On 27-28 October 2022, the State Labour Inspection's Training Centre in Wrocław hosted an international conference "Labour inspection and the challenges of the future", organised by the State Labour Inspection. The event was attended by representatives of labour inspectorates of EU Member States, as well as representatives of the International Association of Labour Inspection (IALI), International Social Security Association (ISSA), International Labour Organisation, Senior Labour Inspectors Committee (SLIC) and European Agency for Safety and Health at Work (EU-OSHA). In this special series of articles we present the most interesting excerpts of the participants' contributions.

Robotization and algorithmization in work processes

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Experiences of labour inspectorates in Europe and beyond inspire reflection on the challenges of the contemporary and future labour market. It should be borne in mind that modern technologies bring about not only new products but also a shift in the way companies operate on the organisational and financial level.

How about a revolution of labour markets?

According to a report by McKinsey & Company and Forbes magazine, "Shoulder to shoulder with robots. Tapping the potential of automation in Poland" – growing automation of work processes may trigger a profound transformation of labour markets.

The authors argue that as much as 49% of total working hours in Poland (equivalent of 7.3 million full-time jobs) is spent on activities which could be automated by 2030 using currently available technology. In realistic terms these numbers will be lower due to technological barriers (e.g. Internet access, electricity infrastructure, lack of specialists in new technologies), as well as economic, legislative and social obstacles.

Automation potential is the highest in the case of jobs relying on predictable activities – both physical (e.g. packaging, loading, preparing meals) and mental (data collection and analysis, filling out forms, generating invoices). These jobs are performed more often by employees with a lower level of education, and statistically more often by men than women.

Expected trends

The employee profile will change. It seems that an important factor complementing the growth of innovativeness and civilizational changes is enhancing the conditions for increasing the creativity potential and developing the so-called soft skills, such as interpersonal communication, empathy, ability to share knowledge and build a team leader position, personality management, motivation, negotiation skills or managerial skills.

However, automation of industrial production is only one of the elements of replacing humans in the performance of tasks that they have carried out so far. Nowadays an even bigger challenge for the labour market seems to be automation of intellectual work and trade. Many of the well-known supermarkets now have automatic self-checkouts. Micro-chips and online shopping will soon eliminate checkouts altogether.

Technology seems to oust people little by little from certain sectors. With jobs requiring an ever increasing specialisation, if a specialist loses their job, it will be much harder for them to retrain. Thus we need to ask ourselves what skills we need in order not to end up losing the race with machines after all.

Changes in work patterns

Regardless of the vast changes accompanying the technological development of the world, we cannot overlook the most important element of labour, which fortunately still remain people.

Societies in Europe may not yet be ready for a technological leap. According to the data from studies conducted by the European Commission, 57% of EU citizens have basic or slightly higher digital skills. If we discuss today step changes in work patterns, resulting from technological shifts, we should take note of the fact that this vast number of Europeans will not become computer programmers or software and mobile application engineers in the blink of an eye. These masses of people will need to be offered something else instead. Summit meetings of European politicians focus on the need to prepare social institutions, legislations and educational systems "so that people can be confident about their future, and the future of their children, also in the new world of work" – to quote the former EU Commissioner for Employment, Social Affairs, Skills and Labour Mobility.

On one hand – mobility, characteristic especially for the younger generation, on the other hand – technology with a huge potential for information flow and remote communication among people. This means change of work patterns.

A report of the ILO and the European Foundation for the Improvement of Living and Working Conditions (EUROFUND) entitled "Working conditions in a global perspective" indicates that over 20% of workers in Europe work on a remote basis from time to time. The highest proportion of such workers is in the Netherlands, Denmark, Sweden and the USA, and the lowest in Bulgaria, Spain, Germany and Italy. The survey was conducted among 3.5 thousand workers from 75 countries. For one third of these workers the main source of income was remote cooperation with several entities, for others such remote work was an extra job or an informed choice of work from home. In the case of 8% of workers, work from home (telework) was their only option owing to personal health issues or the need to take care of other family members. Importantly enough, 90% of respondents stated that they would like to work on a remote basis more, if only more jobs like this were available and if they were paid more. Apparently, professionally active individuals seem to want the traditional work model to change and nowadays technology has made it possible like never before.

However, there is a dark side to it. 43% of respondents performing telework worked at night (10:00 pm - 5:00 am), and 36% worked regularly 7 days a week. What about working time standards and health issues? How are European labour inspectorates going to ensure maintaining good health in a place of remote work, in the worker's private space?

Robotization – advantages and risks

Robotization is expected to eliminate many current risks existing in the work environment. From the OSH perspective, advantages associated with more widely used robotics stem from replacing people working in harmful and hazardous conditions. Consequently, exposure to chemical, physical, biological and ergonomic hazards is limited. The leading role will be taken by psychosocial factors. At the same time, history has taught us that new technologies bring not only advantages and greater opportunities, but also risks revealed in the longer term (e.g. asbestos).

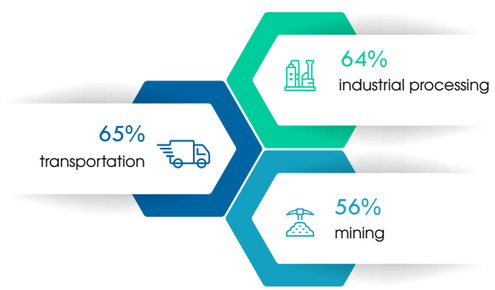
Aside from numerous advantages of technological advancements, there

> "As for the future, your task is not to foresee it, but to enable it".
>
> Antoine de Saint-Exupéry

is a concern that automation and robotization will increase unemployment. Repetitive tasks, with individual activities performed in sequences, can successfully be completed by machines. Another concern is that technological transformation will cause many traditional professions to disappear, or that it will at least cause a sharp drop in demand for workers of such specialties, although new fields of operation and new professions are likely to come into being. Perhaps we will need experts for engineering neural systems for the purposes of the occupational safety and health management. There will also be a demand for psychologists who will study the impact of professional careers on workers' mental health.

The risks resulting from the already approved technologies can be recognised as well-known, which is confirmed by the existing legal regulations. As for some of the new technologies and new work patterns, there is no such experience, and the lack of relevant legislation not only rules out the possibility to identify appropriate preventive measures in an informed manner, but also practically prevents regulatory authorities, such us labour inspectorates, from performing their duties.

THE HIGHEST AUTOMATION POTENTIAL BY SECTOR OF ACTIVITY



Source: Report by McKinsey&Company, Forbes, 2018

Without an assessment of impact of new substances on human health, conducted by the scientific community, or without specifying limit values of the work environment factors, it is impossible to assess exposure of workers or third parties to new occupational risk factors. An example of a technology where the impact on human health has not been precisely defined is nanotechnology or synthetic biology. Carbon nanotubes have similar features to asbestos fibres.

It remains to be hoped that ongoing research and commitment of the world of science and industry as regards risks related to new technologies will soon allow to elaborate relevant legal regulations.

In with the new

The phenomena and trends presented above give grounds for presuming that the consequences of the ground-breaking technologies forcing their way into our private and professional lives will soon be among the greatest challenges of humanity. The concept of industry 4.0 does not, however, rely on creating factories, where people will simply be replaced with robots. Instead, the idea is to make factories a better workplace, where people continuously remain the most important element and where – thanks to new technologies and intelligent machines – they will be given much greater competence than before. To make it possible, however, work positions need re-profiling as required by changes in technological processes, whereas people working in these positions need to be provided with relevant qualifications. This is the only way to stop the approaching technological unemployment or at least to reduce its scale.

The implemented "new" technologies do not eliminate "old" hazards in all areas of professional life. Carcinogenic substances and mixtures, as well as technological processes having that effect, serve as an example. It is the employers' duty to gradually replace carcinogenic or mutagenic chemical substances, their mixtures, agents or technological processes with less harmful substitutes. On the current level of technological development it is not possible to completely eliminate all carcinogenic and mutagenic substances from the work environment. The chemical sector is constantly growing and new risks which are not yet fully known, such as nanomaterials, appear in the work environment. For this reason workers exposed to such risks constitute a special group of persons at risk of health or life loss.

The era of automation that we have been observing brings along both opportunities and challenges. A challenge can be the labour market transformation and ensuring a smooth transition process of workers taking up new jobs. There should be enough such jobs but they will require a different type of skills – cooperation with technology and with people, perhaps on a remote basis.

Automation will significantly increase productivity. Many workers – instead of spending time on repetitive tasks of little value to clients, patients or students – will be able to focus on the more valuable part of work. This offers a possible impetus to economic development and opportunities for companies. The preparation work, which is necessary to take advantage of these opportunities, needs to start now – on the level of legislation, education, cognition and implementation.

From the perspective of work organisation, new technologies have intensified communication and cooperation between various departments and teams; they have had a positive impact on the work process, quality control and standards. They have also affected the way tasks are defined, as well as their content. Automation has contributed to limiting the number of tasks carried out manually and routinely and has put greater emphasis on managerial and analytical tasks.

Digital technologies offer extensive recording, reporting and monitoring opportunities. While these may be used to the advantage of workers (e.g. in order to reduce physical strain and hazardous situations), they may also present a challenge, especially in terms of data and privacy protection. The major cause for concern is algorithmization, particularly when collected data are used for important decision-making regarding salaries, contract prolongation, staff employment or layoffs. The use of new technologies has enabled reduction of the physical risk, but also potentially increased exposure to ergonomic risks, which is a result of more sedentary work.

Unless it is designed with workers' interests in mind, digitalisation may also increase their exposure to physical and psychosocial risks stemming from long or atypical working hours, being permanently connected, blurred boundaries between work time and free time, increased work intensity and the resulting stress.

THE HIGHEST AUTOMATION POTENTIAL BY OCCUPATION

Source: Report by McKinsey&Company, Forbes, 2018

Video coverage:

International conference Labour Inspection and the Challenges of the Future 1/2 - YouTube
International conference Labour Inspection and the Challenges of the Future 2/2 - YouTube