



Digitisation of manufacturing: The quest for the Union 4.0 paradigm

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We are witnessing a great transformation in our times in the way things are being manufactured. Products that were crafted by humans in the past are now being manufactured by automatic machines and robots. We are now in the middle of, in today's parlance, the 'industrial revolution 4.0', entailing the digitisation of the economy. This article will look at how digitisation rapidly transformed the factories of today and how unions are preparing to survive the factories of tomorrow.

Digitisation of the economy was the central theme of the World Economic Forum in Davos in December 2015, where prominent economists and European research institutions produced reports on the future of work, touching on possible consequences of digitisation on workers (IndustriALL, 2017). In May 2017, the Friedrich Ebert Foundation organised an international conference in Vietnam along the same line of inquiry that sought to answer two main questions: what is the impact of digital transformation on Asian economies, and has this transformation been made fair and inclusive? These two events catapulted the discourse to a new level, with differing views and perspectives from actors at different levels.

What history tells us

We have learned from history how industrial manufacturing has been in a state of constant technological change since the beginning of industrialisation, starting with the use of water and steam that introduced the first industrial revolution and gave birth to certain manufacturing industries like textiles, through the development of assembly lines and conveyer belts in the period of Fordism at the beginning of the 20th century, then the computer age in the 70s as the third industrial revolution, moving towards the fourth industrial revolution that fuses advanced digital technology with manufacture of products. Though at the beginning the productive potential opened up by digitisation was limited in its scope and space, it was greatly enhanced when information technology was harnessed to telecommunications, enabling computers to link with one another seamlessly in combining the latest technology and a fast internet connection.

In those first three industrial revolutions, labour experienced painful job displacement and worsened working condition. However, each also created employment, mostly in manufacturing and labour-intensive sectors, and gradually, through a mixture of government regulations and industrialists' innovations, workers' plight improved in some places in the global north like the United Kingdom (UK) and the United States (US).

These major changes in the manufacturing process can be seen as both social and technological revolutions. The current digital transformation will dramatically modify production processes

which use cutting-edge technologies and to some extent deploy robotics in a way that contributes to increasing productivity growth in companies. This, however, might also lead to displacement of workers and further erosion of the employment relationship.

Indeed, the discourses on the impact of industry 4.0 have been polarised. On the one hand, optimists assert that digitisation in the labour market will create more high-paying jobs, and new jobs will be generated with fairly high salary for highly-skilled workers with high levels of autonomy and flexibility that will be more attractive to young workers. On the other hand, the pessimists point out that there will be mass 'technological unemployment' as the deployment of new technology displaces low-skilled workers and creates more precarious jobs. Moreover, this technological trend will presumably lead to re-shoring of jobs from the developing to the rich and much more developed economies. A report from UNCTAD (2016) predicts that 'reshoring economic activities to developed countries is one mechanism that could lead to shrinking output and employment in the manufacturing sector of developing countries'.

These opposing views need to be taken into account as an old challenge demanding new answers.

Challenges for industrial unions

One assumption is that unions have a narrow understanding of the complexity and development of this new technology. Some unions view Industry 4.0 as computerisation of things, and believe the use of smart machines such as 3D printing, robots and artificial intelligence in the production processes is still far in the future. How deep it will be embedded in the manufacturing process, how fast it will come and how it will affect jobs are still big questions. For others, Industry 4.0 refers to industrial innovation and inventions that change not only production, but also workers' circumstances and industrial work in general.

At the workplace level, wages, hours of work and working conditions remain a challenge needing special attention in the digital transformation.

Many factories today, whether small or medium size - and to some extent micro-enterprises - are somehow linked into the global value chains driven by transnational corporations. Multiple layers of contractors and subcontractors are connected with transnational corporations (TNCs). Yet many of those production facilities are in poor condition, with workers doing repetitive tasks for long hours of work. However gruelling and demanding the task may be, this leaves no choice for workers who must compete with a large army of unemployed people.

Low union density and low membership coverage in collective agreements are also an ongoing trend in the manufacturing

sector. This will be aggravated by the expected reduction of the permanent workforce, replaced by temporary workers with no job security and limited access to legal rights (Gupta, 2016).

Furthermore, the deployment of automated machines or robotics as shown in Foxconn China's leading manufacturing factories, which mainly produce Apple's iPhone, threatens to replace an entire workforce with 'Foxbots' in the near future (Statt, 2016). With China's industrial strategy of 'Made in China 2025', more robots will be deployed in its manufacturing sector.

For some countries which can manage to mitigate the effect of job displacement due to digitisation, there will also be a possibility of reduction in the number of hours worked. However, for most of the developing countries, reduction of hours of work means reduction of workers' income, especially in those countries who does not have institutionalised social security protection.

The effect of Industry 4.0 on employment and industrial relations can be made fair, equitable and inclusive if it is based on social justice.

Role of trade unions

What role unions may play in this industrial transformation will be subject to their own analysis and actions. As Industry 4.0 will inevitably penetrate various industries faster and more deeply than we could imagine, trade unions must be prepared for the possible impact on employment, working conditions and workers' rights, and work towards a just transition that is fair and equitable. What do we mean by just transition? It means going beyond providing a safety net and compensation to those who will be affected to bring economic life into a social and democratic framework. A just transition should be a complete package of sustainable industrial policies and social programs that will allow workers to benefit from change, rather than bear its costs.

Trade unions' active participation in social dialogue at all levels is considerably important to prepare for this transformation. Unions also have to rethink strategies beyond the traditional ways based on old industrial relations models. Finding new modes of organising using new technology and new sources of power in the era of digitalisation is a must. Unions may organise workers online and through networks using the same technology that capital has been using. Where capital transform and uses Industry 4.0 as a platform of change, unions need to shift to Union 4.0. Though there is no one-size-fits-all model of transformation and no empirical base yet on how trade unions are preparing for this great technological transformation, unions in certain parts of the world are innovating to keep up with these changes. For example, in Italy, the Italian Federation of Metalworkers promotes professional training as right of workers that should be included in the national collective agreement of the metal sector. This paves the way for workers to adjust to the skills requirements of the companies or sector that will be effected by digitisation. Meanwhile, affiliates of IndustriALL in the Philippines are consolidating its sectoral unions and its alliances with organisations in preparation for sectoral dialogue with industry players to prevent employment dislocation.

Technological innovation and digital automation are here to stay. Inevitably there will be transformation. Trying to stop these transitions is not a winnable option. Trade unions have been most successful not in preventing transformations, but in making a potentially socially disastrous transformation a lot more liveable, and ensuring that workers, their families and society remain protected.

Trade unions must guard against ever-growing inequality in wealth distribution. We need a just transition to get there.

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