



[ericsson.com/  
consumerlab](http://ericsson.com/consumerlab)

# Creative machines

How artificial intelligence will  
impact the future labor market

An Ericsson Consumer & IndustryLab Insight Report  
June 2018

# Contents

- 03 A move that changed everything
- 04 The industrial revolution  
– the mechanical machine
- 05 The AI revolution  
– the cognitive machine
- 07 Machine creativity
- 08 The new tech elite
- 10 Impacting the many
- 11 What happens next?



## Methodology

Part of this report was built on insights gained from 19 in-depth interviews with academia and industry leaders on the topic of technology and innovation, carried out in 2017. The majority of interviews were conducted in the Bay Area, California, USA. However, a number of interviews were also conducted with industry leaders in Sweden and India. In addition, quantitative consumer survey data from the Ericsson Consumer & IndustryLab Analytical Platform gathered between 2000 and 2017 was used.

## About Consumer & IndustryLab

Ericsson Consumer & IndustryLab delivers world-class research, strategic design concepts and insights for innovation and sustainable business development. We explore the future of consumers, industries and a sustainable society in regards to connectivity by using scientific methods to provide unique insights on markets, industries and consumer trends. Our knowledge is gained in global consumer and industry research programs, including collaborations with renowned industry organizations and world-leading universities. Our research programs cover interviews with over 100,000 individuals each year, in more than 40 countries – statistically representing the views of 1.1 billion people.

All reports can be found at:  
[www.ericsson.com/consumerlab](http://www.ericsson.com/consumerlab)

# A move that changed everything

It was the second game in a best-of-five match between human Lee Sedol (world champion Go player) and AlphaGo (a computer program). Mid-game, AlphaGo made a move that forced Sedol out of this chair and out of the room, as the commentator stated in astonishment: “That was a really surprising move”.

This was the moment when Google DeepMind’s AlphaGo made the famous Move 37 in a game of Go, which has endless strategic and tactical possibilities. AlphaGo saw a strategy that went beyond human capabilities, making a move that had never been played by a human.

Since this happened on March 10, 2016, it has been described as the moment where artificial intelligence (AI) systems showed they could be truly creative.

## Was the AI system being creative?

This question is highly relevant in today’s debate on the future of jobs. It is central to understanding what roles AI systems will be capable of in the job market, and what it means for the human workforce.

In this report, we explore what impact the current AI-driven digital transformation of society has on jobs. We compare two revolutionary societal changes in order to understand where recent technological developments are leading us: the 19th-century industrial revolution and current digitalization culminating in AI implementation.

Artificial Intelligence (AI) is the field within computer science that seeks to explain and emulate, through mechanical or computational processes, some or all aspects of human intelligence. Typical areas of research in AI include natural language processing and synthesis, computer vision, problem solving, learning and advanced robotics.

## Key findings

### 1. Different levels of automation

- Industrial revolution: machines automated manual work tasks
- Today: machines also automate cognitive work tasks

### 2. The middle class pays the price

- Industrial revolution: skilled artisans were replaced by lower-skilled labor
- Today: job creation is declining in middle-skilled occupations while demand for high-skilled tech workers is increasing

### 3. Flexible machines demand flexible workers

- Industrial revolution: machines were inflexible; operation could be easily standardized and taught
- Today: machines are flexible and can evolve; handling requires skill and knowledge that cannot be easily reproduced

### 4. Creative work is no longer exempt

- All jobs where efficiency and productivity gains can be made will be impacted, including creative work

### 5. The new tech elite

- Between 2012 and 2016, the gap in internet use between higher and lower socioeconomic classes has doubled
- The tech elite will improve their productivity drastically using automation and AI, creating downwards economic pressure on more traditional middle-class professions

### 6. Lifelong learning needed on all levels

- Lifelong learning schemes need to be implemented in companies as well as schools
- Societies that foster continuous learning will be much better positioned to reap the considerable benefits of AI support

# The industrial revolution – the mechanical machine

Since the industrial revolution, employees have worried that new technology could make their jobs obsolete. The introduction of new machines in the early 19th century led to protests from the workforce.

As early as 1811, skilled textile workers (known as Luddites) rioted against mechanization of stocking and spinning frames in England.<sup>1</sup> Naturally, they felt threatened and indeed many jobs were lost in the textile industry. The number of hand weavers decreased from 240,000 in 1830 to 43,000 in 1850 – and there were only 10,000 by 1860.<sup>2</sup> However, we also have to take into consideration that handicraft workers during the industrial revolution were a considerably smaller group compared to the middle class in England today. Estimates show that there were approximately 330,000 handicraft workers in manufacturing (excluding laborers) in England and Wales in 1811. This accounted for only approximately 3 percent of the total population.<sup>3</sup> But even if the Luddites' worries were founded, not all jobs were actually replaced by machines.

Instead, the economy underwent continuous structural change and more technologically advanced machines improved the production process. While this did reduce the number of human jobs in certain industries, new labor-saving technologies also increased productivity and lowered prices – which, in turn, led to an increased aggregate demand.

As a result, jobs lost in some industries were often replaced by new job opportunities in others, driven by increased demand and new innovations. In 19th-century Wales and England, the share of total employment in the textile industry decreased from 10 percent of the workforce to 6 percent. But on the other hand, the corresponding share in mining increased from 2 percent to 9 percent, and employment in manufacturing of machines grew from 1 to 3 percent.<sup>4</sup>

## **The middle class pays the price**

Still, certain groups in society were particularly affected by the introduction of machines. Specifically, machines increased the productivity of lower-skilled workers more than that of handicraft workers belonging to guilds – as handicraft workers were replaced by a combination of machines and low-skilled workers. Employees from lower socioeconomic groups actually benefited as they became machine operators and took over the jobs from the artisan class, and saw their salaries rise, too.

Handicraft workers were between unskilled workers and the nobility on the socioeconomic scale. As the artisan class was virtually wiped out by the industrial revolution, it is fair to say that those in the socioeconomic middle (which we would call the middle class today) paid the price for the industrial revolution. At the same time, increased productivity among lower-skilled workers eventually resulted in more equal income distribution.<sup>5</sup>

<sup>1</sup> Sale, K. (1995), *Rebels Against the Future – Lessons for the Computer Age*, London: Quartet Books Limited,

<sup>2</sup> Clark, G. (2005), *The British Industrial Revolution, 1760–1860*, California: University of California Davis.

<sup>3</sup> Lindert, P. H. (1980), *English Occupations, 1670–1811*, *Journal of Economic History*, Cambridge University Press, 40(4), pp. 685–712.

<sup>4</sup> Shaw-Taylor, L. (2009), *The Occupational Structure of England and Wales, c. 1750–1911*, Paper prepared for the INCHOS workshop, Cambridge July 29–31.

<sup>5</sup> Executive Office of the President (2016), *Artificial Intelligence, Automation, and the Economy*, Washington D.C.

# The AI revolution – the cognitive machine

Today, machines are increasingly able to take over cognitive work from humans – which is freeing up human workers for other tasks.



As the machines introduced in the industrial revolution were inflexible, the work required to operate them could be described and standardized in work process charts. The operator's skill level was also easy to define and teach, making mass employment possible at this level. Workers with the skills to operate machines were also free to move between different types of machines and production lines.

But now, machines are more flexible and evolve over time, from constantly pushed updates to self-learning technology. This makes the role of machine operator more difficult to standardize, as it demands much higher mental flexibility and intellectual skills, and human operators must constantly re-educate themselves.

## Complementing or replacing?

AI systems have already been implemented in several industries, from financial services to cyber security.<sup>6</sup> In healthcare, it has the potential to support radiologists by scanning and identifying abnormalities in X-rays and making recommendations accordingly. This enables medical doctors to work more efficiently, as completing more scans in less time frees up time for other tasks.<sup>7</sup>

Medical doctors are highly skilled professionals and AI is currently only able to take on minor parts of their complex responsibilities. But when it comes to simpler tasks, AI systems can replace the human worker altogether. For example, the Swedish municipality of Trelleborg has assigned a robot for process automation and administrative tasks (such as handling applications for financial assistance and security alarms).<sup>8</sup> In this case, the robot is replacing semi-skilled work and the number of human workers needed has been reduced.

<sup>6</sup> IBM, Stories about how Watson and AI are changing business, retrieved Online, June 01 2018, <https://www.ibm.com/watson/ai-stories/index.html>

<sup>7</sup> IBM Watson Health (2016), Imagine your world with Watson, <https://www.ibm.com/blogs/watson-health/wp-content/uploads/2016/12/WHI-Overview-Executive-Brief.pdf>

<sup>8</sup> Swedish Radio (2018), Fler bidragstagare fick jobb när robot tog över ansökningar om stöd, January 8, available online: <https://sverigesradio.se/sida/artikel.aspx?programid=83&artikel=6856831> (in Swedish only)



**The individual benefit**

As individuals, people see benefits in improving their own efficiency at work. In the Ericsson ConsumerLab 10 Hot Consumer Trends 2017 report, we asked advanced internet users around the world about their views on AI technology at work. As shown in figure 1, up to 50 percent of workers thought having an AI to help them improve their work capacity or do simpler work tasks would be a good idea. Workers from widely different areas see the potential benefits of AI support at work, as there were just small differences between white- and blue-collar workers.

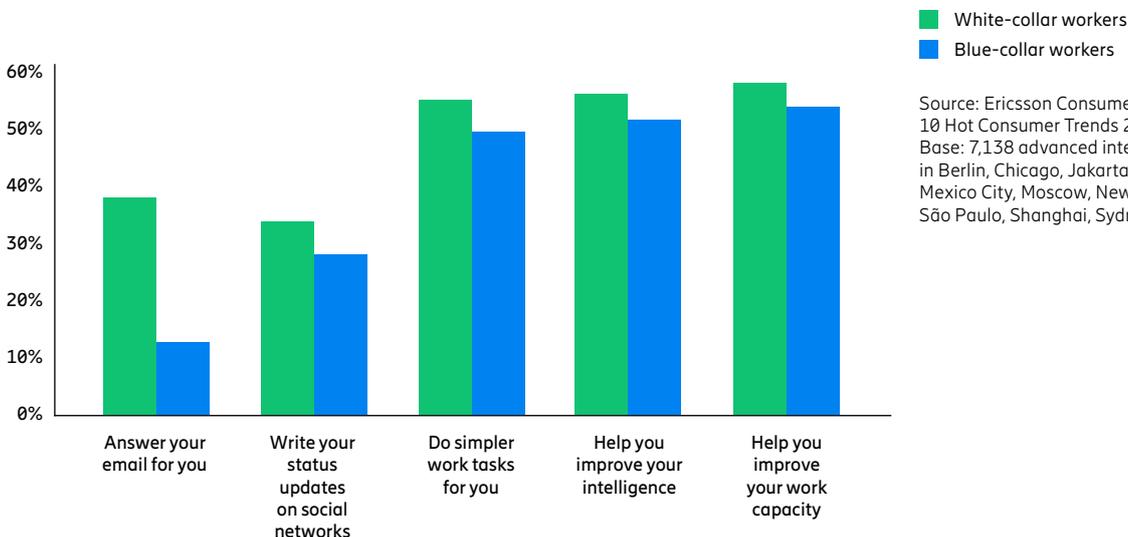
“One of the biggest fears people have is that AI will make them jobless. I don’t believe we will become jobless; given the direction and sectors AI is working on, there will be more new jobs that will open up. But that fear is driving people down, and we see two schools of thought – one very supportive of AI and one very much against. There should not be two schools of thought. When a job is taken away by AI, a much more enhanced activity can be done by a human.”

Radhika Jadcheria,  
Emerging Technologies Advisor

“Everyone agrees that creativity is a skill that will be difficult to automate, although there are many examples of efforts to automate human-level creative tasks. Or at least to speed up human-level creativity, so that 1 human being plus 1 AI could do the work of 10 creatives.”

James Hughes, Executive Director,  
Institute for Ethics and Emerging  
Technologies (IEET)

**Figure 1: Percentage who think AI help would be good in the following areas**



Source: Ericsson ConsumerLab, 10 Hot Consumer Trends 2017, 2016  
Base: 7,138 advanced internet users aged 15-69 in Berlin, Chicago, Jakarta, Johannesburg, London, Mexico City, Moscow, New York, San Francisco, São Paulo, Shanghai, Sydney, Tokyo and Toronto

# Machine creativity

Today, machines can perform certain cognitive tasks, but will it only be administrative and tedious tasks that we would like machines to do?

In the future, there is a strong possibility that jobs requiring higher skills and education will also become automated.<sup>9</sup> Even today, as well as substituting workers performing routine tasks, computer technology also complements their non-routine tasks.<sup>10</sup>

In the AlphaGo example, the AI completed a move that no human player had previously seen. This went beyond supporting or replacing a repetitive human task to create something new, showing the potential of AI. As machines are increasingly flexible and evolve over time, the complexity of the assignments they can do also develops. AI therefore has the potential to move into (and increase productivity within) cognitively demanding jobs like creative work.

In fact, AI is already used in creative work. For example Google's The NSynth Super<sup>11</sup> uses machine learning to help artists create new sounds – and IBM's Chef Watson<sup>12</sup> supports chefs in coming up with new ideas. Chef Watson was trained to know about different cooking schools and food chemistry, which gave it the ability to make original and inventive combinations. In this instance, AI is a creative tool for chefs needing to please a demanding customer base who expect constant innovation.

## AI in fashion

The fashion industry is also facing an increasingly demanding customer base. New trends are constantly emerging, meaning fashion companies must work quickly to transform on-trend designs into manufactured garments. Indian fashion company Myntra (part of Flipcart) has worked with AI-driven fashion for a long time. Their AI system works as a fashion designer for two of their brands. It browses social media platforms (like Instagram and Pinterest) to identify trending visual attributes of clothes (such as colors, patterns, cuts and materials) and suggests fashion designs. These designs are then evaluated by another AI system, and the ones deemed likely to succeed are sent to production. For the AI-designed brands, the first human intervention doesn't happen until the manufacturing process. Today, Myntra's AI fashion lines are very successful, and they have managed to shorten the turnaround dramatically.

"I think it is fair to say that every company has to become an AI company, similar to the shift 15–20 years ago when all companies had to become digital companies. AI will be the next phase."

Ananth Narayanan, CEO at Myntra

## The AI inventor

Another field AI is beginning to conquer is invention and patent drafting, and it is likely that they will be able to complete the entire inventive and patenting process autonomously.<sup>13</sup> However, generating patents this way may prove challenging, as patents with no practical application could clog up the system despite the considerable application costs. Human AI operators will need to steer the AI system towards meaningful patents, and people with such skills would likely become attractive on the labor market.

<sup>9</sup> Executive Office of the President (2016), Artificial Intelligence, Automation, and the Economy, Washington D.C.

<sup>10</sup> Autor, D. H., Levy, F. and Murnane, R. J. (2003), The Skill Content of Recent Technological Change: An Empirical Exploration, The Quarterly Journal of Economics, 118(4), pp. 1279–1333.

<sup>11</sup> <https://nsynthsuper.withgoogle.com/>

<sup>12</sup> Brandt, R. (2016), Chef Watson has arrived and is ready to help you cook, IBM Blog Post, January 1, available online: [www.ibm.com/blogs/watson/2016/01/chef-watson-has-arrived-and-is-ready-to-help-you-cook/](http://www.ibm.com/blogs/watson/2016/01/chef-watson-has-arrived-and-is-ready-to-help-you-cook/)

<sup>13</sup> Center for the Fourth Industrial Revolution (2018), Artificial Intelligence Collides with Patent Law, page 6, World Economic Forum, available online: [http://www3.weforum.org/docs/WEF\\_48540\\_WP\\_End\\_of\\_Innovation\\_Protecting\\_Patent\\_Law.pdf](http://www3.weforum.org/docs/WEF_48540_WP_End_of_Innovation_Protecting_Patent_Law.pdf), page 6.

# The new tech elite

As an individual becomes more skilled at operating an AI system, they will gain a competitive advantage. For instance, this would make a designer more efficient and productive – and enable them to pick up trends more accurately.

In the end, this designer could do the jobs previously conducted by a team of designers, so an organization would only need this designer rather than a team.

Their increased productivity means it is likely that these individuals will be in high demand. Their salaries will increase accordingly and a new tech elite could emerge – dividing the middle class into ‘lousy’ and ‘lovely’ jobs.<sup>14</sup>

As an example, figure 2 shows socioeconomic class (one’s economic and social position in relation to others, based on income, education and occupation) built on survey data from 25 countries gathered between 2000 and 2017, and analyzed by Ericsson Consumer & IndustryLab. Whereas

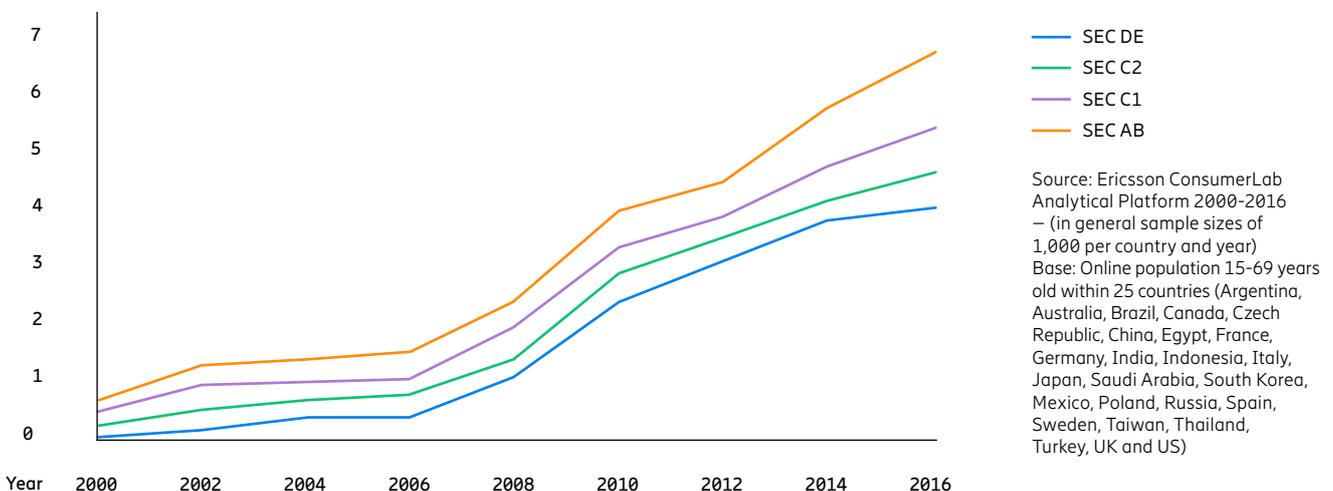
higher socioeconomic classes have always had higher internet usage than lower classes, the two highest socioeconomic classes have roughly doubled the gap in use of a number of internet services compared to lower classes between 2012 and 2016. This could indicate the formation of an elite upper-middle class who are benefitting from societal change due to digitalization. This argument strengthens when you take into account that higher internet use also correlates to higher income, which could show a rising upper middle-class elite related to digitalization and a downwards economic pressure on the more traditional middle-class people.

### The middle class pays the price – again

As AI drives digitalization in the labor market, it seems middle-skilled, middle-class workers are once again hardest hit by societal change – just like in the industrial revolution. Since the US financial crisis in 2008, losses have been far more severe in middle-skilled jobs than high- and low-skilled jobs.<sup>15</sup> Clerical, administrative, sales, blue-collar production, craft and operative occupations have also been declining since the late 1980s. Many new jobs are also being created, such as drone pilots, baristas and yoga instructors, but it is too early to know whether they will be able to fill the gap.

**Figure 2: Socioeconomic class and internet use**

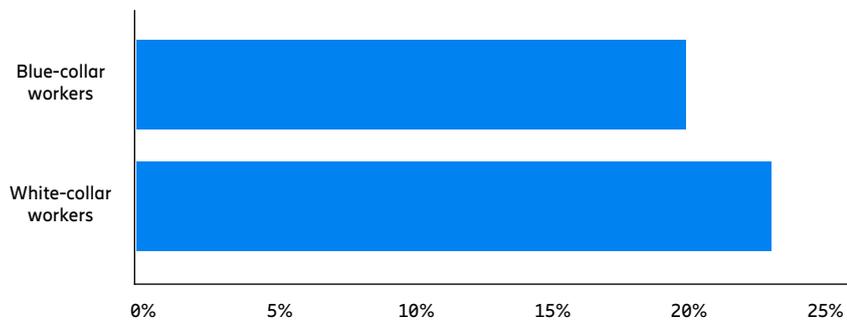
No. of internet services used regularly (email, browsing, instant messaging, social networking, streaming music, video, banking, online shopping) by online population within respective socioeconomic class\*



\* Official SEC classification per country in emerging markets and equivalent dividend based on HH-Income in mature markets.

<sup>14</sup> Goos, M. and Manning, A. (2003), Lousy and Lovely Jobs: the Rising Polarization of Work in Britain, London School of Economics and Political Science, London

<sup>15</sup> Autor, D. (2014), The Polarization of Job Opportunities in the U.S. Labor Market: Implications for Employment and Earnings, Centre for American Progress, Washington D.C.

**Figure 3: Percentage who believe that their job will be replaced by a robot before they retire**

Source: Ericsson ConsumerLab, 10 Hot Consumer Trends 2018, 2017  
 Base: 5,141 advanced internet users aged 15-69 in Johannesburg, London, Mexico City, Moscow, New York, San Francisco, São Paulo, Shanghai, Sydney and Tokyo

However, compared to the industrial revolution, the transition could potentially be less smooth this time. The AI revolution indicates that the main beneficiaries will be high-skilled rather than lower-skilled workers, which could lead to income differences. The shift in demand towards high-skilled labor could lead to higher relative wages for this group. In comparison, wage increases for middle-class jobs have slowed and are even showing negative development. An investigation of 25 advanced economies shows that 65 to 70 percent of households earned the same or less in 2014 compared to similar households in 2005.<sup>16</sup>

#### Will humans be redundant?

Just like in the early industrial revolution, employees today are concerned that new technology will impact their jobs.

In the Ericsson ConsumerLab 10 Hot Trends 2017 report, 2 out of 5 advanced internet users agreed that AI robots would soon lead to job losses.<sup>17</sup>

The following year, respondents were asked if they believed a robot would replace their own job before they retired – and as many as one in five still agreed fully with the statement.<sup>18</sup> As can be seen in figure 3, white-collar workers are just as worried as blue-collar workers, if not more so. This implies that people across job roles believe that work tasks or even whole occupations could be lost to machines in the future.

It is likely that many occupations will change rather than disappear. A study by Frey and Osborne found that 47 percent of US employees are at risk of being automated within 10 to 20 years.<sup>19</sup> However, it is worth noting that this research has been criticized for being based on occupations rather than tasks. Since occupations usually consist of a number of different tasks, the potential for automating entire occupations may be considerably lower – especially for traditionally high-skilled jobs, like medical doctors.

In comparison, according to Arntz et al. the risk of automation for jobs in 21 OECD countries is 9 percent on average, based on a task-based approach.<sup>20</sup> Another study based on a similar approach finds that 14 percent of jobs in OECD countries (participating in PIAAC survey of adult skills) are at high risk of being automated. The probability of this is over 70 percent. In addition, 32 percent of jobs have a 50 to 70 percent probability of being automated and are therefore likely to face significant changes in their job content.<sup>21</sup>

#### Lifelong learning needed on all levels

Given that many occupations will be impacted, it will be important to help create systems for lifelong learning, on a societal level as well as in companies. As job roles change, workers will need training to become more flexible and adaptable in their work styles. Lifelong learning schemes need to be implemented in schools as well as universities. Societies that collectively foster continuous learning will be much better positioned to reap the considerable benefits of AI support.

<sup>16</sup> McKinsey (2016), Poorer Than Their Parents? Flat or Falling, Incomes in Advanced Economies, McKinsey Global Institute, July.

<sup>17</sup> Ericsson ConsumerLab (2016), 10 Hot Consumer Trends 2017, available online: [www.ericsson.com/en/trends-and-insights/consumerlab/consumer-insights/reports/10-hot-consumer-trends-2017#trend1aieverywhere](http://www.ericsson.com/en/trends-and-insights/consumerlab/consumer-insights/reports/10-hot-consumer-trends-2017#trend1aieverywhere)

<sup>18</sup> Ericsson ConsumerLab (2017), 10 Hot Consumer Trends 2018, available online: [www.ericsson.com/en/trends-and-insights/consumerlab/consumer-insights/reports/10-hot-consumer-trends-2018#trend7leisuresociety](http://www.ericsson.com/en/trends-and-insights/consumerlab/consumer-insights/reports/10-hot-consumer-trends-2018#trend7leisuresociety)

<sup>19</sup> Frey, C. B. and Osborne, M. A. (2013), The Future of Employment: How Susceptible are Jobs to Computerization?, Working Paper, Oxford; University of Oxford.

<sup>20</sup> Arntz, M., Gregory, T. and Zierahn, U. (2016), The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis, OECD Social, Employment and Migration Working Paper, no. 189, Paris: OECD Publishing.

<sup>21</sup> Nedelkoska, L. and Quintini, G. (2018), Automation, skills use and training, Directorate for Employment, Labour and Social Affairs, Paris: OECD.

# Impacting the many

A major difference in comparison to the industrial revolution is the overall risk for societal disruption. When the artisan class employed in manufacturing was displaced, the overall impact was limited because it represented a relatively small group in society (3 percent in England in 1811).

The artisans are not directly comparable to today's middle class, which is defined by income rather than profession – but if it were to be impacted by a similar disruption, the effects would be greater, as the middle class is much larger. Today's middle class ranges from about 60 percent of the population in the USA to well over 80 percent in some European countries.<sup>22</sup>

Until now, studies have indicated that technology has created more jobs than it has destroyed.<sup>23</sup> However, the important question is whether digitalization and AI-based automation will be able to continue that trend on a much broader scale when current jobs in the large middle classes are affected.

Indications that stock market valuation and employment have become detached are concerning.

In 1962, the four US companies with the highest market cap (AT&T, GM, Exxon and DuPont) had a combined workforce of 1,420,000 – whereas the top 4 in 2012 (Apple, Exxon, Microsoft and Google) only had a combined workforce of 301,000.<sup>24</sup> Not only is that less than a quarter of the number of employees

(even though the overall American workforce has allegedly doubled in size in the same timeframe), but the current most valuable companies are also those that could be seen as driving digitalization.

Walmart was the company with the fifth largest market cap in 2012, with 2.2 million employees. This indicates the significant growth of retail during this 50-year timeframe – but by 2017, retail was represented by Amazon among the top 5. Although Amazon's workforce has risen sharply over the last few years, their workforce was just 566,000 in 2017.<sup>25</sup> This is almost three quarters smaller than Walmart's five years earlier. As an online retailer, digitalization is in Amazon's DNA – but given that the company is introducing automated stores,<sup>26</sup> the idea that they will be able to curb employee growth when also entering brick-and-mortar retail is not unimaginable.

However, if people start equating digitalization with job loss, this might create increasing resistance towards the products and services of such companies. In the longer term, it may be more profitable to take a more balanced approach.

“We already have robots demonstrating affective skills superior to human beings, like the ability to look at someone's face and interpret – from micro-expressions, skin temperature, or something else – the emotional state of a human being. I don't know if there is any domain that is 'safe' from automation.”

James Hughes, Executive Director, Institute for ethics and Emerging Technologies (IEET):

<sup>22</sup> Pew Research Center (2017), Middle Class Fortunes In Western Europe, April 24, available online: <http://www.pewglobal.org/2017/04/24/the-middle-class-is-large-in-many-western-european-countries-but-it-is-losing-ground-in-places/>

<sup>23</sup> Allen, K. (2015), Technology has created more jobs than it has destroyed, says 140 years of data, The Guardian, August 18, available online: <https://www.theguardian.com/business/2015/aug/17/technology-created-more-jobs-than-destroyed-140-years-data-census>

<sup>24</sup> Berger, E. (2017), Uncertain Futures: An Assessment of the Conditions of the Present, Zero Books

<sup>25</sup> Schlosser, K. (2018), Amazon now employs 566,000 people worldwide – a 66 percent jump from a year ago, GeekWire, February 1, available online: [www.geekwire.com/2018/amazon-now-employs-566000-people-worldwide-66-percent-jump-year-ago/](http://www.geekwire.com/2018/amazon-now-employs-566000-people-worldwide-66-percent-jump-year-ago/)

<sup>26</sup> Dastin, J. (2018), Amazon's automated grocery store of the future opens Monday, Reuters, January 21, available online: [www.reuters.com/article/us-amazon-com-store/amazons-automated-grocery-store-of-the-future-opens-monday-idUSKBN1FA0RL](http://www.reuters.com/article/us-amazon-com-store/amazons-automated-grocery-store-of-the-future-opens-monday-idUSKBN1FA0RL)

# What happens next?

By comparing the industrial revolution with the current AI-driven digital revolution, we see that machine operators who use machines to increase productivity sit at the center of the societal change in both eras.

The middle classes experience the biggest impact, as middle-skilled occupations are mainly transformed by automation.

As for the key differences between the revolutions, they are connected to the nature of the machines themselves. This time around the machines are more flexible and can learn over time; they constitute complex AI systems that demand higher mental flexibility and intellectual skills from the operator. This means that higher rather than lower-skilled workers are benefitting. In addition, while machines once implied heavy industry production, now they can be involved in precision surgery or the creation of music.

As a consequence, when we speculate about the future, we then implicitly speculate about what machines will be capable of. A likely scenario is that technological change will continue to accelerate. As the industrial revolution happened gradually, the negative impact was mostly limited to the artisan class. But if some or all of today's middle class (60 to 80 percent of industrialized societies) lost their jobs, the repercussions for society would be huge. For this reason, a public debate that also includes rather drastic measures, such as taxation of the robot workforce<sup>27</sup> and universal basic income, is to be expected.

We can also speculate about what AI experts call 'the intelligence explosion', where an AI system basically becomes sentient. But a more likely scenario is that the digital tech elite will form symbiotic relationships with AI-machines.

By forming creative teams with rapidly evolving AIs, they could make unprecedented leaps in productivity and



innovation. If this happens, it would be the digital elite who dominate the world, not the AIs. This evolution could cause major destabilization in the labor market, as well as political power shifts.

### Responsible businesses

In these scenarios, ensuring that AI is used responsibly will not only be important, but also potentially lucrative. In terms of ethics, companies that can identify potential challenges will be able to foresee or avoid such pitfalls – especially in relation to regulation, lawsuits and other costly processes. This proactive approach will also increase trust in their AI systems, which is likely to be increasingly important when working with highly flexible systems.

In addition, companies that take responsibility for their employees and foster lifelong learning will become attractive employers.

According to economists, measured productivity growth has declined in many countries since the global financial crisis in 2008. But the impact of new technology on productivity is often delayed due to complementary investments and innovations. This implies that the full productivity potential of AI has not been realized yet. And as improved productivity plays a key role in spurring economic development, it could be argued that global productivity growth will increase when organizations start to adjust to AI technology. This will also create excellent opportunities for developing countries to leapfrog others in their economic development.

If such economic growth is handled responsibly, there is the potential to increase the standard of living for everyone. This was also the long-term effect of the industrial revolution.

<sup>27</sup> Shiller, R. (2017), Why robots should be taxed if they take people's jobs, The Guardian, March 22, available online: [www.theguardian.com/business/2017/mar/22/robots-tax-bill-gates-income-inequality](http://www.theguardian.com/business/2017/mar/22/robots-tax-bill-gates-income-inequality)

Ericsson enables communications service providers to capture the full value of connectivity. The company's portfolio spans Networks, Digital Services, Managed Services, and Emerging Business and is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's investments in innovation have delivered the benefits of telephony and mobile broadband to billions of people around the world. The Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.

[www.ericsson.com](http://www.ericsson.com)