief overview, it must not forget the personal computer and the smartphone which are now currently the “classic” digital devices. As they bring autonomy and flexibility to work organisation, they simultaneously have both positive and negative effects on workers’ well-being²⁴.

In short, it is possible to say that technology, like a *Pharmakon*, is both a remedy and a poison²⁵. It must be admitted that it is difficult to determine the benefits or otherwise of uses and effects of the introduction of digital devices. Technology, by its ambivalent nature, can cause disturbances that may seem far removed from its primary purpose. Consequently, the risk assessment as imposed by the Council Directive 89/391/ECC, requires being aware of this ambivalent character, which is a source of autonomy as well as a source of constraint.

In addition, the quest for rationality that guides technological choices, is another source of difficulty. However, European and Canadian studies show that investment in security and health prevention increases workers productivity and performance²⁶.

²⁰ Aleksandr CHRISTENKO – Vaida JANKAUSKAITĖ – Agnė PALIOKAITĖ – Egidius Leon VAN DEN BROEK – Karin REINHOLD – Marina JÄRVIS: *Artificial intelligence for worker management: an overview*. Executive Summary. Luxembourg, Publications Office of the European Union, 2022. [hereinafter: CHRISTENKO et al. (2022a)]; and Karin REINHOLD – Marina JÄRVIS – Aleksandr CHRISTENKO – Vaida JANKAUSKAITĖ – Agnė PALIOKAITĖ – Arnold RIEDMANN: *Artificial intelligence for worker management: implications for occupational safety and health*. Report. Luxembourg, Publications Office of the European Union, 2022. [hereinafter: CHRISTENKO et al. (2022b)]

²¹ CHRISTENKO et al. (2022a) op. cit. 12.

²² “[...] for example, by providing tools for better monitoring of hazards and mental health of workers, improving workers’ engagement and job satisfaction, helping to design and conduct safety training, and more”. Ibid. 5.

²³ “[...] workers losing control over their jobs, increased work intensity and performance pressure, decreased social support from managers, individualization and dehumanization of workers and their representatives, mistrust, limited worker participation, blurring work-life balance, and more. These risks in turn might lead to numerous negative consequences for workers’ physical and psychosocial wellbeing, such as musculoskeletal disorders, cardiovascular disorders, fatigue, stress, anxiety and burnout”. Ibid.

²⁴ “Both positive and negative effects of T/ICTM on work-life balance are reported by nearly all of the national studies, sometimes even by the same individuals. [...] At the same time, there is some risk of overlap between work and personal or family life – work-home interference (and also home-work interference) – because of longer working hours and the mix of duties at the same time, which may result in blurring work-life boundaries and increased work-family conflict.” Jon MESSENGER – Oscar Vargas LLAVE – Lutz GSCHWIND – Simon BOEHMER – Greet VERMEYLEN – Mathijn WILKENS: *Working anytime, anywhere. The effects on the world of work*. Research report. Luxembourg-Geneva, Office of the European Union – International Labor Office, 2017. 29.

²⁵ To describe technology the philosopher Bernard Stiegler borrows this notion of “pharmakon” from Jacques Derrida, himself borrowing it from Plato, see : Bernard STIEGLER: *Technique and time*. Paris, Galilée, 1996.

²⁶ *Socio-economic costs of accidents at work and work-related ill health*. Directorate-General of Employment Social Affairs and Inclusion. 2011. And Institute for Work & Health: *Estimating the financial return on employers’ investments in the prevention of work injuries in Ontario*. Toronto, 2022. e.g. www.iwh.on.ca.

2.2. Enhance primary prevention focusing on work

Such an approach calls for a broader interest in the issue of the sustainability of working conditions. Sustainability is rooted in the concept of sustainable development, which appeared in 1987 in the Brundtland Report, entitled “Our Common Future” and presented to the United Nations Commission on Environment and Development²⁷. According to the report, the sustainable development is one that “meets the needs of the present without compromising the ability of future generations to meet their own needs”²⁸. More specifically, sustainability at work is a concept that emerged from the European collaborative research programme Work Life Development in Europe, known as SALTSA which brought together twenty-two researchers from thirteen countries and eight academic disciplines²⁹. Applied to human and social resources in working live, sustainability is defined as “the ability of employees, groups, and organisations to keep on functioning in any situation faced”³⁰.

Several reports from the European Union testify to the Union’s attention to this issue. In 2012, Eurofound published a study on sustainable work and ageing workforce³¹ which underlines the need to significantly improve the working conditions “to keep those aged 55-64 in work and to raise their average age of exit from labour market”³². More recently, the Eurofound’s flagship report *Working conditions and sustainable work: an analysis using the job quality framework*³³ explores trends in working conditions based on the four most recent waves of the European Working Conditions Survey (EWCS). It demonstrates that job quality³⁴ has “a substantial effect on health and well-being and is the key factor in making work more sustainable over the live course”³⁵. In other terms, job quality and sustainable work are correlated. There is a “positive feedback loop between high-involvement work organisation, well-designed jobs and better health outcomes in a model of work in which the demands of the job are balanced by the resources encircling it”³⁶. Achieving sustainability requires improving job quality and getting more and better job needs improving sustainable work. This relationship must

²⁷ Gro Harlem BRUNDTLAN: *Our Common Future*. Oslo, World Commission on Environment and Development, 1987.

²⁸ Ibid. 27 point.

²⁹ Peter DOCHERTY – Mari KIRA – Abraham B. (Rami) SHANI: *Creating Sustainable Work Systems*. London, Routledge, 2008.

³⁰ Ibid. 234.

³¹ Patricia VENDRAMIN – Gérard VALENDUC – Anne-Françoise MOLINIÉ – Serge VOLKOFF – Michel AJZEN – Evelyne LÉONARD: *Sustainable work and the ageing workforce*. Luxembourg, Publications Office of the European Union, 2012.

³² Ibid. 7.

³³ Isabella BILETTE – Jorge CABRITA – Franz EIFFE – Barbara GERSTENBERGER – Agnes PARENT-THIRION – Oscar VARGAS – Tina WEBER: *Working conditions and sustainable work: an analysis using the job quality framework*. (Challenges and prospects in the EU series) Luxembourg, Publications Office of the European Union, 2021.

³⁴ “In the last two decades, job quality has gained importance as a central policy objective at EU level. With the introduction of the European Employment Strategy in 1997 and the subsequent launch of the Lisbon Strategy in 2000, the concept of ‘more and better jobs’ reached the core of the policy debate”. And job quality is analyzed in six dimensions: physical environment, work intensity, skills and discretion, working time quality, social support and prospects. Ibid. 7., 9.

³⁵ Ibid. 30.

³⁶ Ibid. 63.

be understood in order to be taken into account within the framework of the employer's occupation health prevention policy.

In parallel with all these studies, the European Commission's Communication announcing the EU Strategic Framework for Health and Safety at Work 2021-2027, affirms that EU occupation safety and health (EU-OSH) legislation is essential to protect the health and safety of the almost 170 million workers in the EU³⁷.

Over and above that statement of intent, the EU-OSH framework aims in particular anticipating and managing the change brought about by the digital transition. Aware of the technology issue³⁸, the Commission intends to modernise the Workplace Council Directive³⁹ and the Display Screen Equipment Council Directive⁴⁰ by 2023. The European Parliament and the Council have also adopted a proposal for a Regulation on machinery products⁴¹ with view to reform the Machinery Directive⁴². In particular, the proposal provides for the prevention of contact risks leading to hazardous situations and psychological stress that may result from human-machine interaction. In a simplification and complementary purpose, the AI act⁴³ delegates the conformity assessment to the machinery legal proposal. In this way, the risk assessment for the whole of the machinery with AI systems will only be carried out under the future Regulation on machinery products. Finally, the Commission will ensure an appropriate follow-up to the European Parliament Resolution on the right to disconnect⁴⁴.

With regard to psychological and ergonomic risks, the European Commission, while underlining the importance of the stress at work, is currently only taking actions outside the legislative field. The strategy is based on the launch of an EU-OSHA-led campaign on healthy workplaces, a "non-legislative" initiative to assess emerging issues related to workers' mental health, the development of e-tools and guidelines for risks assessment including in particular psychosocial and ergonomic risks and the publication of an opinion written by a panel of experts on mental health. In other words, it is mainly based on knowledge production⁴⁵.

³⁷ European Commission: EU strategic framework on health and safety at work 2021-2027, Occupational safety and health in a changing world of work. COM(2021)323final. 28 of June 2021.

³⁸ Ibid. 6.

³⁹ Council Directive 89/654/EEC of 30 of November 1989 concerning the minimum safety and health requirements for the workplace. OJ L 393., 30.12.1989., 1.

⁴⁰ Council Directive 90/270/EEC of 29 of May 1990 on the minimum safety and health requirements for work with display screen equipment. OJ L 156., 21.06.1990., 14.

⁴¹ Proposal of a regulation of the European Parliament and of the Council of 21 of April 2021 on machinery products COM(2021)202final.

⁴² Directive 2006/42/EC of the European Parliament and of the Council of 17 of May 2006 on machinery. OJ L 157., 9.06.2006., 24.

⁴³ Proposal for a Regulation of the European Parliament and of the Council of 21 of April 2021 laying down harmonized rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts. COM(2021)206final.

⁴⁴ European Parliament resolution of 21 of January 2021 with recommendations to the Commission on the right to disconnect (2019/2181(INL)).

⁴⁵ See in particular: David WALTERS – Emma WADSWORTH: *Occupational safety and health prevention services/experts in Europe*. Luxembourg, Publications Office of the European Union, 2023.

The European OSH framework is both old, based on the Council Directive 89/391/EEC, and recent, as the different proposals show, and at the same time it could be significantly strengthened. In this respect, several avenues could be explored.

Firstly, according to the Council Directive 89/391/EEC, the employer shall implement the measures necessary for the safety and health protection of workers on the basis of the general principles of prevention set out in at Article 6(2). A list of nine general principles of prevention guides the employer's prevention policy. In view of the digitalisation of work, one of them focuses the attention. It is the principle of adapting work to the individual that seems particularly important, for which the Council Directive specifies "especially as regard the design of workplaces, the choice of work equipment and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate and to reducing their effect on health". In an increasingly technical occupational environment, it places workers at the centre of the prevention policy.

"Adapting the work to the individual" means that the work environment has to be suitable to the worker, taking into account specific requirements of the individual, both in terms of ergonomics and in terms of work organisation⁴⁶. In this respect, two other European regulations deserve attention. The first one, the Council Directive 90/270/EEC of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment⁴⁷ stipulates that "system must display information in a form and at a pace which are adapted to operators"⁴⁸. The second one, the Directive 2003/88/EC of the European Parliament and of the Council of 4 November 2003 concerning certain aspects of the organisation of working time⁴⁹ states, even more clearly, in Article 13 that "an employer who intends to organise work according to a certain pattern takes account of the general principle of adapting work to the worker".

As technology advances in all workplaces and professions, this principle could lead organisational choices and impulses for health policy. It gives an opportunity to (re)emphasise the role of law which is the humanisation of technology⁵⁰. Designed to organise life in society, the law aims to ensure social order by guaranteeing the individual's need for stability and security. In the face of the growing presence of digital technology, the general principle of adapting work to the individual makes possible to humanise the relationship between worker and machine, far from any technologic or economic determinism⁵¹.

Secondly, it seems difficult for the employer to develop an effective prevention policy that adapts the work to the workers without asking their opinion on their own work. On the basis of the freedom of

⁴⁶ Hervé LANOUZIÈRE: Adapter le travail à l'homme: la portée pratique et juridique insoupçonnée d'un principe essentiel de la santé au travail. *Semaine Sociale Lamy*, n° 1873, 9 of September 2019.

⁴⁷ OJ L 156., 21.06.1990., 14.

⁴⁸ Annex, 3(d), Council Directive 90/270/EEC of 29 of May 1990 op. cit.

⁴⁹ OJ L 299., 18.11.2003., 9.

⁵⁰ Alain SUPIOT: *Homo juridicus, Essai sur la fonction anthropologique du Droit*. Paris, Points, 2009. 203.

⁵¹ ERIS HEYER – PASCAL LOKIEC – DOMINIQUE MÉDA: *Une autre voie est possible*. Paris, Flammarion, 2018. 329.

expression⁵², allowing employees to express themselves on their working conditions helps to understand the gap between the prescribed work and the realities of work, integrating the intelligence mobilised by the task to achieve the expected result⁵³. From this point of view, Christophe Dejours stresses the need for “discussion rooms essentially dedicated to collective deliberation, an essential time for any rational management of the work process, the safety of people and the safety of installations and community life”⁵⁴. By sharing each worker’s knowledge of the real work, these discussion forums are an opportunity to highlight shortcomings. This step is a prerequisite for the implementation of occupational health prevention measures.

In addition to preventing risks, taking account of the difficulties expressed by workers is also an opportunity for employer to improve the quality of the work carried out. Moreover, it contributes to the recognition of the work⁵⁵ provided that the use of speech is acknowledged⁵⁶, otherwise it entails an additional risk of suffering for the employee⁵⁷.

Thirdly, with specific regard on IA, the European Commission has published a proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (artificial intelligence act)⁵⁸. The AI systems used in the workplace are classified as high-risk⁵⁹. The proposal received a very mixed reception from experts⁶⁰. Some criticised the lack of social dialogue⁶¹, while others said the proposal didn’t guarantee fundamental rights⁶².

Beyond this proposal, the European social partners’ autonomous framework agreement on digitalisation⁶³ and the EU-OSHA study⁶⁴ deserve the attention as they share an approach based on social dialogue. The European social partners’ framework agreement affirms that the IA system should be respectful of human rights and non-discrimination rules, be lawful, fair and transparent.

⁵² Article 10 of European Convention on Human Rights. And Article 11 of Charter of Fundamental Rights of the European Union, OJ C 326., 26.10.2012, 391.

⁵³ Christophe DEJOURS: *Le facteur humain*. Paris, Presses Universitaires de France, 2022. 44.

⁵⁴ Ibid. 68.

⁵⁵ “The recognition is the specific form of moral-symbolic retribution granted to ego in return for its contribution to the efficiency of the organization of work, that is to say for the commitment of its subjectivity and its intelligence”. Ibid. 62.

⁵⁶ Cyril WOLMARK: Quelle place pour le travail dans le droit du travail. *Droit social*, 2016. 439.

⁵⁷ Luc DE MONTVALON: Encourager l’expression des travailleurs pour améliorer les conditions de travail. *Revue de Droit du Travail*, 2022. 561.

⁵⁸ Proposal for a Regulation. COM(2021)206final op. cit.

⁵⁹ “AI system used in employment, workers management and access to self-employment, notably for the recruitment and selection of persons, for making decisions on promotion and termination and for task allocation, monitoring or evaluation of persons in work-related contractual relationships, should also be classified as high-risk, since those systems may appreciably impact future career prospects and livelihoods of these persons”. Ibid. 36 point.

⁶⁰ See: Vaida JANKAUSKAITĖ – Aleksandr CHRISTENKO – Agnė PALIOKAITĖ : *Artificial intelligence for worker management: existing and future regulations*. Policy brief. Luxembourg, Publications Office of the European Union, 2022.

⁶¹ Valerio DI STEFANO: The EU Proposed Regulation on AI: a threat to labor protection? *Global Workplace Law & Policy*, 16. 04. 2021. e.g. <https://tinyurl.com/bde58t77>

⁶² Aida PONCE DEL CASTILLO: The AI Regulation: entering an AI regulatory winter? Why an ad hoc directive on AI in employment s required. *ETUI*, 2021.07.

⁶³ Signed on 22 of June 2020 by employers’ organizations: BusinessEurope, SMEUUnited, CEEP and by workers’ organization: ETUC.

⁶⁴ CHRISTENKO et al. (2022b) op. cit.

In addition, from both a technical and social perspective, it should also be robust and sustainable. To ensure an IA system that respects these commitments, the agreement places the principle of “human in control” at the heart of a trustworthy AI system. In this perspective, it invites the social partners to explore the potential of digital devices to increase the productivity of companies and the well-being of the workforce.

The respect of human dignity related to personal monitoring is also an agreement concern. Nevertheless, the respect of human dignity facing AI is a broader concern. To sum, the agreement constitutes a helpful methodological tool to allow social partners to take up this issue⁶⁵. For its part, the EU-OSHA report *Artificial intelligence for worker management: implications for occupational safety and health*⁶⁶ calls for “strong prevention through design approach”⁶⁷ when introducing AI work management system, advising to apply a “precautionary principle”⁶⁸. The study stresses the need to integrate a ‘human-centred’ approach based on an effective dialogue between workers, employers, developers, “ensuring workers’ involvement and participation in all stages of design, development, implementation and assessment of AIWN systems at work”⁶⁹.

Both approaches emphasise the importance of involving employers and workers in the assessment process throughout the life cycle. Given the high level of risk, workers and their representatives need to be involved in discussions about preventive measures from the start of the project and the AI system needs to be discussed to ensure that it remains compliant with the principles. Regular assessment of compliance will be crucial and expert procedures will undoubtedly have to be implemented.

To sum, upstream, the challenge is to give impetus to occupational safety and health policy where the work is adapted to the worker. Downstream, the challenge is to place the employer’s liability at the centre of the reflection in so far as, it is the employer who, by virtue of his freedom to undertake, decides on the organisational choices.

3. Enhance prevention policy with regard to the employers’ liability

As stated by the European Commission, the Council Directive 89/391/EEC is based on the prevention guiding principle⁷⁰. The promotion of the implementation of the legal framework within company can take several forms that complement each other. The scope of measures that can be deployed ranges

⁶⁵ Marie-Cécile AMAUGER-LATTES. Le dialogue social: un outil de régulation de l’IA en entreprise. *Droit social*, 2021. 146.

⁶⁶ CHRISTENKO et al. (2022b) op. cit.

⁶⁷ Ibid. 5.

⁶⁸ Ibid. 21.

⁶⁹ Ibid.

⁷⁰ The practical implementation of the provisions of the Health and Safety at Work Directive 89/391 (Framework), 89/654 (Workplaces), 89/655 (Work Equipment), 89/656 (Personal Protective Equipment, 90/269 (Manual Handling of Loads) and 90/270 (Display Screen Equipment). COM(2004)62final. 5 of February 2004.

from awareness raising to coercion. The awareness measures carried out by the Member States, such as organization of events around the subject, are numerous⁷¹. At the same time, assessment tools are provided from the occupational safety and health agencies to companies. All these actions are necessary and important as they make possible to remove the obstacles linked to the misunderstanding of the risks by company⁷². Alongside of the way of convincing companies that risk assessment is essential, there is another, complementary way, which consists of sanctioning those who do not take the principle of prevention into account. To strengthen the legal force of the principle of prevention, two level can be explored. The first is in the absence of the realization of the professional risk, the second is in the occurrence of a professional risk.

3.1. To strengthen the legal force of the principle of prevention, in the absence of the realization of a professional risk

According to the Council Directive 89/391/EEC, the purpose of the risk assessment is the implementation of measure in order to avoid or reduce the risk. Article 9 (1) (a) provides that “the employer shall be in possession of an assessment of the risks to safety and health at work” and Article 10 (3) (a) adds that “the employer shall take appropriate measures so that workers [...] shall have access [...] to the risk assessment”. The formalisation of the assessment constitutes the material and legal support of the prevention policy. Its existence is therefore fundamental, over and above the appreciation of its quality.

Promoting such an approach upstream of any risk occurrence presupposes a balance between an incentive method and a coercive method in which the national and European safety and health agencies on the one hand, and the labour inspector on the other hand could be key players.

3.1.1. The incentive measures level

In practice, the first stage of the prevention process is variously implemented at workplace, in particular in small and medium-sized enterprises (MSEs). The European Commission, in its Communication *on the practical implementation of the provisions of the Health and Safety at Work* stresses that this type of employer “reports that the development of such prevention plans is a very demanding task⁷³. Aware of this difficulty, some countries had provided for exemptions from the requirement to

⁷¹ *Risques psychosociaux au travail: une problématique européenne. = Psychosocial risks at work, a European issue. EUROGIP, Janvier 2010. Available: https://eurogip.fr/docs/Eurogip_RPSautravail_2010_47F.pdf*

⁷² See: COM(2004)62final. op. cit. 14.

⁷³ COM(2004)62final. op. cit. 14.

document the risk assessment and provide this information to workers due to the number of workers. However, in a judgment of 7 February 2002, the Court of Justice considered that “it should be noted that a provision which, for certain types of undertaking, having regard *inter alia* to the number of workers employed by them, grants the competent Federal minister the power to exempt occupational physicians and occupational safety specialists the obligation to draw up reports on the assessment of working conditions seems to be clearly contrary to Articles 9(1)(a) and 10(3)(a) of the Directive, in as much as undertakings employing 10 or fewer workers may thereby be absolved of the obligation to keep a risk assessment in documentary form”⁷⁴.

In order to help these types of enterprises, the European Safety and Health agency has made this issue a priority, launching a broad programme from 2014 to 2018. The report, based on fieldwork carried out by the Safe Small and Micro Enterprises project (SESAME) shows that the most common attitude observed ‘common sense’ is sufficient for OSH and that health risk are underestimated⁷⁵. Nevertheless, the belief that risks are part of job is not inevitable. To foster good practice, including in small and micro-enterprises, many countries are organising initiatives and providing tools⁷⁶. For its part, EU-OSHA has developed the Online Interactive Risk Assessment Platform (OiRA) to promote proper risk assessment in order to ensure a healthy workplace. Currently, more than 300 tools are available in different languages and 19 Members States have developed and implemented the programme in their countries.

In short, at the incentive level, even if it is always possible to improve actions, it must be admitted that many tools exist. Nevertheless, in the context of the multifactorial evolution of work and working conditions in the digital age, a preventive policy based only on support and awareness-raising actions as EU-OSHA promoted on incentive method cannot be sufficient.

3.1.2. The coercive measures level

According to the Council Directive 89/391/EEC, the employer has both a duty to assess risk from hazards that cannot be avoided in order to implement appropriated measure and a duty to be in possession of an assessment of risks to safety and health at work. Although the Council Directive places the duty to take the necessary measures for the safety and health “within the context of the responsibilities of employers”, it is silent on sanctions. At national level, according to David Walters, penalties for non-compliance with the prevention policy vary according to national regulatory

⁷⁴ CJEC of 7 of February 2002, C-5/00, *Commission v. Germany*.

⁷⁵ David WALTERS – Emma WADSWORTH – Peter HASLE – Bjarke REFSLUND – Monique RAMIOUL – Ann-Beth ANTONSSON: *Safety and health in micro and small enterprises in the EU: the view from the workplace*. Luxembourg, Publications Office of the European Union, 2018. [hereinafter: WALTERS et al. (2018)].

⁷⁶ Peter HASLE – Bjarke REFSLUND – Ann-Beth ANTONSSON – Monique RAMIOUL – David WALTERS: *Safety and health in micro and small enterprise in the EU: from policy to practice*. Luxembourg, Publications Office of the European Union, 2017.

styles⁷⁷. Nevertheless, this need for harmonisation is emphasised by the European Commission, in a communication entitled *Adapting to change in work and society: a new Community strategy on health and safety at work 2002-2006* which indicates that “the checks carried out by the inspection services must give rise to uniform sanctions which are dissuasive, proportionate and effectively applied”⁷⁸.

Applying such an affirmation to the principle of risk assessment presupposes that the unique lack of risk assessment characterizes an autonomous fault on the part of the employer justifying sanction. In other words, does the failure to respect the principle of prevention, in particular the principle of risk assessment constitute a fault?

Article 6(1) of the Council Directive 89/391/EEC lays down the employer’s duty to protect the safety and health of workers. Compliance with this duty must be pursued in accordance with the principle of prevention as set out in Article 6(2) of the Council Directive. This diagram is based on the idea that anticipation leads action. In other words, the identification of risk factors and the assessment of the probability of their occurrence enable to intervene as early as possible in the design of workplaces and equipment. Consequently, failure to respect of the principle of prevention prevents the adoption of appropriate measures to protect safety and health. In short, there can be no effective prevention policy without a prior risk assessment.

In this sense, while the legislation of a large majority of Member States provides for a written risk assessment as a duty or obligation⁷⁹, a first level of harmonisation could be to agree on the mandatory nature of the written document. Indeed, considering that the lack of a risks assessment is a fault implies, as a first step, recognising, that the possession of a risk assessment to safety and health at work such as provided for in Article 9 (1)(a) of the Council Directive is mandatory. It could then constitute the material evidence of the realisation assessment. Conversely, its absence would demonstrate the materiality of the fault which could be the subject of a sanction.

In order to be both an incentive and a deterrent, the system of sanctions must include a series of corrective measures aimed at raising the employer’s awareness in order to obtain compliance, as well as administrative fines of variable amounts depending on the level of cooperation of the employer. European Union has already adapted such a strategy in other areas, notably in the field of data protection with the General Data Protection Regulation⁸⁰, which involved changing the instrument from a directive to a regulation.

⁷⁷ David WALTERS: Labour inspection and health and safety in the EU. *ETUI, HesaMag*#14, 2016.

⁷⁸ *Adapting to change in work and society: a new Community strategy on health and safety at work 2002-2006*. COM(2002)118final. 11 of March 2002.

⁷⁹ According to ILO Global Database on Occupational Safety and Health Legislation, out of 15 Member States for which legislation is available, for 7 of them written risks assessment is a duty, for 5 of them it is an obligation. Finally, two of them do not provide written risks assessment.

⁸⁰ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and the free movement of such data, and repealing Directive 95/46/EC. OJ L 119., 4.05.2016., 1.

Finally, the last step could be to launch an individual or collective lawsuit. Several grounds are possible. Working in a safe and healthy workplace is a right linked to “the right to working conditions which respect his or her health, safety and dignity” provided for in Article 31 of the Charter of Fundamental Rights of the European Union. Indeed, working in a workplace where the employer does not carry out a risk assessment constitutes a working anxiety-provoking conditions for employees contrary to working conditions that respect health, safety and dignity. It is therefore possible to conclude that the lack of safety and health assessment in the workplace violates the Charter of Fundamental Rights of the European Union, in particular the Article 31(1).

In addition, it is also an breach of the duty of loyalty which is related to the execution of the contract. Deriving from the principle of good faith, the duty of loyalty refers to the behaviour expected of each stakeholder, resulting in a rule of fair conduct. Fairness in the execution of the contract involves positive actions such as adopting preventive measures to guarantee the safety and health of the worker. Clearly, the employer who does not carry out the risk assessment is in breach of his duty of loyalty.

3.1.3. The essential role of the labour inspector as a pivotal actor

The essential role of the labour inspector is often underlined in helping to achieve safe and healthy work⁸¹. The Labour Inspectorate Convention n° 81 adopted by the International Labour Organisation (ILO) in 1947 and ratified by most of EU Member States, provides broad principles on the functions and the members of labour inspection system. Mainly, the labour inspection system in the EU Member States follows two models: a generalist one where inspection covers a large scope of issues as wages, social security, illegal work, and a specialist model focuses only on safety and health in accordance with the Article 4 of Council Directive 89/391/EEC⁸². Despite these differences, according to David Walters “regulatory inspectorates for OSH in the EU Member States have a similar set of powers”⁸³. In line with Articles 12 - 13 of ILO Convention 81, labour inspectors are generally empowered to enter freely and without previous notice at any time of the day or night, any workplace liable to inspection and to carry out any examination, test or enquiry which they consider necessary in order to satisfy themselves that the legal provisions are being strictly observed.

When the labour inspector inspects a workplace, his or her common role is to enforce compliance with workplace standards to ensure the safety and health of workers. To this end, the Committee on Employment and Social Affairs, in its report on *effective labour inspection as a strategy to improve working conditions in Europe*, points to “the vital role” of the labour inspector in prevention and

⁸¹ WALTERS et al. (2018) op. cit. 27.

⁸² WALTERS op. cit.

⁸³ Ibid.

monitoring and also in the strengthening of expertise and information provision at company level⁸⁴. In this way, they can develop tactics ranging from encouragement through advice to coercive actions, which can be classified into four main categories: demanding improvements, stopping work activities, imposing fines, and taking legal action.

From this scope, it is clear in theory that the labour inspector has a strong role to play and could make an effective contribution to the enforcement of compliance with OSH legislation. In practice, the EU-OSHA study *Improving compliance with occupational safety and health regulations* notes that “there are differences between Member States in fines and non-pecuniary sanctions for non-compliance”⁸⁵. Conversely, the requirement for drawing up a risk assessment document for each company calls for common standards for OSH inspectors.

With regard to “the vital role” of the labour inspector underlined by the Committee on Employment and Social Affairs, there is another challenge that almost concerns the EU Member States, namely the lack of resources which has been highlighted by several research⁸⁶ due to the gap between the number of inspectors and the number of workers and companies. Aware of this problem, the European Parliament in a resolution of 14 January 2014 on *effective labour inspections as a strategy to improve working condition in Europe*, following the report of the Committee on Employment and Social Affairs “urges the Member States to increase the staffing levels of, and the resources available to, their labour inspectors and to meet the target of one inspector per 10 000 workers, as recommended by the ILO”⁸⁷. Obviously, the limited number of labour inspectors strongly reduces the influence of inspection, even though data and AI-based models AI have been developed to assist in the selection of workplaces for inspection⁸⁸. This limitation constitutes a major challenge in view of the emergence of new risks due to digital tools.

3.2. To strengthen the legal force of the principle of prevention, in the event of the occurrence of a professional risk

The freedom to conduct a business, recognized by the Charter of Fundamental Rights of the European Union⁸⁹ includes the freedom to choose working methods and forms of organisation. Nevertheless,

⁸⁴ Committee on Employment and Social Affairs: *Effective labour inspections as a strategy to improve working conditions in Europe* (A7-0458/2013). 2013.

⁸⁵ David WALTERS – Richard JOHNSTONE – Elizabeth BLUFF – Hans Jørgen LIMBORG – Ulrik GENSBY: *Literature review – Improving compliance with occupational safety and health regulations: an overarching review*. Luxembourg, Publications Office of the European Union, 2021. 148.

⁸⁶ WALTERS et al. (2018) op. cit. 29.; WALTERS: op. cit.; Occupational risk prevention in SMEs in Europe. *Eurogip*, Sep. 2009. 10.

⁸⁷ European Parliament: resolution of 14 of January 2014. op. cit.

⁸⁸ Øyvind DAHL: *The future role of big data and machine learning in health and safety inspection efficiency*. Luxembourg, Publications Office of the European Union, 2019.

⁸⁹ Article 16 of European Convention on Human Rights.

this freedom must be balanced with the right to fair and just working conditions which is affirmed at the Article 31 of the Charter and which implies respect for health, safety and dignity and with the assertion in Council Directive 89/391/EEC that “the improvement of workers’ safety, hygiene and health at work is an objective which should not be subordinated to purely economic considerations”.

The freedom to undertake has its corollary, which is the liability that is concretized by the duty to take preventive measures for safety and health. Consequently, if an accident or an illness results from the occurrence of an occupational risk, the employer’s liability may be engaged. On this occasion, the issue of safe working conditions again raises the question of compliance with the principles of prevention.

Non-compliance with the general principle of prevention can arise from any of the nine principles set out in Council Directive 89/391/EEC. Quite obviously, the occurrence of an occupational risk may reveal a lack or an inadequacy of a risk assessment. In this case, the preventive measures that should have been taken by the employer and the resulting risk situation for the worker can be taken into account in order to increase the employer’s liability.

Other principles of prevention can also lead to an increase in the employer’s liability. In this sense, a French Court has rendered an interesting decision. The case began with a dismissal. An employee on sick leave is declared unfit for her job by doctor but fit for an identical job in a different working environment. Dismissed for incapacity, she challenges the employers’ decision in court. As the Labour Court validates the dismissal, the Court of appeal invalidates it⁹⁰. The reasoning of the Court of appeal is remarkable.

The Court notes that “the employer does not justify having implemented the preventive measures provided for by the Labour Code, in particular those allowing to adapt the work to individual particularly in terms of working methods and production”. The Court adds that “the employer was aware of the existence of facts likely to damage the employee’s health, but did not take any immediate measures to put an end to them”.

For the Court, the source of the deterioration in the employee’s health results from the deterioration in the working conditions linked to the management methods adopted by the employer which thus imposed on the employee an overload of work with overtime or work outside working hours”. In other words, the Court links the compliance with the principles of prevention and inappropriate working methods to guarantee occupational health.

In conclusion, to participate to guarantee a decent work in digital age, the contribution proposes a review of principles of prevention from the angle of strengthening employer’s occupational health obligations.

Based on the mapping of technologies at workplace, it is shown that technological innovations simultaneously bring positive and negative effects. While they enable to achieve the objective of

⁹⁰ Appeal Court of Douai, 30 of November 2018, n° 2199/18.

performance and rationality of work, they also renew the challenges of protection of occupational health.

The resulting tension is all the greater in that the progression and renewal of technologies seems never-ending, and that the technological choices in organization and working conditions remain in the hands of the employer. In this context, the principles of prevention need to be re-examined. With this in mind, several avenues can be explored. On the first hand, the assessment of technological risks should be based on a human-centred approach, and on the other hand, the strengthening of employer liability – which is the other side of freedom of undertaken – should be envisaged in order to give full legal effect to the principles of prevention.

Such a re-reading will contribute to promote the social justice such has been reaffirmed by the ILO, « in context of globalisation, characterised by the diffusion of new technologies, [...] that reshaping the world of work in profound way »⁹¹.

⁹¹ *Declaration on Social Justice for a Fair Globalisation*. International Labour Conference, Ninety-seventh Session, Geneva, 2022. 1.