Digitalisation for equality, participation and cooperation in industry

More and better industrial jobs in the digital age

Digital technologies are increasingly present in our daily lives and our working lives. Digitally-enabled objects are present in our pockets, in our homes, in our vehicles, and in our workplaces in industry. They enable people and objects to communicate anywhere and at any time in a global and interactive network. They have transformed the way in which we work, have dramatically changed whole industries and will continue to do so in the future.

IndustriAll European Trade Union proposes policies and actions for more and better industrial jobs in the digital age. Their common strategic objective is that digital technologies should be leveraged to develop cooperative, integrative, democratic and egalitarian workplaces and societies, in the long-term interest of workers and of society at large.

1 Digitalisation massively impacts employment, and has specific effects

Digitalisation is the **networking** of any object and any person, at any time, in any place. In industry, it leads to the **digital integration** of all processes: design, manufacturing (the "Industry 4.0" concept), maintenance and administration.

This digital integration has the positive potential to deliver huge **gains** in productivity, reliability, adaptation to customer needs and speed, on all scales (from an individual machine to a whole productive system). It can significantly improve the comparative advantages of European manufacturing, and thereby protect or even **reshore many industrial jobs**.

On the other hand, the negative consequences of digitalisation on **employment volume** of existing jobs are potentially **massive**. The proportion of human jobs that are at risk of being replaced by digital technologies is estimated at between 12% and 45% for the whole economy. These threatened jobs are mostly routine jobs typical of industry, including white-collar jobs.

Digitalisation also has **specific** effects, beyond the productivity gains that have been common to all technological transformations of industry in history:

- It **concentrates** power and wealth in Digital Marketplace platforms, thereby depriving all other companies along the value chain with the capacity to invest, to innovate and to provide good wages and working conditions.
- It challenges the foundations of the permanent, full-time **employment relationship** based on collective agreements, because all functions of this relationship (including the control of the task) can be performed individually, automatically and remotely. Consequently, workers are placed in a world-wide competition on price, and **precarious work** with **individualised** terms & conditions is exploding (freelancers, bogus self-employment, crowdsourcing).
- It opens up unprecedented possibilities for asymmetric, vertical and unilateral **control** over workers, but also of symmetric, horizontal, multilateral and democratic **cooperation** between them.

2 Digital technologies must foster equality, participation, and cooperation, for more and better industrial jobs

IndustriAll Europe considers that technological developments are not deterministic. It is the trade unions' duty to engage with them and to **shape them positively**, to take advantage of the digital revolution, for the welfare of industrial workers in Europe, and of society at large.

IndustriAll Europe therefore proposes **policies** and **actions** to seize the opportunities of digitalisation and to orient its evolution towards more equality, participation and cooperation in industry, and towards more and better industrial jobs in Europe. These proposals also aim at alleviating the threats posed by the impact of digitalisation on employment volume and on the employment relationship itself, and by its potential to concentrate wealth and power.

3 Create industrial jobs in the digital age

3.1 Leverage digitalisation for responsible innovation

Digital technologies can significantly reduce employment in existing economic activities. However, they also have the potential to create new markets and new jobs, by meeting societal needs (e.g. remote monitoring in healthcare, smart electric grids managing irregular supply by renewables), or by re-shoring externalised jobs. These new jobs can compensate losses, at least in part, and their potential should be fully leveraged. At this stage of its reflection, industriAll Europe has identified some fields where digital innovation has a great potential for job creation in Europe, and where political action is needed.

3.1.1 Restore a leading industrial position in electronic components and systems

IndustriAll Europe supports the objective that the European Union should double the value of **electronic components and systems** being produced in Europe by 2025, by implementing the European Strategic Roadmap on Electronic Components & Systems published by the Commission, DG Connect, in June 2014, as part of its strategy on Key Enabling Technologies (KETs). This Roadmap includes both massive investment in supply (full factories) and in the demand of innovative socio-technical systems (in the form of geographically dedicated "reference zones" for their digital integration and testing).

3.1.2 Mandate ambitious standards for the security and confidentiality of data in European networks and "cloud" infrastructure

IndustriAll Europe calls for the development of a compulsory standard, defined in functional terms, ensuring the **security** and **confidentiality** of the transmission, storage and processing of online data (including in the "cloud" and in corporate networks), and thereby the preservation of fundamental rights to privacy and confidentiality. This standard should be implemented in software, in microelectronic components and in complete systems.

This standard would better protect European citizens and workers. It would also provide a competitive advantage to EU-based microelectronics and equipment manufacturers.

3.1.3 Create jobs and reduce waste with automated dis-assembly factories

Flexible, digital assembly technologies could be used in a reverse flow to efficiently **dis-assemble** products having reached their end of life. Provided the product contains (e.g. in a removable RFID tag) the information related to its assembly operations, a flexible dis-assembly line could use this information to dismantle the product, and recover reusable components and strategic raw materials, thereby reducing waste generation and pollution, in a high-performance reuse, remanufacturing and recycling process.

Such technical developments could have a strong, positive impact on industrial employment, and on raw materials and energy efficiency, thereby reconciling environmental and employment concerns.

IndustriAll Europe recommends that the EU Circular Economy Strategy include the development of the technologies, standards and institutions to equip such dis-assembly factories: reverse logistic flows, sensors, automated testing systems, data semantics to describe (dis-) assembly operations.

3.1.4 Digitally trace and monitor social and environmental conditions of manufacturing

The international market position of EU-based industrial firms is handicapped by unfair competition from companies that source their manufacturing activities in long, complex and international supply chains, and which do not know (or deliberately hide) the social and environmental conditions of manufacturing at their suppliers' facilities (and further up the chain of suppliers). A first condition to restore fair competition is that information on manufacturing conditions be reliably generated and transmitted along value chains.

IndustriAll Europe demands that a technical and institutional infrastructure be set up to ensure the reliable **tracking** and **monitoring** of **environmental and social** manufacturing conditions along value chains. Once reliably collected according to internationally-accepted measurement standards by independent third parties supported and supervised by trade unions, this information should be inscribed onto an individual RFID tag attached to the item, with appropriate digital authentication so as to prevent later tampering.

This digital infrastructure will enable customers along the value chain (until the final consumer) to be reliably informed on the social and environmental conditions of manufacturing, and thus to make choices based upon more than price alone. This will restore **fair competition** for companies abiding by EU social and environmental values and rules, improve their market position and their employment volume – and support their Corporate Social Responsibility efforts.

3.2 Regulate the sharing of value added along digital supply chains

Companies can only provide decent working conditions and wages to their workers, invest and innovate for their future, if they generate a sufficient economic value added. If this value added is captured by a dominant player along the value chain, and specifically by a digital platform, no other company has the capacity to be a decent and sustainable employer. The **distribution of value added along the value chain** is thus an essential issue, to be treated in parallel with the more usual issues of the sharing of the company's value added between labour, investment and the remuneration of capital.

3.2.1 Regulate and tax value creation according to the rules of where work is physically performed

Digital-based companies have the technical possibility to legally settle anywhere – and specifically in jurisdictions where labour laws and taxation are low, or even non-existent (aka "tax havens"). From there, they organise the work of their employees remotely, but are subject only to the legal and taxation obligations of their legal place of establishment. This can be the source of dramatic races to the bottom in terms of wages and working conditions for employees, and of tax revenues for EU Member States.

IndustriAll Europe believes that such developments must be prevented. We recommend the following rules:

- the **labour law** and **collective agreements** applicable to a given employee must be that of his/her **physical place of effective work**, i.e. also his/her home if s/he works remotely from there
- the **tax regime** applicable to the company's profits should be determined according to the Member States where its employees physically work.

On the second point, industriAll Europe recommends applying the principles of a *mandatory* **Common Consolidated Corporate Tax Base** to *all* firms having employees that physically

work in more than one Member State of the EU. This should be complemented by a minimum rate for corporate tax.

3.2.2 Set up open standards for the digital integration of manufacturing

If the communication standard for the digital integration of manufacturing (aka "Industry 4.0") were proprietary, the owner of this standard would capture a large share of industrial value added. To prevent this, industriAll Europe recommends that this standard be **open**, and accessible to all players in industry through **Fair, Reasonable and Non-Discriminatory** legal & economic conditions.

3.2.3 Regulate monopolistic digital platforms

The concentration of wealth and power in the hands of monopolistic digital platforms is to the detriment of their industrial suppliers. IndustriAll Europe recommends **regulating** these platforms by means of four measures:

1. the "big data is open data" principle,
2. the obligation to introduce "fair" search algorithms,
3. the breaking-up of cross-subsidisation structures, and
4. the prevention of unfair trade practices.

3.3 Invest in the cognitive and physical infrastructure supporting the digital transformation of industry

3.3.1 Create the digital skills necessary for industry

In the digital transformation of industry, as in all transformations of industry that have preceded it, a first task for its social management is the long-term **anticipation of change**. Once these changes are identified and quantified, the **skills** of the existing and upcoming workforce should be shaped to adapt to this new situation, and to give European industries the qualitative edge they need to differentiate on world markets.

Such reflections are already under way in the European e-skills policy, such as the common, vendor-neutral e-Competence Framework, and the "Grand coalition for digital jobs", and must be complemented by trade union action (see below).

3.3.2 Invest in broadband infrastructure

The networking of people and objects requires broadband transmission of information everywhere – and thus a massive investment in the infrastructure that will execute it. IndustriAll Europe supports the deployment of broadband radio and fibre networks across Europe, with specific care to include all regions and all Member States.

4 Better conditions for digitally-transformed work

The introduction of new technologies offer countless options; which options are chosen in any company and any country depends largely on:

- the qualifications of the workforce;
- industrial relations and strength of labour representatives;
- the political system and regulatory arrangements;
- decisions taken in other companies and other countries.

The consequences of digitalisation are not caused but are shaped by the actions (or non-actions) of all parties concerned. For industriAll Europe it is important to state that there is no determinism regarding the social impact of digitalisation. The consequences of the changes are still open and we are willing to contribute to shaping them in a just and fair way.

We have seen three industrial revolutions in the last 200 years that transformed production, increased productivity, changed work and increased wealth. Average life expectancy rose, for instance, from 30 to almost 80 years.

The 1st Industrial Revolution was triggered by the steam engine, the 2nd by the introduction of electricity and chemicals and the 3rd by information technology. The redistribution of the

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4

profits created as a result of productivity increase did not occur spontaneously, however. At first the middle class rose to political power, international trade grew, and cities became the new power base. Work changed by the introduction of division of labour and mechanisation. In the 20th century workers organised in unions and political parties, and they got their share of productivity increase too, for the first time.

Work changed all the time: division of labour, international trade, scientific management and automation. In the 1980s the 3rd Industrial Revolution started, triggered by information technology. Automation reached every area of work. Productivity increased again and work continued to change: more collaboration, less division of labour, intrinsic motivation. Now, however, the position of unions is weakening, which has led to increasing differences in income.

Work will continue to change: jobs will disappear at intermediate skill level, creativity and communication skills will become more important to implement concepts like self-regulation and a new style of work. Everything is enabled by the Internet of Things. Moreover, a further Industrial Revolution is on its way with the introduction of bio-based and Nano technology.

We are currently witnessing a revolution within the 3rd Industrial Revolution, often referred to as "Industry 4.0". Due to exponential growth of information technology capacity it is possible to increase productivity further by optimising the possibilities offered by information technology. Transforming IT to communication technology is leading to more complex supply chain systems. This is changing the quantity, quality, content, organisation and management of work. Mutual trust and sharing of responsibilities are becoming more important.

History's lesson is that workers cannot stop the evolution of production, but they can make a difference when it comes to the redistribution of the profits that are the result of productivity increases and the way organisations work. Involvement of workers in this process of change is important at all levels. Workplace innovation is necessary to implement technological innovation successfully at company level. Furthermore, workers' organisation in trade unions is crucial for

being involved at sectoral, national and international level to be able to shape legislation processes and collective agreements.

industriAll Europe therefore will need to focus on:

4.1 Information and consultation rights

It is of great importance to secure information and consultation rights of workers' representation in this process at company level as well as at sectoral, national levels and European levels. The technical changes and possibilities will bring about many social changes in companies and in society too. Workers and their representatives should be involved in due time in finding solutions for the challenges of a more connected work environment and should have their say, as they are the workplace experts. Only if workers' representatives and trade unions have sufficient information and consultation rights will we have the possibility to act and to use the moment of transition to the digital age for establishing good regulations at company level and for negotiating good collective agreements addressing the changes.

4.2 Ensure good working conditions and work-life balance

Due to enhanced technical possibilities more and more people are now working in a very mobile way, not bound to a fixed workplace anymore. Employers see that as a possibility to reduce their fixed costs and use it for rationalisation (i.e. new office concepts, etc.). For workers mobile work includes both positive and dangerous aspects. A main future task will be to minimise the risks of mobile work for workers (i.e. constant availability, limitless work, etc.) through good collective agreements, specifically on the right to disconnect.

Similarly, in a factory setting, the human worker could be made into a mere cogwheel in the digitalised process. IndustriAll Europe supports on the opposite the development and the negotiated implementation of "assisting technologies", where digital devices support the human worker in taking decisions and in solving problems,

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5

thereby making his/her work more interesting and better qualified.

4.3 Ensure the right to training & education

The technical changes entail the need for changed and new qualifications for workers. In this process it is important for us that qualification is a right for the worker, and not a favour from the employer. We have to fix mandatory and sufficient training rights for workers to keep and improve their chances in the modern labour market.

1. Integrating the new digital **qualifications**, tasks and work categories in negotiations with employers.
2. Negotiating the **permanent up-** and **re-skilling** of the existing workforce, to adapt to the fast pace of technical change in the digital world.
3. Supporting the usage of **standards** as tools to increase **vendor-neutral** training and certification.
4. Negotiating **e-learning** conditions that are favourable to workers, i.e. with effective, measurable and certified outcomes, at affordable prices and with a fair sharing of costs (in time and money) and benefits.
5. **Anticipating** the need for new qualifications and competences, especially for young people.

4.4 Ensure the right to collective bargaining

We fear that at the same time technical changes are taking place a decentralisation or even an individualisation of collective bargaining could rise, because workers and labour markets are more and more fragmented, which can cause difficulties for the collective organisation of workers. Despite that we are convinced that workers' collective interests remain, even if workers are working more and more individually. Trade unions also have to think of ways to organise workers who are working in isolation and are used to acting more individually than collectively. Organising solidarity between fragmented workers is a future challenge.

4.5 Reflect on working time and productivity gains

Digitalisation can create more profit and productivity gains. Due to the technical changes more and more flexibility is possible. Unfortunately that potential is currently used more in favour of employers than in favour of workers. We have to advocate working time arrangements which avoid too much unilateral flexibility on the part of employers, because now we can already recognise that this kind of flexibility is seriously harming the health and work-life balance of workers. Newly occurring psycho-social risks and stress related to the new technologies as well as to flexible and limitless working time arrangements have to be avoided.

The ongoing introduction of digital technologies into industrial production will generate further increases in productivity. For us it is clear that workers should get their share of the productivity gains, which should be used to deal with the social consequences of digitalisation for workers, as well as for society as a whole. And in industrials view workers should get their share of the productivity gains.

4.6 Ensure Occupational Health & Safety in a digital workplace

The operation of fully automated robots or vehicles in immediate interaction with human workers (the concept of "collaborative robots" or "co-bots") promises progress in terms of ergonomics and of facilitation of the most tedious tasks. It also entails significant health & safety risks, which must be anticipated and addressed by appropriate liability rules and safety standards.

4.7 Obtain and ensure the right to privacy at work and at home

Employers have the right to ensure that their employees actually perform the work for which they are paid, and that they respect health and safety regulations. A form of surveillance of workers by their employer is thus legitimate. However, the technical means made available by digital technologies enable a level, a continuity

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6

and a frequency of surveillance that is beyond anything experienced so far. This excessive surveillance is resented by workers. It is also an issue for employers – because it leads to demotivation and passive-aggressive behaviours. IndustriAll Europe advocates a right to privacy at work. The exact limits of legitimate surveillance, adapted to each workplace situation, should be the purpose of explicit social dialogue.

The digitalisation and introduction of new technologies also introduces some technological possibilities for surveillance at home – telework, computers, smartphones – which too often can go beyond the normal scope of ensuring that the required work is produced. We have to ensure also that the right to privacy at home is respected.

4.8 Adapt the structure and culture of trade unions to a digitalised workplace

Digitalisation of work also entails a challenge for trade unions themselves, namely to organise workers, such as high-skilled software engineers and ICT managers, or the precarious workers spawned by digitally-enabled "crowdsourcing", whose needs are very different from those of trade unions' existing constituency. Equally digitilisation could decrease inside companies the number of traditional trade union members on which the organisations relied. This requires trade unions to adapt their structure and culture to this new environment.

5 Conclusion

Digitalisation of manufacturing is a major social, economic and industrial upheaval. It challenges trade unions and societies on a massive scale. IndustriAll European Trade Union invites political institutions at all levels, companies and social partners, to a thorough and concrete political dialogue to make the best – and avoid the worst – of this structural change in our lives and in our working environment.

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7

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8