

The impact of artificial intelligence on work

An evidence synthesis on implications
for individuals, communities, and societies

SUMMARY



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AI and work

Artificial intelligence (AI) technologies are developing apace, with many potential benefits for economies, societies, communities, and individuals. Realising their potential requires achieving these benefits as widely as possible, as swiftly as possible, and with as smooth a transition as possible.

Across sectors, AI technologies offer the promise of boosting productivity and creating new products and services. These technologies are already being applied in sectors such as retail, manufacturing, and entertainment, and there is significant potential for further uptake, for example in pharmaceuticals, education, and transport.

With this potential, come questions about the impact of AI technologies on work and working life, and renewed public and policy debates about automation and the future of work.

Although much of the public and policy debates about AI and work has tended to oscillate between fears of the ‘end of work’ and reassurances that little will change in terms of overall employment, evidence suggests that neither of these extremes is likely. However, there is consensus that AI will have a disruptive effect on work, with some jobs being lost, others being created, and others changing.

While technology is often the catalyst for revisiting concerns about automation and work, and may play a leading role in framing public and policy debates, it is not a unique or overwhelming force, and non-technological factors – including political, economic, and cultural elements – will contribute to shaping the impact of AI on work and working life.

A range of studies and authors have made predictions or projections about the ways in which AI might affect the amount, type, and distribution of work.

THE IMPACT OF AI ON WORK: CONFIDENCE IN CURRENT PROJECTIONS

There is consensus in academic literature that AI will have a considerable disruptive effect on work, with some jobs being lost, others being created, and others changing.

There are many different perspectives on ‘automatability’, with a broad consensus that current AI technologies are best suited to ‘routine’ tasks, albeit tasks including complex processes, while humans are more likely to remain dominant in unpredictable environments, or in spheres that require significant social intelligence.

Studies of the history of technological change demonstrate that, in the longer term, technologies contribute to increases in population-level productivity, employment, and economic wealth. However, such studies also show that these population-level benefits take time to emerge, and there can be significant periods in the interim where parts of the population experience significant disbenefits.

Evidence from historical and contemporary studies indicates that technology-enabled changes to work tend to affect lower-paid and lower-qualified workers more than others. This suggests there are likely to be significant transitional effects, which cause disruption for some people or places.

Over the last five years, there have been many projections of the numbers of jobs likely to be lost, gained, or changed by AI technologies, with varying outcomes and using various timescales for analysis. Most recently, a consensus has begun to emerge from such studies that 10–30% of jobs in the UK are highly automatable. Many new jobs will also be created. The rapid increase in the use of administrative data and more detailed information on tasks has helped improve the reliability of empirical analysis. This has reduced the reliance on untested theoretical models and there is a growing consensus about the main types of jobs that will suffer and where the growth in new jobs will appear. However, there remain large uncertainties about the likely new technologies and their precise relationship to tasks. Consequently, it is difficult to make predictions about which jobs will see a fall in demand and the scale of new job creation.

Implications for individuals, communities, and societies

This disruption has different implications for different people and places.

In recent years, technology has contributed to a form of job polarisation that has favoured higher-educated workers, while reducing the number of middle-income jobs, and increasing competition for non-routine

manual labour. Concentration of market power may also inhibit labour's income share, competition, and productivity.

One of the greatest challenges raised by AI is a potential widening of inequality, at least in the short term, if some workers are disproportionately affected and benefits are not widely distributed.



The extent to which technological advances are – overall – a substitute for human workers depends on a balance of forces, including productivity growth, task creation, and capital accumulation. The number of jobs created as a result of growing

demand, movement of workers to different roles, and emergence of new jobs linked to the new technological landscape all also influence the overall economic impact of automation by AI technologies.

Potential policy responses

Policymakers can shape the way that these novel technologies affect the economy and workforce. In the context of AI and work, two policy-related priorities emerge:

- Supporting the use of AI technologies to improve productivity; and
- Ensuring that the benefits of AI technologies – and the productivity gains they support – are shared across society.

Potential areas for policy makers to explore include:

- Ensuring that the workers of the future are equipped with the education and skills they will need be ‘digital citizens’;
- Addressing concerns over the changing nature of working life, for example with respect to income security and the gig economy, and in tackling potential biases from algorithmic systems at work;
- Meeting the likely demand for re-training of displaced workers through new approaches to training and development; and
- Introducing measures to share the benefits of AI across communities, including by supporting local economic growth.



In the face of significant uncertainty about the nature of work over the next few years and decades, the case for the UK to adopt a broader post-16 curriculum is strong. Educating young people in the sciences, maths, arts,

and humanities could equip them with a wider range of skills and the ability to think, interpret, and understand across several disciplines and provide a stronger basis for lifelong learning.



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Issued: September 2018

Cover image: ©danielvfung/iStock

Design by Soapbox, www.soapbox.co.uk