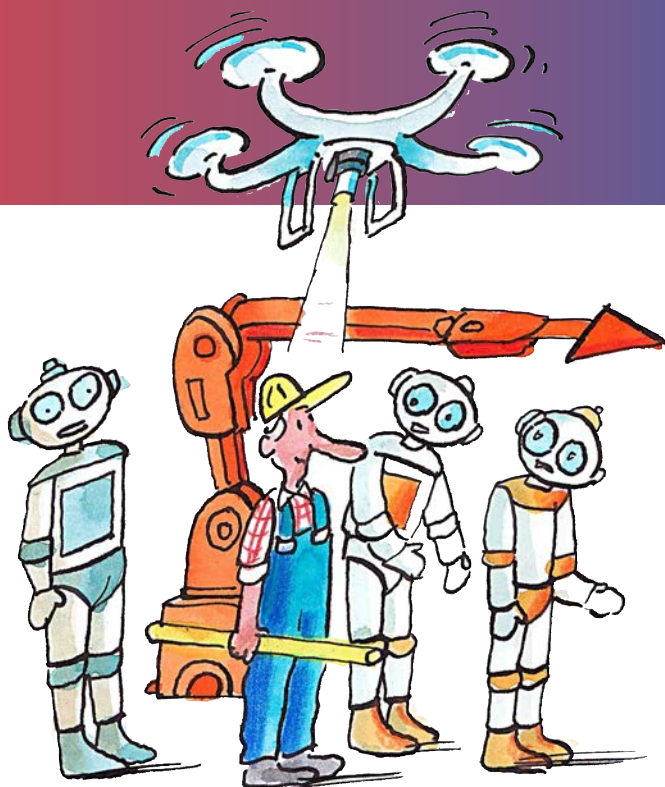


# The impact of the digital world of work on the lives of workers and their families – socio-ethical considerations





With the kind support of the European Union

## **Publisher information**

**Published by:** European Centre for Workers' Questions (EZA), Königswinter  
[www.eza.org](http://www.eza.org)

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**Designed by:** HellaDesign, Emmendingen, [www.helladesign.de](http://www.helladesign.de)

**Illustrated by:** © Klaus Puth, Mühlheim/Main, [www.klausputh.de](http://www.klausputh.de)

**Printed by:** Druckerei Eberwein, Wachtberg-Villip

**Status:** March 2018

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## Preface

It is now common knowledge that digitisation of the world of work has effects way beyond this domain. What these are and will be is difficult to foresee, though.

Therefore, numerous questions are being asked all over Europe – primarily for workers’ organisations:

What impact does the blurring of boundaries between places and times of human work boosted by the digital transformation have on the health of workers and on our living together in families and in society?

What role do workers’ organisations play when in the course of digital transformation previous industrial relations prevailing between employers and workers are increasingly disintegrating, to be replaced by a platform economy that explicitly rejects responsibility for staff?

How can social benefits still tied to gainful employment be generated when less and less human work is being used?

What significance will human work have in future for workers’ participation in society?

What does it mean for democracy, the rule of law and freedom in Europe when data are viewed as an increasingly important raw material and at the same time are substantially in the hands of a few companies outside Europe?

There are many more questions and not enough answers yet. That is why, in the 2017/2018 education year, EZA addressed these challenges and tried to come up with more answers as part of a project co-ordination on “The im-

pact of the digital world of work on the lives of workers and their families – socio-ethical considerations”. My thanks here go to all the participants and speakers, and in particular to Rainer Reißmayer, who headed up the project co-ordination and drew up this report.

The European Commission’s Directorate-General for Employment, Social Affairs and Inclusion supported our activities with content and funding. Enjoy your reading!

Sigrid Schraml  
EZA Secretary-General

“It means work that expresses the essential dignity of every man and woman in the context of their particular society: work that is freely chosen, effectively associating workers, both men and women, with the development of their community; work that enables the worker to be respected and free from any form of discrimination; work that makes it possible for families to meet their needs and provide schooling for their children, without the children themselves being forced into labour; work that permits the workers to organize themselves freely, and to make their voices heard; work that leaves enough room for rediscovering one’s roots at a personal, familial and spiritual level; work that guarantees those who have retired a decent standard of living.”

*Pope Benedict XVI’s encyclical CARITAS IN VERITATE of 29 June 2009, p. 101*

## Foreword

“Digitisation”, “Industry 4.0” and “World of work 4.0” influence every area of work and life in a society and evolve profound effects, for instance on “decent work”, “work-life balance”, “income distribution”, “wealth and poverty”, “societal, professional and social participation”, “designing and securing the workplace”, “ethics”, “cultural heritage”, “education and training”, “opportunities and risks”; “health and well-being”. This engages the trade unions, other workers’ organisations and Christian churches.

It is unquestionably a paradigm shift, widely known as the catchphrase “Fourth Industrial Revolution”. However, it is not “new steam engines” that are entering production and services. It is the learning machinery and equipment acting autonomously through smart algorithms which, when globally connected, will make tomorrow’s world totally different from today.

The seminars summarised here are part of EZA’s project co-ordination on “The impact of the digital world of work on the lives of workers and their families – socio-ethical considerations” and were carried out by EZA member organisations in the various countries of the European Union.

The aim of the EZA project co-ordinations is for different project organisers working on issues with very similar content to co-ordinate their plans, exchange ideas, support and network with one another. The results of the seminars are then summarised, furnished with recommendations for action and published as a report.

This report here consists of some thematic considerations, a brief look at the current state of play, the seminar reports of the project partners involved, a summary and closing remarks.

## Introduction – an assessment of how things stand

Under the technical key word “digitisation”, a lasting change is already taking place in people’s professional and private life. Internet, tablet and smartphone are perfectly normal companions. Online banking, online order systems, music, video, TV and cinema online portals, health and vital function wristbands, smart car systems and traffic control, digitised learning materials and school, Facebook, Twitter, YouTube and Instagram are just a few examples from everyday life.

The economy is advancing its “digital transformation”. Cloud systems control storage, production processes and services. Algorithmic software, which is capable of learning, improves machinery and equipment autonomously and reacts to market changes, is being used. The penetration is all-embracing. For instance, not only a product can be made efficiently and cost-effectively by 3-D printing (the Internet of Things) – this change is also palpable in state and local authorities.

What is known as the “citizen-friendly authority” offers its services, such as ordering dustbins, a passport or residence registration, on the internet. This example also shows with what a differing pace administrative bodies in Europe are adapting to the changes. Whereas in Germany initial tests can be observed, the local authorities in Estonia are almost exclusively digital. Medical history can be sent today via data lines, and treatments forwarded to the right hospitals. “Telemedicine” is also able to carry out device-controlled surgery.



## Drivers of digitisation

It is primarily the unfavourable demographic shift in the highly industrialised societies and the prospect of improved global added value that are driving this development. At the same time, costs are becoming lower, global trade flows efficient, time management controllable and competitive advantages manifest.

Another driver, though, is the relationship between power and capital. The social philosopher Oskar Negt says that it is by looking at people and not corporate groups that it becomes clear that globalisation exacerbates only the worst tendencies of capitalism: the „gap between rich and poor“ is becoming bigger and bigger, and the market is using the digital transformation to get rid of its last limits and controls.<sup>1</sup>

The effect of digitisation is an increasing discretionary power over data and people. This applies both to private life and – especially – to the world of work. Monitoring working time, work processes and absence improves the productivity of employees, increases added value and reduces costs. The wealth of data has now become so large that “data mining”, “big data” has become a new industry.

## People, digital transformation and the world of work

Now digital developments are not bad per se. For example, nobody would like to forego the possibility of ordering and paying for consumer goods online, and having them delivered. Dialogue through social networks can be handy for family members living far away from one another. Quick and instant communication over a smartphone can save lives. Digital information, education and library portals promote knowledge and education.

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<sup>1</sup> Oskar Negt: Arbeit und menschliche Würde. Göttingen 2001

Flexible working hours can mean more leisure. Teleworking jobs (home office, crowdworking, crowdsourcing, text, audio and graphic broking) can also provide more leeway for family life.

In industrial societies, the company is far more than just a place of added value. It is where personal contacts are established, social equity is negotiated, working conditions are agreed, team building is encouraged and conflicts are resolved.

## **Risks/Examples**

Digitisation enables digital work to be divided up into several types of mobility:

Work content is accessible from everywhere. Work equipment is becoming portable (tablet etc.). Working people are no longer tied to a fixed place of work. In the interaction between man and machine, the human acquires a serving, constantly adapting role as part of a larger production and service process.

This leads increasingly to boundaries being removed and labour becoming more flexible in terms of time, space and organisation. Autonomous working is a thing of the past. This is undermining health and safety at work, income and safety at work are guided by the cost-benefit ratios of autonomous production systems, and the dividing line between the professional and private sphere no longer exists. This can strain family life and cause health problems.

The digitised world of work calls for highly skilled people. As there are more and more well-trained people, their income will dwindle. The labour market determines the price. Lack of education and training results in bad, poorly paid jobs. These precarious jobs are predominantly temporary. Families are not started because of temporary jobs and low income.

Mental and physical stresses with regard to autonomous production systems are created by remaining monotonous residual tasks and cause emotional strain. Complex work in connected self-controlling systems results in work intensification and a further blurring of boundaries.

Empirical knowledge is lacking because the high-performance systems based on artificial intelligence allocate only a supervisory role to humans. Experience through sharing in the production process is lacking.

## **Opportunities and examples**

The last roughly 200 years of economic history have shown that through the industrial revolutions not only professions have disappeared, but also new ones have been created. At the same time, it must also be said that people's prosperity has risen in an industrialised society.

New professions are being created. For instance, there was no "info-broker" about ten years ago.

In some companies in the metalworking industry, engines and machine parts are assembled with the help of VR eyewear, enabling employees to carry out assembly instructions and direct supervision error-free. This is referred to as VR-assisted assembly.

New, flexible work models can bring about a better work-leisure balance.

To avoid job loss caused by digitisation there will have to be shorter working hours. These days off can be invested in leisure or families. It also unleashes the possibility of using personal educational measures. This can also be expressed in funded part-time education.

## Trade unions, churches, social organisations and digitisation

What employees' rightly rediscovered claims to work-leisure balance mean for the social partners is expanding their interest horizon and their goals for action. This is only possible if they in their organisations likewise react to the digital transformation and develop new models for their workplaces. Embodying strengthens credibility in the external image and among people.

A short **“glossary”** of terms that were mentioned time and again in the seminars:

### *High-Tech Strategy*

In 2006 the German Federal Ministry of Education and Research presented its “High-Tech Strategy”<sup>2</sup>. It defines the focal areas of the research policy. The plan serves the paradigm shift of production systems in support of a new industrial policy to fuel the economic recovery in the country.

The strategy has been revised several times and currently encompasses not only the research policy in science and business but also civil society. This means that all areas of societal life are included. So it describes the “digitisation” of every living and working environment and the associated fundamental change in society.

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2 BMBF: Die neue Hightech-Strategie – Innovationen für Deutschland. Federal Ministry of Education and Research. Berlin 2014.  
<https://www.bmbf.de/de/die-neue-hightech-strategie-86.html>  
<https://www.bmwi.de/Redaktion/DE/Artikel/Technologie/hightech-strategie-fuer-deutschland.html>  
<https://www.hightech-strategie.de/de/Publikationen-714.php>  
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[https://www.bundesregierung.de/Webs/Breg/DE/Themen/Forschung/1-HightechStrategie/\\_node.html](https://www.bundesregierung.de/Webs/Breg/DE/Themen/Forschung/1-HightechStrategie/_node.html)

## ***Industry 4.0***

The term “Industry 4.0” was used for the first time in 2011 at the Hanover Fair as part of the “High-Tech Strategy 2020” plan presented. The development towards the digitisation of production and service processes of any kind is a focal issue at the fair. The buzzword recalls the economic upheavals of the last 200 years known under the term “Industrial Revolution”.

## ***Work 4.0 or World of Work 4.0***

For some years now in Germany the change in work by Industry 4.0 has been debated animatedly using the term “Work 4.0” – mainly by the trade unions, other workers’ organisations and churches. The Federal Ministry of Labour and Social Affairs published its “White Paper Work 4.0”<sup>3</sup> in 2016, raising the dialogue process between all social partners to a new level.

## ***Europe 2020 – Horizon 2020***

In 2010 the European Commission approved its Strategy Europe 2020<sup>4</sup>. The priorities of the programme are: promoting research and development, higher education, lifelong learning to boost economic growth, better societal integration, environmentally friendly technologies, sustainable social market economy, protection of freedom and security in Europe and its citizens, health, demographic shift and wellbeing. The plan of the Horizon 2020<sup>5</sup> funding programme is to help achieve these strategy aims between 2014 and 2020.

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3 BMAS: Weißbuch Arbeiten 4.0. Federal Ministry of Labour and Social Affairs. Berlin March 2017.

<http://www.bmas.de/DE/Schwerpunkte/Arbeiten-vier-null/arbeiten-vier-null.html>

4 European Commission: Strategy Europe 2020. Brussels 2010/2018

<https://ec.europa.eu/eu2020/pdf/COMPLETE%20%20DE%20SG-2010-80021-06-00-DE-TRA-00.pdf>

5 European Commission: Horizon 2020. Brussels 2014/2018 <http://ec.europa.eu/programmes/horizon2020/en>

In the USA, in France and in Italy (in autumn 2016), the governments also adopted a shift towards Industry 4.0 in national strategy papers.

# The “Digital Age” is changing our way of living and working

18 to 21 May 2017, Tirana/Albania, organised by ÖZA (Österreiches Zentrum für Arbeitnehmerbildung)

## Areas of action on a European level

Gainful employment will always be an important component of the life of people and society.

Gainful employment is tending to decrease. However, new professions will be created for new jobs: green jobs and smart cities, occupations in the health sector, pharmaceuticals, mobility (autonomous cars), software (apps and AI), hardware (robots, computers), the food industry, automobile industry, national defence, information and telecommunication technology as in globalised production sites and the return of digital production to Europe (e.g. 3-D printing systems in server parks).

As part of the digital infrastructure, broadband and glass fibre networks will enable fast and open internet use. That is for everyone in professional and private life.

The open and free access (open-source) to any software via the world wide web could promote the possibility of a future trade union – a “cyber trade union”. Digitisation is thus no threat and danger, but rather offers the opportunity of being able to share content more quickly and becoming stronger through new members.

New methods for education and training will define the future. They will include many digital elements and be oriented to “life-long learning” (Edgar

Faure/Felipe Herrera/ Abdul-Razzak Kaddoura/Henri Lopes/Arthur V. Petrovsky/Majid & Ward Rahnema/ Frederik Champion: Learning to Be. The World of Education Today and Tomorrow. Faure-Report. Unesco. Paris, 1972).

## **Further development of the European social model through digitisation**

Digital and social are not a contradiction.

Trade unions must perceive the increasing speed of the change as an opportunity and integrate it in their work.

Digitisation in every aspect of life creates new forms of relationships: between social partners and government, and between workers and employers. These forms also enable new opportunities for dialogues.

Trade unions must apply the possibilities of “digital communication” (e-mail, social media, digital video/audio conference systems etc.).

The digitised world and communication are inconceivable without new rules. Hence the “social dialogue” also needs rules in this digitised world. In this respect the human is still the focus and benchmark of any technical progress. We have to bring ethics and values more strongly into public debate; previous cultural techniques are to be retained, wherever possible.

## **Further development of the market economy under social and ecological conditions**

The participants of the Tirana seminar are clearly committed to the social market economy. At the same time, they are convinced that the socio-ecological framework conditions are still necessary for a further development



towards a global “eco-social market economy”, as indeed the public are finally discussing that the rapid electronic penetration of every economic sector entails huge risks for data protection and the labour market. But so far, the ecological impact has hardly been discussed. It must be, though, because digitisation involves a huge “hunger for energy”. The blockchain technology on which bitcoins are founded has to interlink datasets one after the other. One single transaction by digital currency requires about 10,000 times more energy than a transaction by credit card.

The present liberal market-driven economic system of the US American economist Milton Freedman (Chicago school) fell, according to the Czech economist Thomas Sedlacek, into a “trap of mathematics and algorithms, a cost-benefit trap”. That is why economic activity has to be further developed so that everyone is able to have a fair share and a good life.

The rule of law, freedom and democracy are the cornerstones in Europe and they will constantly evolve further. This also has to remain so in the context of digital and global competition.

Those attending this conference in Tirana see digitisation as an opportunity. Enhanced by Christian values, the combination of ethics and progress, a good future is possible.

## Digital world of work – Industry 4.0: Decent work, development of employment and income distribution in society

8 to 10 June 2017, Mora/Portugal, organised by LOC/MTC (Liga Operária Católica - Movimento de Trabalhadores Cristãos)

Ana Santos of the ILO reported on the future of work, which can be broken down into four areas: work and society, decent work for all, work organisation, production and control of work. At present it is not yet clear in which direction globalisation is heading. That is why a sustained debate on the changes in the world of work is important. The future of work is not predetermined, can be moulded, must be adapted to humankind. The ILO campaigns for full employment, fair distribution of incomes and the profits from greater digital productivity, and new forms of social security.

José Fernando Almazán of HOAC emphasised the special value of work. Work is a gift and at the same time a humanisation project associated with the development of society. It serves human fulfilment and not just as a source of income. Work is the focus of the social pact, but not a means to consumption. It is about the aspects of dignity, respect, freedom, rights of every human. The future depends on the perception of reality, values, living conditions, the balance between individualism and the common good. This enables credible alternatives for decent work and society.

Fernando Marques of CGTP-IN said that some analysts predicted the mass destruction of jobs. Others, however, spoke of new forms of work, occupations and services. This produced the following demands: reduction of working hours; strengthening of collective bargaining and coverage by binding collective agreements with regard to the growing group of mini-jobs in the

service sector; protection against inequalities and poor working conditions because of fewer highly qualified people on the one hand and many people working in the low-pay sector regarded as replaceable; sustainable social security and its significance for the future.

At a round table, the national representatives debated employment development, economic consequences, precarious work and unemployment.

The following key words can be stated as results: rising inequality and number of precarious jobs; temporary contracts of employment; abandonment of the neoliberal economic system, because it destroys people's social, democratic, decent and comfortable life and coexistence; promotion of solidarity, dialogue with work colleagues, friends, family members for the affirmation of a possible different reality that enables a respectful work environment.

Ricardo Coelho of LOC/MTC referred to Pope Francis's "Laudatio Si" encyclical. According to it, economic activity is running a common home. The future will not be dominated by technical progress but by how we deal with it and what objectives are defined. Full employment has something to do with the distribution of wealth. Work is the best mechanism for wealth distribution, which is why working hours should be reduced without loss of pay, high minimum wages introduced, and education geared to the common good and to mature citizenship, so that mature citizens can have a strong influence on political decisions.

Finally, the participants visited the CONESA company in Mora. Sixty permanent staff and about 250 seasonal workers produce tomato puree for a period of roughly two months. Technological progress is also noticeable here and has doubled production in 20 years with a constant number of workers. With digitisation, the firm will presumably be able to increase production again with the same workforce.

## Decent work in a digitised world of work

22 to 25 June 2017 in St. Pölten/Austria, organised by KAB Deutschlands (Katholische Arbeitnehmer-Bewegung Deutschlands e.V.)

The visit to the GEBERIT company, market leader for bathroom equipment, with a workforce of 12,000 in 40 countries, enabled the permanent technical development of automation in the production sector to be observed.

Dr. Stefan Perini of AFIIPL explained that in 2011 as part of its “High-Tech Strategy 2020”, the German federal government mentioned the term “Industry 4.0”. This strategy serves the paradigm shift from production systems to a new industrial policy to boost the economic recovery in Germany. In the USA, in France and in Italy (in autumn 2016), the governments also adopted a transition towards Industry 4.0.

What is termed the fourth industrial revolution refers to dovetailed innovations and technologies. The hallmarks of the “smart” factory visited are: use of big data and robotics and application of the Internet of Things; the availability of systems to connect the physical and virtual world, so-called cyber-physical systems (CPS), of cloud computing and “artificial intelligence” (AI), of autonomous transport systems. The company works with variable, tailored productions and employs highly skilled labour. Only such skilled labour could handle these new technologies with their artificial algorithms. Machines communicate with one another autonomously, are “capable of learning”, and work with humans on improving production processes.

Dr Michael Schäfers of KAB explained that there was no such thing as neutral automation and technical development. Rather, this meant a transformation of political and economic power structures, of ownership, of the added value of work and value creation. According to him, it remains to be

seen where this is all heading. International studies try to estimate the impact of the digitised world of work.

At present, the World Economic Forum is looking at the loss of more than seven million jobs by 2020. At the same time, though, there would be over two million new, skilled jobs.

Other authors – like the Swedish economist Carl Benedikt Frey and the computer scientist Michael A. Osborne – saw in their study of 2013 (“The Future of Employment: How Susceptible Are Jobs to Computerisation.” Oxford, 2013), having examined approx. 700 occupations, the risk that on the US-American labour market every other job could be digitised/automated. Within the next 20 years, about 47% of jobs in the USA could be lost because of digitisation.

Andreas Gjecaj of the Austrian Trade Union Confederation (ÖGB) demanded in his speech that the rule of law also had to apply to the Internet. The new working conditions being created there, e.g. crowdworking, text brokers and webpage designers, were in global competition and offering their working capacity without any labour law, collective agreement or social protection for 1.5 dollars an hour. Binding regulations and collective wage agreements have to be introduced here. The risk of the impoverishment of population strata, especially young people, is evident, and their access to the regular labour market is made difficult, delayed and prevented. In the digitised world, their initial and ongoing training is of crucial importance.

In this time of transition to the digitised world, which encompasses the professional and the private world, the balanced relationship between old and new is important. It is the foundation for the future. It also includes the fair distribution of the shrinking amount of paid work; the fair distribution of prosperity gains from digitisation to all, and not just to few, provisions of labour law, collective agreements and social security, especially in the digital

age, an open and free view for the future, in which more and more people and algorithms do human work, but it is clear, though, that society and people have control of these developments and relationships.

## Digital world of work – Industry 4.0

8 to 10 September 2017 in Velehrad/Czech Republic, organised by KAP (Hnutí “Křesťan a práce”)

Society’s awareness of the topic of Industry 4.0 varies a great deal in the EU countries. Whereas, for instance, in Germany or in France there is wide debate of digitisation and its consequences, people in the Czech Republic are not prepared for this future. This is due mainly to lifestyle and attitudes to the world of work and to private life. Questions relating primarily to the possible negative effects are asked only tentatively: unemployment, job shortage, social tensions, forced willingness for lifelong vocational skilling.

The papal encyclical “Laudatio Si” was also mentioned. The yardstick must also be the Church’s social doctrine, which focuses in every respect on humankind and its wellbeing. The “common home” of Europe can only be created if European, Christian values are not lost. At present, this set of values is lacking, or is insufficiently embedded.

The participants realised how complex the topic of “Digital world of work – Industry 4.0” was. Especially since it already transpires that these developments cannot be prevented, are European and globally interdisciplinary, and interwoven with all living and working environments. That is why the academic discourse on these topics is important for finding solutions and persuading civil society to be more committed. Many areas need solutions simultaneously: education, training, family policy etc.

The digital world as a vision is also an opportunity for people and societies to be able to live in dignity. That can be achieved if every individual actively influences the conditions under which we live together through his/her personal example. The collaboration between all generations is required.

It became clear in three working groups that these new technologies must promote peace and assist humankind; digitisation must not be used for armed conflicts; financial profit from digitisation solely benefiting individuals and specific groups must be prevented.



# The ethical aspects of work in the digital age (Industry 4.0)

22 to 24 November 2017 in Brussels/Belgium, organised by ACLI – ENAIP (Associazioni Cristiane Lavoratori Italiani – Ente Nazionale ACLI Istruzione Professionale)

A purely national discussion of this digitisation process is not possible. The European dimension is the lowest level on which the debate can be held to tackle problems and come up with solutions.

Jozef Mozolewski (Solidarność / EZA) and Roberto Rossini (ACLI) expressly pointed out in their greetings not to forget humankind behind the digitised and robotised world. It is important to develop instruments and systems for safeguarding the dignity of working people.

The experts demonstrated that addressing the challenges of Industry 4.0 required multidisciplinary and supranational approaches, as the dimension of the transformation was epochal.

It is not easy for all citizens to reinvent themselves in order to integrate in a digitally defined world, as this transformation affects every dimension of the person. Work has always been an instrument of integration of the individual in society. That is no longer the case now because of the digitised aspects of life. There is increasing inequality and the risk of the lack of social security.

The topic of digitisation and Industry 4.0 is already penetrating deeply into the world of work, into the welfare system, into the organisational aspects of human life and into the shaping of society by blurring the boundaries between places and spaces for production, education and leisure. Some

examples of this transformation are the digital platforms like Amazon, Uber, AirBnB, Clickworking etc. The mobility and flexibility expected of the people who are employed through such platforms is far beyond the level required in regular employment situations. The consequence is low pay, a lack of work contracts, telework, and limitations in time management and self-organisation. The risks for democracy are big if digitisation causes unequal living and income conditions and the gap between rich and poor to increase. But highly-skilled people will also receive less income, because there are simply more well-trained people. The labour market determines the price.

Money and power in too few hands drive out broadly based ethical action and ethical responsibility. Yet too little money and too little power likewise limit the possibilities of ethical action.

In this situation, fewer and fewer people are organised in trade unions. This makes the exercise of workers' collective rights, such as collective wage agreements, or the conceptual definition of work as a place of human dignity, increasingly difficult.

The reduction of inequalities and the promotion of social integration, the purpose of workers' organisations that form the EZA network, can also be described as follows: the benefits of digitisation will be true for all. It is necessary to ensure that the positive value of the connectivity between people is a driving force for improving their living conditions (modelled, for instance, on some regions of Europe like the Scandinavian countries) in order to control and contain destructive and disturbing influences.

Workers' organisations have to be increasingly able to explain the processes, to understand people, and to champion the fair administration of the common good. They are called on to promote training and wellbeing, to support communities and to be multipliers for people. To be able to achieve this, the integration of the European dimension is fundamental now.

A closing thought on human dignity and ethics: in the past, for instance, many Italians went in search of work and opportunities in Europe and world-wide. At the same time, in Italy they have always played an indispensable social role in the recognition of workers' rights and of dignity, which the Christian tradition has always made the focus of human work experiences.

## Industry 4.0 and its influence on the labour market

8 to 11 February 2018 in Lublin/Poland, organised by Europejski Dom Spotkań – Fundacja Nowy Staw

The key aspects and issues included the presentation of the differences between the countries in implementing Industry 4.0; education and training; the challenges and threats associated with digitisation in the industry; the influence on the situation of workers; ethical, social, practical influences in the labour market; labour rights, and the reform of higher education and vocational training.

On the one hand, the ongoing digitisation/Industry 4.0 will create totally new occupations and simultaneously displace numerous people from their jobs. Production processes will be taken over by automated machinery controlled by algorithms.

The possible consequences are new requirements of job skills and altered working conditions.

Trade unions, science and politicians are called on to incorporate these changes in their ethical and legal decisions. They have to offer the opportunity to train society further and create a genuinely integrative labour market.

The seminar results included the awareness that it is necessary to prepare workers for the changed working conditions and the ongoing digitisation of production. This includes the acquisition of new skills for operating digital systems and maintaining them. Digitisation processes must be accompanied by new security and labour standards. It is important to take the pertinent

stress factors into account, to include the question of monitoring at the workplace, to strengthen the feeling of security with regard to the workplace, and to develop trust and confidence in software, algorithms and machinery.

The results also include the endeavour to prevent negative social effects during the roll-out of Industry 4.0. These negative effects include the digital exclusion of elderly people who do not keep up with the development of modern technologies, or of people withdrawing – also referred to as “offliners” – who refuse digitisation or have no access to this technology. They may lack “digital skills” and they have few opportunities to be employed in modern work environments.

In addition, there is the call for comprehensive and broad support for education, mainly with regard to the tertiary education level. This embraces a state’s educational objectives which, building on completed secondary schooling, prepares for higher job positions. Workers must also have the possibility of vocational retraining to prevent them being forced out of the labour market.

Social education can inform about “digital exclusion” and help workers not slide into a precarious working life.

And finally, the necessity for creating awareness among trade unionists, employers, representatives from business, education and politics of the digital age and of digitisation effects in the world of work. Such awareness has been improved, e.g. in Germany through the concept of “World of work 4.0”, which some trade unions use.

Flexible workplace regulations, telework jobs, crowdworking, the balance between private and working life, working conditions without stable employment and without fixed working hours must be newly regulated by collective

agreements. Only in this way can the trade unions collectively exercise workers' rights.

## Summary

It is virtually impossible to summarise in any way the wide range of input in the seminars and the organisers' publications (the mobile phone as the cause of blurring of boundaries, robots "devouring" jobs, the disappearance of production sites as we know them, right through to artificial intelligence, which takes over decision-making processes). But it is precisely this wide range which shows that digitisation processes must be a core talking point in the social dialogue.

That is why instead of a "summary", more space was given to the results of the individual seminars, as although they are sometimes "special" in their treatment of digitisation questions, they certainly contain some important pointers that can be transferred to similar issues.

In addition, though, from a retrospective view of the seminars it was the following recurring points that are important for the future dialogue process and can be used as the basis for further recommendations for action:

- We see and talk about the risks – there is far too little focus on the opportunities of digitisation.
- Digitisation gives work a further boost of acceleration. However, the employed are now already at the limit of their physical and mental endurance. Already too many are suffering from the blurring of boundaries and work interference with private life.
- Digitisation will produce a boost in productivity and returns. Who do the gains in income and time belong to? In future the distribution question will have to be resolved increasingly over the factor of time.

- Digitisation will change the place of work, and so “classic” workers’ rights like safety at work, working time and co-determination will also lose their reference (the company). New concepts of protection have to be created (especially for workers with a quasi-subordinate status).
- Education and participation for disadvantaged people must be given more attention, because otherwise even more people will be left behind and excluded.
- The upcoming dialogue must not be left to companies, shareholders and banks alone; it needs a corrective dimension that contributes aspects of individual and societal ethics. Here the Christian social doctrine can be a guide for all.



## Closing remark

Regardless of the question whether this is actually about any 4.0 or a revolution, the fact is that life and work are undergoing rapid transformation, and workers, trade unions, churches, social organisations and institutions are called on to protect (working) people.

For the work of EZA and the partners in this network, Dr Böhm has written a very fitting text (in my view), with which I would like to conclude this report:

The digitisation of the world of work is an irreversible process. Demonising it lock, stock and barrel would not be an option. Instead it must be moulded.

As we are just at the beginning of this development, it is too early for irrefutable answers, but important questions and impetuses must be introduced. In this, we Christians are guided by the biblical message of the Kingdom of God and his promise of a life in human dignity, peace, solidarity and justice for all. This vision gives us the criteria for our critical view of the developments.

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