

# Safety and health challenge of Industry 4.0

INDUSTRY 4.0 enables faster, more flexible and more efficient processes to produce higher quality goods at reduced cost.

A mixture of cloud computing, artificial intelligence (AI), Industrial Internet of Things (IIOT), machine learning, human machine interfaces and advanced analytics, Industry 4.0 is transforming how employees, equipment and processes interact in industrial workplaces.

Business processes are simpler and more accessible than before. Employees' tasks are more flexible and safer with the use of automated machines and robots.

As the technologies are likely to be used to optimise operations and improve process efficiency, we shouldn't overlook the potential for new safety and health risks in the workplace.

Risk attributable to new tools should be assessed to promote and protect employees' safety and health. New sources of physical risks and hazards, long-term health risks from exposure to new hazardous substances and psychosocial risks from work-related stress should be addressed.

Technology is undeniably an important tool in Industry 4.0, but focusing on the technological aspect alone will not lead to seamless digital transformation of a business. It is not just about adopting advanced technologies, hence organisations must ensure that their employees understand the changing landscape and how they can fit in. They must be equipped with the essential digital or other skills that will enable them to



**Working with robots:** An Amazon delivery driver moves stowed containers into his truck after Amazon robots deliver separated packages by zip code at an Amazon warehouse facility in Goodyear, Arizona. — AP

adapt with the ever-changing work environment.

Employers must look at how training and capacity-building can improve their employees' skills and prepare them before adopting and implementing the new technologies.

AI automates various tasks that can lead to loss of jobs or spawn new ones that involve creativity and complex problem-solving tasks that machine automation isn't well suited to handle. This requires adoption of new technical skills

through retraining.

Talent development, lifelong learning and career reinvention are the way to go to embrace Industry 4.0. Developing the competencies of their employees should be one of the priorities for organisations.

Employees must also be trained to understand the new emerging risks. For example, wrong gestures or misinterpreted commands sent to the wrong machine would lead to safety incidents.

Over-reliance on cobots or exo-

skeleton for manual handling of tasks may affect the employee's physical health, such as loss of muscle or bone density.

Other potential OSH issues include psychosocial risk factors if people are driven to work at a cobot's pace (rather than the cobot working at a person's pace) and collisions between a cobot and a person.

Security and privacy issues will also be another risk that we need to address. Stolen data, disturbance of interaction, paralysed system structure and external attack on the cloud-based storage will be among these threats.

Cybersecurity is a real concern as most organisations are not really prepared for cyber attacks.

Employees might also face privacy issue as everything will be recorded and analysed. The employee becomes transparent to a certain extent as protecting data can become more difficult.

However, the advantages of Industry 4.0 outweigh the challenges faced by organisations. The latest technologies won't exactly replace human workers, particularly safety professionals. It will allow employees to perform their tasks efficiently, increasing productivity while reducing risks and injuries.

Big data would also make safety professionals become better at creating a safe and healthy work culture to reduce unwanted incidents and prevent accidents.

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