

Automation

Automation of workplaces and services continues to increase. Physical and cognitive tasks previously performed by people are now being done by machines and software. These developments have the potential to enhance peoples lives, as well as increase inequalities. There is considerable uncertainty about how developments will affect society since policy responses to automation are lagging behind applications.

What we're seeing

3 centuries of increasing automation

Since at least the industrial revolution workplaces & homes have become more automated. This has tended to increase productivity and safety, and created new types of work.¹ Now, though, some predict digitally-driven automation will lead to more jobs being lost than being created.

Jobs vs tasks

Such predictions are often unreliable. For industrial work, technical feasibility can be confused with economic viability. High unemployment can make it cheaper to employ low wage workers than install expensive robots.¹ The predictions can also confuse automating *jobs* with automating *tasks*. The latter are usually more common, with people continuing to work with or alongside machines and algorithms.²

Mechanical and cognitive automation

Automation is now taking over cognitive as well as physical tasks.³ This has the potential to disrupt many more types of work. Increasing attention is being paid to improving education and training to enable affected workers to adapt or find other roles.⁴

Automation risks embedding inequalities

Some imagine automated futures where people have more free time and the money to enjoy it. Four day working weeks reflect some productivity gains provided by more automated services. Others are concerned that robots and algorithms will maintain, or increase, inequalities. Some analyses found that increasing use of industrial robots can lead to lower wages and fewer jobs. But more studies are needed.⁵

Algorithmic biases

Biases in algorithms are a recognised, but difficult challenge. They can lead to unanticipated and unfair outcomes. There is also concern that people become mere data points in decision-making, both at work and at leisure.⁶ However, community-led approaches are now using artificial intelligence for their own benefits.⁷

Automation in sports

Robots and automation may become increasingly used at sporting events and in sporting facilities to improve spectator experiences. As well as to assist with training.⁸

Robots improving mobility

Robotics and smart prosthetics are being used to improve the mobility of people. As they evolve to become more suited for the general population such devices could increase active recreation of both younger and older people.^{9,10}

Potential implications

Create

- Automation decreasing working hours, providing more time for recreation

Relate

- Greater personalisation of services

Consume

- Participant and spectator experiences enhanced through automation
- Increased productivity can lead to increased consumption

Degrade

- Opportunities for social & economic advancement may decrease
- Connections between people may become weaker through automation

Connect

- Increased participation and social connection through improved mobility

Define

- Agree on what it is desirable to automate, not what can be automated
- Redefine what is meaningful and valued human work

More information (links)

¹ [The problem with blaming robots for taking our jobs](#)

² [Artificial intelligence will replace tasks, not jobs](#)

³ [AI index report 2022](#)

⁴ [Understanding the impact of automation on workers, jobs, & wages](#)

⁵ [A new study measures the actual impact of robots on jobs](#)

⁶ [Understanding algorithmic bias and how to build trust in AI](#)

⁷ [A new vision of artificial intelligence for the people](#)

⁸ [10 ways how robots will positively impact sports](#)

⁹ [Robotic exoskeletons promise increased mobility and job assistance](#)

¹⁰ [Robot power can improve mobility in seniors](#)