European Agency for Safety and Health at Work

Digital technologies for worker management: implications for safety and health. A comparative study of two automotive companies in Belgium and Italy

Summary

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This study[1] investigates the implications of digital technologies and artificial intelligence-based worker management (AIWM) systems for occupational safety and health (OSH) through a comparative analysis of two automotive companies in Belgium and Italy. The research aims to explore how these technologies influence work organisation, workers' wellbeing and OSH in different organisational settings. By examining the contrasting experiences of a large original equipment manufacturer in Belgium and a smaller Tier 1 supplier in Italy, the study provides insights into how managerial approaches shape the impact of AIWM on working conditions and OSH.

The integration of AIWM systems, which include algorithmic technologies for task allocation, performance monitoring and real-time decision support, has become increasingly prevalent in industrial sectors characterised by complex production processes. While these systems are often adopted to enhance productivity and streamline operations, they also introduce significant challenges regarding worker autonomy, job quality, OSH and psychosocial risks. The findings of the study highlight that the implications of AIWM adoption are highly dependent on the level of worker involvement and the managerial strategies employed. The Italian firm adopts a participatory approach by involving employees in decision-making processes and reports superior OSH outcomes and overall wellbeing compared to the Belgian firm, which follows a hierarchical, top-down management model. However, it is important to notice that the differences in the size of the companies and their positions in the global value chain may significantly influence the choice of management model adopted.

In the Italian case, the active engagement of workers in technology adoption and development has resulted in a collaborative environment that supports transparency and shared responsibility. This inclusive approach mitigates potential negative consequences associated with AIWM, such as increased surveillance and diminished autonomy, and helps in generating a sense of trust and empowerment among employees. Consequently, workers in the Italian firm experience lower levels of stress, higher job satisfaction and reduced exposure to OSH risks, also in the face of increased work intensification. In contrast, the Belgian company's reliance on a rigid, hierarchical approach has led to heightened work intensification, increased psychosocial stress and reduced autonomy. The absence of worker participation in the technology implementation process exacerbated these risks, contributing to a higher likelihood of adverse health and wellbeing effects, including burnout and anxiety.

It is also important to note that the Italian case reports almost zero turnover and has a stable workforce, while the Belgian case exhibits a significantly high level of turnover, with a large proportion of workers employed under temporary contracts. The stability in the Italian case favours better knowledge retention, which benefits productivity and operational efficiency, and improves job satisfaction and strengthens the company culture and workers' commitment. Conversely, the high turnover in the Belgian case and the large proportion of temporary contracts likely lead to greater instability and lower organisational loyalty. This could result in higher recruitment and training expenses, decreased knowledge retention and challenges in maintaining a consistent organisational culture, potentially hindering long-term development and performance as well as the preservation of a healthy workplace.

The study also takes into account the dual role that AIWM systems may play in OSH management. On one hand, these technologies can enhance safety by enabling real-time hazard monitoring, providing ergonomic support and facilitating the delivery of safety training programmes. On the other hand, the use of AIWM systems without adequate human oversight can lead to adverse outcomes, such as the dehumanisation of workers, the erosion of managerial support and the intensification of work rhythms. The Belgian firm's experience illustrates how excessive reliance on automated systems for task coordination and monitoring can undermine worker autonomy and exacerbate the risk of physical and mental strain. In contrast, the Italian company's approach, which integrates AIWM with strong worker participation and support mechanisms, demonstrates how these systems can be deployed to promote a healthier and safer work environment.

The study's findings suggest that the successful integration of AIWM systems requires a balanced approach that prioritises worker involvement and transparency. In order to guarantee a sustainable use

[1] The full report is available at: https://osha.europa.eu/en/publications/digital-technologies-worker-management-implications-safety-and-health-comparative-study-two-automotive-companies-belgium-and-italy

of new technologies and safeguard workers' OSH and wellbeing, companies should develop participatory frameworks that actively engage workers in the adoption, development and implementation of digital tools, ensuring that technological advancements are aligned with the practical needs and insights of the workforce. Indeed, a participatory culture not only fosters job satisfaction and autonomy but also mitigates the risks of work intensification and stress associated with AIWM. Furthermore, structured training programmes, job role rotations, and proactive health and safety measures are essential components of a comprehensive strategy to safeguard worker wellbeing while optimising production processes. Effective data governance is also critical, as it helps maintain trust and ensures a fair and democratic use of digital technologies. Establishing robust data management frameworks that protect workers' privacy and involve workers and their representatives in decision-making processes is crucial for preventing potential misuse and improving worker acceptance and use of AIWM systems. Indeed, transparency in the use and development of data and technologies is fundamental to provide workers with greater agency over the work process and empowering them to exercise control, make decisions and take ownership of their tasks.

Contrasting the findings from the two case studies, the importance of adopting a human-centred approach to digital transformation emerges. While digital tools and AIWM systems can significantly enhance productivity and safety, their success depends on the organisational context and the extent to which workers are included in the process. This study contributes to the debate on the impact of digitalisation in traditional manufacturing settings, emphasising the need for strategies that balance efficiency with worker health and safety to create sustainable workplaces and enhance democratic participation of workers and their representatives in the digital revolution.

The implications of AIWM on OSH

The automotive industry is increasingly incorporating AIWM systems to ensure safety within complex manufacturing environments. These systems, by leveraging large datasets collected from workers and machinery, provide insights into productivity patterns, identify potential risks and streamline workflow management.

Despite the potential benefits for workers and OSH, the integration of AI systems into the workplace may also have adverse effects on worker safety and health and wellbeing.

To prevent these risks, the Italian company has conducted an extensive risk assessment process in collaboration with OSH specialists, successfully reducing the incidence of these risks to well below the minimum legal thresholds for intervention. This achievement has been largely attributed to the implementation of technological and organisational solutions. For instance, the installation of closed workstations equipped with air conditioning and cleaning systems has significantly decreased workers' exposure to noise and biochemical risks. In terms of ergonomics, several technical interventions have been introduced to minimise the frequency and intensity of physical movements, along with a notable increase in automation, which, according to workers, could be expanded further.

Additionally, in response to increased productivity associated with the use of AIWM systems, in recent years the company has introduced an additional daily break to provide operators with more time to rest and socialise. Given that workers typically spend most of their time in isolated, enclosed workcells, management has recognised the importance of enhancing social interactions and collective breaks to mitigate the risk of isolation and improve psychological wellbeing, particularly in the context of significant organisational and technological changes.

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AIWM and ergonomic risks

Both companies utilise digital technologies and AIWM to manage ergonomic risks and enhance productivity, by integrating technological solutions into their operations. However, significant differences emerged in both their approaches and outcomes.

In the Italian company, the implementation of AIWM has led to significant improvements in managing ergonomic risks across all departments. The reduction in the number of physical movements necessary for communication and task execution has decreased physical strain on employees. For instance, operators can now initiate assistance requests directly from their workstations, eliminating the need to leave their posts and walk across the plant, thus saving time and reducing physical exertion. Maintenance workers also benefit from this system, as they can arrive at workstations fully equipped with the necessary tools based on information provided in online requests, and therefore minimising unnecessary physical effort. In logistics, the improvements are even more visible. The 'milk runner', responsible for delivering materials, no longer needs to return to the warehouse in cases of incomplete or incorrect lists, thanks to streamlined digital communications. Additionally, the process of picking and validating final products has been simplified using barcode scanning systems, which automatically record and transmit data to the warehouse. This technological integration reduces the need for manual checks and the physical strain associated with them. Furthermore, packaging operations are less physically demanding due to the virtual warehouse system, which accurately tracks the composition and location of batches.

In the Belgian company, considering the high workload, speed and repetitive nature of tasks combined with the use of assembly lines and AIWM, rotations and workload adjustments are implemented to manage high-intensity work. The frequency of these rotations is determined by a collaborative process involving team leaders, team members, senior management and OSH advisors, as part of the ALB process. Unlike the Italian company, the Belgian company uses digital tools within the ALB framework to fine-tune workload settings, allowing for operations at, above or below 100% capacity. A workstation's workload setting of more than 100% will obviously have more impact on workers (e.g. increase of ergonomic risks) and will give rise to more frequent rotation.

Furthermore, the system's reliance on scientific management principles, such as methods-time measurement, introduces the concept of a 'virtual average operator'. This statistical construct does not accurately reflect the physical capabilities of all operators, resulting in unequal workload distribution and potential ergonomic risks for certain workers, which are not systematically monitored by the company. Technically, additional ergonomic considerations can also be embedded within personal identification information datasets, potentially indicating mandatory requirements for PPE. However, this application is seldom utilised. Instead, a critical role in assessing ergonomic conditions is played by team leaders and prevention advisors, particularly in the final stages of the ALB process. These stakeholders are responsible for conducting thorough evaluations of the ergonomic aspects of each workstation, ensuring that the distribution of tasks does not pose risks to worker health and complies with safety regulations. Specific ergonomic risks are also associated with particular workstations; for example, 'pick-to-voice'

logistics operators may experience discomfort from prolonged headset use and the continuous operation of handheld or finger-attached scanners.

AIWM and psychosocial risks

AIWM systems and algorithmic technologies are used by both companies to optimise productivity and operational efficiency. However, the impact on working conditions varies significantly across different dimensions, including worker autonomy, the intensification of work and opportunities for personal development, and so do work-related psychosocial risks in the two cases examined.

Worker autonomy has been impacted to varying degrees by the adoption of digital technologies and AIWM systems in the Belgian and Italian companies. The Italian company's approach allows for a greater sense of autonomy and professionalism among workers, facilitated by access to comprehensive process information and a more flexible task structure. Indeed, despite the stringent quality controls that manage the production process, there is evidence of some autonomy and discretionary management of daily tasks. For example, operators report a sense of greater autonomy when they can view their work assignments on monitors without needing to consult with supervisors. This perceived autonomy includes independently checking the assigned workcell and related tasks, even though the decisions on work assignments are made by the production manager. In logistics, real-time access to updated information about each workstation enables milk runners to better organise their delivery schedules based on current priorities. Similarly, maintenance workers benefit from receiving detailed assistance requests and having access to historical data on previous operations and potential breakdown risks, which increases their confidence in the decision-making process. Both middle managers and operators report an amplified sense of 'empowered professionalism', attributed to the system's validation of their skills and the standardisation of processes, which minimises unexpected events and enhances their overall knowledge of the production process.

The case of the Belgium company differs in terms of degree of workers' autonomy, as the highly streamlined production processes afford operators at the assembly line minimal autonomy. Indeed, the ALB process involves breaking down tasks into individual movements and actions, each timed to the millisecond. The sequence of these movements is strictly dictated and closely monitored by the AIWM system, leaving little room for deviation or improvisation. Consequently, the work becomes highly repetitive, particularly for production operators. Slightly different is the case for operators in the logistics department. For instance, while tractor drivers in logistics receive task allocations from the AIWM system, these tasks are not strictly sequenced, allowing for some autonomy in determining task order. Nonetheless, all tasks must be completed within the prescribed timeframe, especially those marked as urgent, which do not permit any deviation. With respect to other workers, team leaders in the Belgian company enjoy more autonomy due to their diverse set of responsibilities, although the extent of this autonomy is contingent on the specific nature of their workstation.

In general, the lack of worker autonomy usually related to the use of AIWM systems has significant implications for OSH. Reduced autonomy is frequently associated with increased stress levels, diminished job satisfaction and a higher risk of burnout, as workers have less control over their work pace, scheduling and decision-making processes (Marmot, 2015; EU-OSHA, 2022b). Increased stress and lack of control over one's work can also heighten the risk of psychosocial risks, which may manifest as anxiety, depression or other mental health issues. Furthermore, when workers have limited ability to make decisions, they feel incapable of influencing their work environment, leading to disengagement and decreased motivation that can, in turn, reduce situational awareness and the capacity to react appropriately to hazardous situations, therefore increasing the likelihood of workplace accidents and injuries.

Moreover, a lack of autonomy often coincides with work intensification, where AIWM systems impose strict productivity targets or continuously monitor performance metrics. In both the Italian and Belgian companies, the implementation of digital tools and AIWM systems has resulted in significant productivity gains as well as work intensification, but with different implications.

In the Italian company, digitalisation and AIWM have enabled workers to perform their tasks more efficiently, leading to substantial time savings. This efficiency gain has allowed workers to engage in a

broader range of activities, thereby enriching their individual task portfolios and allowing them to dedicate more time to other tasks. Indeed, the instantaneous availability of digital data and improved communication channels have facilitated a shift in focus for supervisory and technical roles towards activities that support the company's innovative capabilities. For instance, production managers can allocate more time to developing new technological solutions, maintenance managers can enhance operator training, and logistics managers can adjust schedules in response to changing demands. Although there is a potential risk of deskilling among operators due to the dominant role of AIWM, this risk is mitigated by their active involvement and sophisticated use of these technologies, fostering, in reverse, an upskilling effect.

Conversely, in the Belgian company, digital technologies and AIWM have led to increased workloads and work intensification, characterised by the instantaneous and precise allocation of tasks under strict time constraints, guided by the AIWM system. Operators experience upskilling primarily in general skills, such as operating efficiently under high pressure and maintaining quality standards. However, the nature of their tasks remains strictly organised and highly repetitive, with no time dedicated to different activities. For team leaders and higher-level managers, the use of digital tools and applications encourages the development of transferable skills that are applicable both within and beyond the company. This role differentiation highlights a divergence in skill development outcomes between different job levels.

In both companies, worker training, skills and performance are closely monitored by human supervisors with the support of AIWM systems. In the Belgian company, for example, the AIWM system flags situations where an operator has not worked at a specific post for an extended period, prompting team leaders to reassign them to maintain proficiency. This continuous monitoring ensures that workers remain skilled and capable of meeting the demands of their roles.

Another aspect relevant for workers' wellbeing is cognitive stress. Continuous tracking and system-driven task instructions can lead to cognitive overload and 'techno-stress', resulting in anxiety, fatigue and impaired decision-making (Graveling et al., 2020; Samek Lodovici et al., 2021). This stress negatively affects mental wellbeing and increases the risk of errors and accidents. To mitigate these effects, AIWM systems should be designed to support worker autonomy and provide constructive feedback, helping maintain a healthy balance between productivity and workers' wellbeing.

Depending on how it is designed, implemented and managed, AIWM may help reduce cognitive workload and improve task management by offering benefits such as real-time oversight and error reduction, but it may also introduce stress factors and potential issues related to over-reliance on technology. In the Italian company, the way AIWM technologies have been adopted has significantly enhanced mental and cognitive wellbeing for both managers and operators by improving task management and the autonomous handling of quality constraints and emergencies. Managers benefit from reduced mental stress through the system's ability to facilitate preventive interventions, advanced risk assessments and immediate responses to unexpected issues. Operators experience a lighter workload due to AIWM tools such as statistical alerts for production, checklists set up for maintenance and batch validation for logistics. These tools reduce the cognitive burden by automating task reminders and minimising interruptions that previously contributed to stress. However, there are concerns that reliance on AIWM may lead to a degradation of essential basic skills such as memory and prompt reflection, which are critical for adapting to dynamic job demands and ensuring high performance and productivity.

In contrast, the Belgian company presents a different scenario where AIWM and digital technologies impact workers' stress and workload differently. Team leaders, who are mostly affected by these technologies, experience varying levels of stress based on the nature of their tasks and team performance. The AIWM system, including the Andon system, provides real-time status updates, which improve time efficiency and offer greater oversight and autonomy, particularly in less critical workstations. However, some team leaders face high stress due to task overloads and time-sensitive issues, particularly when managing escalated Andon calls or technical malfunctions. Logistics operators using pick-to-voice systems may face frustration and stress if the system fails to recognise their inputs, resulting in task delays. Despite this, operators report that quality monitoring mechanisms are beneficial for job performance. Additionally, while pick-to-voice and 'pick-to-light' systems are perceived as helpful in reducing errors, excessive reliance on these systems may lead to decreased attention and potential

mistakes. The Belgian company addresses this issue through workstation and post rotations to mitigate stress and maintain engagement.

Finally, the most significant divergence between the approaches adopted by the two companies regarding technology implementation is evident in its impact on social relations and work–life balance, which also depends on the different size and internal structure of the two firms. The integration of AIWM and digital tools in the Italian case has led to improved social relations and work–life balance, characterised by better communication, and fewer conflicts, therefore reducing also stress levels, while in the Belgian case, workers report little to no time for social interaction and some difficulties, particularly for a pick-to-voice logistics operator and team leaders, in managing work-related stress outside working hours.

Moreover, in the Italian company, in particular, the benefits associated with the deployment of digital tools and AIWM span to all roles and the hierarchy. Operators perceived a reduction in social distance, and a better quality of verbal interactions as technical urgencies are managed by the system. These technologies are seen as facilitating seamless communication across departments and hierarchical levels, fostering a sense of social involvement and better coordination among workers. Improvements in work–life balance are also evident particularly for managerial roles. The availability of detailed and updated data has streamlined the management of emergencies and unforeseen problems, such as unplanned worker absences and machine breakdowns, thereby reducing the frequency of out-of-hours disturbances. For operators, the system's alerts and validation processes ensure that all tasks are completed correctly when the shift is finished, allowing workers to focus on their personal lives without concerns about unfinished work and reducing work-related stress after working hours.

Overall, both companies use digitalisation and AIWM to enhance productivity and efficiency, but different strategies emerge. The Italian company focuses on broadening and enriching job roles, particularly in supervisory and technical areas. Conversely, the Belgian company looks at maintaining high efficiency and quality in a more tightly controlled and repetitive work environment. These variations are indicative of the diverse ways in which AIWM can shape workplace dynamics, potentially enhancing worker engagement and health and safety in some contexts while exacerbating control and work pressure in others. Thus, the implications of AIWM for OSH are highly context-dependent, necessitating a nuanced approach to implementation that considers the specific needs and conditions of the workforce and the organisational setting.

Indeed, the implementation of AIWM to foster greater worker autonomy may offer multiple benefits. It enhances job satisfaction, reduces stress levels and supports mental health. Furthermore, workers who retain control over their tasks and decision-making processes experience increased motivation and a stronger sense of ownership, resulting in a healthier work environment and lower psychosocial risks. Moreover, autonomy allows workers to manage their work pace and workload more effectively, which reduces the risk of work intensification and may balance the negative effects of excessive control of AIWM adoption.

On the contrary, the adoption of AIWM to further centralise control and optimise processes at the risk of a higher intensification of work may induce workers to prioritise speed over their health and safety, compromising their mental wellbeing, as well as ergonomic practices — hence deteriorating workers' mental health and increasing the risk of MSDs and injuries. In fact, diminished autonomy not only impacts psychological wellbeing but also has direct physical health repercussions, underscoring the need for a more balanced approach in the implementation of AIWM systems that fosters greater worker involvement and control over their tasks (Roquelaure, 2019; EU-OSHA, 2021b).

Addressing these implications requires adopting a human-centred design in AIWM deployment, ensuring that systems are transparent, support worker empowerment and allow for worker participation in decision-making processes, thereby safeguarding both mental and physical health (EU-OSHA, 2022a, 2022b).

Conclusions and key takeaways

In the last decade, the empirical literature has widely studied the adoption of algorithmic management in the context of digital platform work (Pesole et al., 2018; Brancati et al., 2020; Wood, 2020), highlighting the role of algorithms in reshaping work organisation and power dynamics within the platform economy and the potential implications for OSH (EU-OSHA, 2021a). Similarly, the digitalisation process, the increasing adoption of algorithmic technologies in workplaces (Rani et al., 2024; Krzywdzinski, Schneiß & Sperling, 2024) and the advent of the Industry 4.0 revolution (Cetrulo & Nuvolari, 2019) have reignited interest in the ongoing transformations in more traditional workplaces, such as the manufacturing industry, although their OSH implications are less studied.

This study on the adoption of algorithmic and AIWM technologies in two automotive companies located in Belgium and Italy aims at contributing to a better understanding of the overall impact of digitalisation on working conditions by focusing on the implications in terms of OSH. Developing a comparative perspective, the two case studies highlight both the OSH opportunities and challenges posed by the integration of AIWM systems.

The adoption of AIWM technologies by both companies occurred within the broader context of integrating advanced digital and automated systems as part of a lean production model aimed at enhancing productivity and minimising waste. However, significant divergence in managerial approaches and outcomes emerged, attributable to variations in their organisational structures, workforce engagement strategies and the distinct nature of their technological applications.

The Italian Tier 1 company supports worker versatility and in-house technological design and development, with substantial worker involvement in the implementation of the digital systems. This participatory approach has encouraged a sense of ownership and engagement among workers, contributing to low turnover rates and a collaborative work environment. The gradual introduction of digital tools, supported by on-the-job learning, has allowed workers to adapt and provide feedback, thus improving the processes iteratively.

On the other hand, the Belgian OEM focuses on efficiency through precise task synchronisation and workload management. By implementing detailed digital instructions, the company has streamlined its production process to achieve high output rates and stay competitive. However, this has rather favoured high turnover and consequently led to a significant proportion of temporary agency workers, highlighting the additional potential downsides of a less inclusive approach to technological adoption.

The case studies also highlight how digital technologies and AI can enhance OSH by preventing injuries, taking off routine and repetitive tasks from workers, and facilitating complex operations through reminders, quality and safety automatic controls.

Again, different strategies are identified in the two companies. In the Italian case, the collaborations with research institutions and national organisations on health and safety underscore a proactive attitude towards a continuous improvement of working conditions and OSH, taking advantage of the more advanced technological solutions, such as sensors and wearables, developed within the company. The participatory culture and lean work organisation model further reinforce a safe working environment by integrating workers as active problem-solvers.

In the Belgian company, the use of digital systems for ergonomic assessments and workload management indicates a structured and corporation-based approach to OSH. However, the emphasis on productivity enhancement through workload saturation and continuous monitoring suggests an underlying tension between the pursuit of competitiveness and the substantive improvement of working

conditions. Furthermore, the high turnover rate of employees as well as of temporary agency workers indicates potential deficiencies in effectively addressing worker wellbeing in a comprehensive manner.

Finally, from the case studies it clearly emerges that the level of worker engagement in the adoption of digital technologies significantly influences their impact on OSH and overall job satisfaction. The participative approach followed by the Italian company by involving workers in decision-making processes and continuous improvement initiatives contrasts sharply with the Belgian company's top-down approach with consequences for workers' overall wellbeing and OSH. In addition, the findings of the study suggest the importance of developing a participatory culture in order to mitigate the potentially adverse effects of algorithmic management, such as increased surveillance and reduced autonomy.

In conclusion, involving workers in the development and implementation of digital technologies can enhance workers´ acceptance and adaptability, job satisfaction, and overall workplace safety and health. This approach ensures that technological advancements are aligned with the practical needs of the workforce and promote a sense of better understanding of the entire production process, increasing workers' level of engagement. While digital technologies can optimise production processes, it is crucial to balance efficiency with worker safety, health and wellbeing. Engaging workers in the development and implementation of digital technologies allows to "design out" the risks to workers from the digital processes, hence supporting "prevention through design" and a human-centred approach. Adequate structured training programmes, job role rotations, and proactive health and safety measures are essential components of a comprehensive approach to digital workplace transformation. Effective and transparent management of worker data are critical to maintaining trust and ensure a fair and democratic use of digital tools. Companies must establish robust data governance frameworks to protect worker privacy and use data responsibly and they must share relevant information with workers' representatives to support shared decision-making processes. Implementing continuous improvement mechanisms that incorporate worker feedback can lead to more sustainable outcomes in terms of process efficiency and workplace safety and health.

On a final note, the successful integration of algorithmic management technologies and AIWM systems in the workplace requires a balanced approach that prioritises workers' involvement and their safety and health. By encouraging a participatory culture and ensuring robust data governance, companies can harness the benefits of digitalisation while preventing its potential risks.

Key takeaways

1. **Participatory and human-centred implementation of digital tools:** Involving workers in the development and implementation of digital technologies can improve and reinforce their acceptance and adaptability, job satisfaction and overall OSH. This approach ensures that technological advancements are aligned with the practical needs and insights of the workforce.

2. **Balancing efficiency and wellbeing:** While digital technologies can optimise production processes, it is crucial to balance efficiency with worker safety, health and wellbeing. Worker participation, prevention through design, adequate structured training programmes, job rotations, transparency of information, and proactive OSH management are essential components of a comprehensive approach to digital workplace transformation.

3. **Data governance and privacy:** Effective and transparent management of worker data is critical to maintaining trust and ensuring a fair, participatory and democratic access to and use of digital tools. Employers must establish robust data governance frameworks to protect workers' privacy and use data responsibly. Furthermore, they must share relevant information with workers' representatives to support shared decision-making processes.

4. **Continuous improvement and feedback loops:** Implementing continuous improvement mechanisms that incorporate worker feedback can lead to better outcomes in terms of process efficiency and workplace safety and health. Iterative learning and adaptation are key to successful digital integration.

5. **Holistic assessment of OSH risks related to digital technologies:** The increasing interaction between workers and digital technologies, due to the widespread diffusion of advanced robotics, wearable tools and digital assistance systems, requires the performance of a sound, comprehensive and dynamic risk assessment of all risks - physical as well as psychosocial risks, including those of organisational, cognitive and social nature - faced by workers while performing their job.

The European Agency for Safety and Health at Work (EU-OSHA) contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1994 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

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