

Editorial

The future of OSH: a wealth of chances and risks

Work 4.0—that is the new “brand name” under which Germany is discussing the ongoing changes in the world of work. The term was derived from the older “industry 4.0”, a term that is meant to describe the fourth industrial revolution, which is the current trend of automation and data exchange in manufacturing technologies. In Germany the term was first used in connection with a research project conducted within the so-called high-tech strategy of the Federal government.

Yet, there is more to the transformation of work than cyber-physical systems, the Internet of things and cloud computing. This “more” is what we call Work 4.0 and it includes all kinds of developments at the workplace from new technologies to skilled worker shortage or precarious work, and it brings along a tremendous amount of possibilities as well as drawbacks for the competitiveness of a nation’s economy.

Especially where the physical and mental integrity of men is at stake, potential drawbacks and risks must be paid special attention to. This is particularly true for the working environment where the safety, health and well-being of employees are vital to the success of a company, both in terms of competitiveness and social image.

In Germany, there has been a statutory insurance against occupational accidents and diseases ever since Otto von Bismarck, Prussian Chancellor, created the first welfare state in the modern world in the 1880s. Along with insurance coverage came another mission, which German accident institutions have to fulfil by law: Prevent accidents, diseases and health risks at work by all suitable means. As a matter of fact, prevention – at least in Germany – is given priority over rehabilitation and compensation, because it helps save money and spares workers the trauma and often sad consequences of ill health.

Prevention has never been an easy job to do. Why is this? Because you need to anticipate problems and risks in order to avoid them. Nowadays, this look into the near or further future becomes more and more difficult. The reason: We live and work in a world, that is changing continuously and at high speed, driven by digital innovation,

globalisation and demographic transition. Forecasts seem to be possible at short sight only.

Nevertheless, in occupational safety and health we cannot afford to stand by and wait for accidents to happen and new diseases to appear. We need to take action before the consequences of new and emerging risks become evident and affect people’s well-being, health and life. And this is where risk observation comes into play.

The OSH risk observatory of the DGUV, German Social Accident Insurance, is intended to monitor ongoing changes in the world of work, identify and estimate their repercussions in terms of concrete risks for the working population and suggest suitable preventive action which can vary from practical guidelines to complex research.

Since 2012 the DGUV’s Institute for Occupational Safety and Health, IFA, has been developing, building and maintaining the risk observatory and is now presenting results for the first exhaustive survey on upcoming OSH issues.

And the outcome confirms what we all seem to know already from the media and social networks: Digitalisation, along with an increasing workload, growing responsibility and an ageing workforce, will be the major challenges and big issues in occupational safety and health in the years to come.

And the future has already begun: Digitalisation invades all spheres of our life. Interconnectedness, availability and control via computer and information technology are omnipresent. Digitalisation, however, has many different faces and various contradictory repercussions in terms of safety, health and well-being at work. Digital tools are much more than just a new technology. They have a fundamental impact on the social and economic conditions of work and thus go far beyond creating the need for just some new safety requirements. Digital transition is not only a phenomenon in production. It affects all sectors of economic activity, from development and planning to management. Digitalisation brings along greater mobility and flexibility, with digital tools work becomes possible anywhere and at any time. Yet, this might lead to mental overload, increasing work density or an impaired work-life-balance. At the same time digital tools offer discrete possibilities to moni-

tor the behaviour and productive output of employees, thus creating an atmosphere of uncertainty and pressure.

New technologies, such as collaborating robots, may be the source of new accidents. Or they might be at the origin of so far unknown exposure to hazardous substances—just think of nanomaterials. Hacker attacks and data manipulation become more dangerous in production systems and at workplaces with a high degree of interconnectedness.

Digitalisation makes manual work disappear and fosters either physical inactivity or monotonous physical or mental exercise or both. Digital tools and working procedures—if we want them to be dealt with safely and at ease - call for new forms of training and new contents of qualification. Digitalisation also makes lifelong learning a prerequisite for employability. This is especially true for the growing number of older workers who do not have an instinctive, natural access to digital tools. Last but not least digital technologies create completely new forms of work and employment, such as crowd or click working. Spreading the message of prevention among these new „workers on demand“ and protecting their safety and health are particular challenges we face.

So, at first glance, risks and drawbacks for the working population seem to prevail. However, we must not ignore that the digital transition also brings along many chances to make work safer, healthier, more flexible and also socially

more inclusive. Possibilities reach from intelligent safety technology and virtual engineering for early risk analysis and safety by design, via medical innovations for diagnosis and treatment like health-monitoring wearables or exoskeletons through to digital qualification aids such as e-learning tools and smart glasses. There are a lot of opportunities to seize for all of us!

Given the global character, the speed and the complexity of the described changes, the international OSH community would be well-advised to join forces—wherever possible—to keep pace with the development, make use of its assets for the benefit of safety and health at work and share ideas for the prevention of any new or emerging risks.

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