How Disruptive Will Automation Be?

The speed of change will determine how disruptive automation is to the future of work and society.

How is your leadership preparing for the future of work? Will digitisation lead to more work or less? Of course we live and work in the **digital age** but the change we've experienced so far is only the tip of the iceberg.

The potential impact of digitisation on employment not only concerns the explosive growth of intelligent robots, but also the significant influence that machine learning and artificial intelligence will have on our work. There is a strong, lively debate about the speed at which current jobs are disappearing and to what extent digital productivity growth will indeed lead to new jobs.

Experts have varied positions on what will happen to the size of the workforce, the timeline for change and the skills needed in the workplace of the future. They agree on one thing – the nature of work at all levels will change dramatically.

Expanding or contracting

Manual labour, such as that performed by drivers and mechanics, is decreasing due to the advent of autonomous vehicles and robots. Administrative and customer service jobs are declining due to self-learning algorithms. And highly qualified careers in **law** and **medicine**, for example, are changing due to artificial intelligence.

The optimist believes that, similar to the first Industrial Revolution, higher labour productivity will increase the demand for work. The pessimist says that there will be less work, because the fruits of productivity growth will only benefit a small group. There will be a surplus in the supply of labour and wages will drop, negatively affecting consumption and growth. Which side is right?

Optimists on the future of work primarily base their opinion on the classic macro-economic thinking that digitisation will lead to greater productivity and therefore economic growth. This growth will in turn lead to more employment opportunities, but the type of jobs is still unknown.

A Boston Consulting Group **study** analysed how digitisation will influence the industrial employment opportunities in Germany. This report examined the effects of the digital world on ten important industrial processes and the extent to which productivity will be increased. In their most likely scenario, digitisation would lead to a 5 percent increase in employment growth for the 23 analysed industries in 2025, despite the nature of the work changing dramatically.

Pessimistic predictions come from scientists and futurologists such as Silicon Valley entrepreneur Martin Ford in *The Rise of the Robots*, as well as MIT's Andrew McAfee and Erik Brynjolfsson in *The*

Second Machine Age. Their argument is that labour productivity will certainly increase, but only a very small group of people will profit from this: those who have capital goods, but primarily those who control the data, algorithms and intellectual rights. Working people will barely benefit so consumption will not grow and there is even a threat of deflation.

Quickly or slowly

One element that has received little attention regarding the future of work until recently is the speed at which these changes will take place.

The slower the change, the more time people will have to adjust their skills and present new ideas for work. A slow change reduces the risk of a surplus of job seekers. Data about ageing leads experts to believe that, in the coming decades, we will need an average 1 percent of productivity growth each year to compensate for the loss in the amount of employed people. With slow productivity growth, the labour force remains rather scarce and therefore fairly paid.

Another view on the speed of change looks primarily at the exponential increase in computing power. It concludes that the impact of robots and artificial intelligence on labour will proceed at the same incredibly rapid pace.

The McKinsey Global Institute recently published **"A future that works: automation, employment and productivity"**. This in-depth study contains detailed analyses of the technologies that can replace or improve human skills, and how they will impact various professional groups. It also looks at the factors that will influence the speed and level of automation. According to the report, currently known digital developments alone will cause that for at least 60 percent of jobs, 30 percent or more of the activities in those jobs will be automated. The speed of this replacement is not only dependent on technical feasibility. It is also influenced by the cost of developing and introducing applications. Economic benefits of innovation, such as savings on labour costs, as well as regulatory and social barriers, will play a part as well.

In the fastest change scenario of the study, the greatest development of technological automation will happen between 2025 and 2030, but wide adoption of these new working methods will most likely occur between 2030 and 2050. Economic, organisational and social factors more or less double the time needed to implement the technology. Full implementation of automation is predicted to take decades, according to this report. Yet those who foresee job losses believe in a much quicker pace of change.

Lessons for future work

As with any study of the future, we cannot know any outcome for sure. The challenge for policy makers and business leaders is therefore to develop scenarios and formulate the best proactive policy, allowing for gradual or fast adoption of digitisation in the workplace. In both cases, the main challenges are to take care that 1) the benefits of digital productivity growth are fairly shared, 2) the transition is managed as smoothly as possible and 3) useful new work is created. Different strategies, however, are needed for each scenario.

In the case of gradual transition, the emphasis must primarily be on retraining, the advancement of entrepreneurship and the prevention of imbalance of power. In the coming years nearly everyone will have to learn essentially new skills. This will not only be a question of where to find financial resources, but also of expertise. Teachers who can impart these skills need to be trained and new learning material will need to be created. In addition, digitisation of the workplace makes entrepreneurship more important, so that new work can compensate for the automated activities. Finally, in the digital world, the risk is that the bulk of data and artificial intelligence will end up in the hands of only one or two players. It will be up to the policy makers to prevent these players from gaining a disproportionate market share and profits.

For a fast transition, retraining and entrepreneurship will not be sufficient in response to the flood of released labour. Additional safety nets will have to be created to prevent social disquiet; protections which will not only assure people of a subsistence income, but will also allow them to maintain their **dignity**. Whether a **basic income** or another model works best for this must quickly be researched with the help of experiments so that, if required, the plans can be activated immediately. These incentives must be international because emerging economies may be the most severely affected by digital automation. The funding for these incentives could be provided by those who benefit from monopolies in the digital economy.

The coming years will be truly exciting. It will be necessary to take important strategic decisions which will determine the future of work, all in the face of uncertainty. It will be more important than ever for leaders to be open-minded and proactive rather than fall into a dogmatic battle of principles.

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