



Association of Accounting Technicians (AAT) response to the Commission on Workers & Technology call for evidence

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1. Introduction

- 1.1. The Association of Accounting Technicians (AAT) is pleased to have the opportunity to respond to this Call for Evidence published on 06 August 2018.
- 1.2. AAT takes the workplace challenges and opportunities created by new technology very seriously.
- 1.3. This is partly demonstrated by our work with the National Cyber Security Centre (NCSC) in relation to not only ensuring an acceptable level of cyber security for AAT members, especially AAT's 4,250 licensed accountants, but in relation to the help and advice that members in turn provide to their clients or employer.
- 1.4. Likewise, AAT has established a Digital Advisory Panel comprising representatives from academia, insurance, banking, Microsoft, Sage, HMRC and regulators. The panel meets twice a year to discuss impacts of the Fourth Industrial Revolution on AAT, the accountancy profession and the wider economy.
- 1.5. With developments such as Making Tax Digital (MTD) and further digitisation, the role of the accountant and bookkeeper is likely to change considerably over the next few years.
- 1.6. AAT is determined to ensure this is adequately reflected in both the qualifications being taken by the 90,000+ individuals who take AAT qualifications each year (including 16,000 apprentices) and the Continuing Professional Development (CPD) requirements for AAT's 50,000 full members.

2. Executive summary

- 2.1. **Every sector of the UK economy, at all levels of seniority from the shop floor to the boardroom, and across regions, has the potential to benefit from the technological advances of the future.**
When sufficiently engaged with the process of automation and understanding the opportunities it can create, most workers embrace change rather than seeking to resist it.
- 2.2. **Meaningful Government support for upskilling and reskilling existing workers is already important but soon it will become essential.**
International examples from South Korea, Germany and Singapore are worth considering as detailed below.
- 2.3. **Automation, AI and the increasing use of robots is already having an impact on productivity.**
There are myriad ways in which technology can help UK businesses to prosper. Many of these require not just hardware or software but digitally skilled employees to make this a reality.
- 2.4. **The Commission should seek to engage with both the Centre for Data Ethics & Innovation and the House of Lords Committee on Artificial Intelligence (AI) for the purposes of considering the most ethical and appropriate means of dealing with new technological changes and opportunities.**

3. AAT response to the public call for evidence

What technological changes are likely to have the greatest impact, in terms of both opportunities and challenges, on workers in Britain between now and 2030?

- 3.1. AAT's Digital Advisory Panel - consisting of representatives from the insurance, banking and accountancy professions as well as the software industry, regulators and academia - has consistently highlighted that it will be repetitive, mundane, rules-based tasks that are ripe for automation.
- 3.2. There are numerous areas of the economy that are highly likely to be affected, from telemarketing and shop cashiers to credit analysts and insurance underwriting.
- 3.3. For obvious reasons, AAT is most interested in the impact automation is likely to have on the accountancy profession.
- 3.4. H&R Block, probably the largest tax preparation provider in the US, serves as a good example of what is to come in the accountancy sector. H&R Block uses IBM's Watson to great effect. Their web site succinctly describes the service;

"Imagine being able to understand all 74,000 pages of the U.S. tax code along with thousands of yearly tax law changes and other information. Plus, Block's deep insights built from over 600 million data points. Yes, 600 million. That's the future we're building with Watson. By combining the power of our Tax Pros with Watson's technology, we'll uncover every deduction and credit available to you. So that you get every last cent you deserve."

- 3.5. Closer to home, here in the UK, AAT is seeing rapid increases in the use of technology by accountancy firms large and small, but its adoption varies widely, and much is driven by Government led changes such as Making Tax Digital (MTD).
- 3.6. Jobs least likely to be automated include the main trades - there will long be a need for plasterers, plumbers and electricians.
- 3.7. There is a common misconception that jobs with high degrees of creativity are inappropriate for automation. Indeed, a 2015 Nesta study concluded as much¹. Considering the work of Google's AMI (Artists and Machine Intelligence)², such certainty appears misplaced.

How can technological change be best managed and promoted so as to have a positive effect for workers?

National public policy

- 3.8. The accountancy sector provides a good example of British tech businesses taking advantage of Government driven automation.
- 3.9. The Government's £1.3bn "Making Tax Digital" investment programme to make HMRC the most digitally advanced tax administration in the world has led to the likes of Xero, Intuit, QuickBooks and Sage developing more consumer-friendly software packages for large and small businesses and their agents. Whilst much of this may have occurred organically, there can be little doubt that Government imposed deadlines have ensured faster development, increased understanding and wider take-up.
- 3.10. This example suggests that Government can play an effective role in increasing the adoption of automation and the development of tech products by setting relevant frameworks and imposing realistic deadlines for change.

¹ Nesta, 2015:
http://www.thecreativeindustries.co.uk/media/292766/creativity_vs_robots_wv.pdf

² AMI:
<https://ami.withgoogle.com>

Support for workers to adapt and re-train

- 3.11. Last year, AAT and City & Guilds jointly commissioned a report into “*Lifelong learning for ageing workers*”³, which made several detailed recommendations as to how older workers could be encouraged back into the workplace.
- 3.12. The Commission may wish to consider the report's recommendations which include; improving the capacity of JobCentre Plus to provide tailored advice to older workers; encouraging employers to implement workplace mentoring schemes and to incorporate mid-life career reviews as well as urging learning providers to rethink the content, marketing and delivery of courses to improve their appeal to older workers. AAT also recommended that it would also be sensible to pilot new funding streams and ways of signposting funding to assess the impact on loan uptake among the over-50s.
- 3.13. In Singapore the Future Skills Credit, a \$500 credit paid directly to the training provider, is available to any Singapore Citizen over the age of 25 for retraining purposes.⁴ In South Korea, the unemployed are entitled to almost \$2,000 for vocational education and training.
- 3.14. In the UK by contrast, HM Treasury and HMRC remain undecided about whether to join the two thirds of OECD nations who already allow self-funded work-related training to be deducted from taxable income. AAT responded to the 2018 consultation on the subject, suggesting reform was long overdue and that Government proposals did not go far enough ⁵.
- 3.15. Meaningful Government support for upskilling and reskilling existing workers is already important but soon it will become essential.
- 3.16. Without such support the UK risks falling behind our global competitors and facing a future with higher unemployment rates and stagnating, possibly falling, incomes.

Workforce Productivity

- 3.17. In 2014, Jürgen Maier, Siemens UK & Ireland Chief Executive, said that Britain was catching up with German levels of productivity but four years on much continues to be made of the often-repeated statement that it now takes a UK employee five days to produce what his or her counterpart in Germany can deliver in four days.
- 3.18. Comparisons to other countries are not always helpful given UK employees work more hours over the year than those in France and Germany⁶, and there is a higher rate of employment, so it is important to put these numbers into context.
- 3.19. Irrespective of the merits of international comparisons, the UK does not have the best rates of productivity and addressing this shortcoming would provide many benefits.
- 3.20. Of course, there are numerous factors that can contribute towards poor productivity other than technology - a lack of investment, low pay, access to and quality of infrastructure and so on.
- 3.21. Simply investing in and improving technology may not be a panacea but it is perhaps the most significant piece of the productivity puzzle given recent estimates suggest Britain's manufacturing sector alone could unlock £455bn over the next decade, creating thousands of jobs if it were to embrace the fourth industrial revolution.⁷
- 3.22. Automation, AI and the increasing use of robots is already having an impact on productivity.

³ **Lifelong learning for ageing workers, March 2017:**

http://www.policyconnect.org.uk/sc/sites/site_sc/files/report/461/fieldreportdownload/spotlightonolderworksskillscommissionreport.pdf

⁴ **Singapore, Future Skills Credit:**

<http://www.skillsfuture.sg>

⁵ **Taxation of self-funded work-related training:**

<https://www.aat.org.uk/prod/s3fs-public/assets/Taxation-of-self-funded-work-related-training.pdf>

⁶ **OECD:**

<https://data.oecd.org/emp/hours-worked.htm>

⁷ **Made Smarter, October 2017:**

<http://industrialdigitalisation.org.uk/wp-content/uploads/2017/10/Made-Smarter-Review-Final-Report-2017.pdf>

- 3.23. In 2015, the Centre for Economic Performance at the London School of Economics concluded that GDP and labour productivity between 1993 and 2007 increased by about 0.36 and 0.37% respectively across the 17 countries that they studied. This equates to 10% of total GDP growth in the countries studied over this period⁸.
- 3.24. A Centre for Economics and Business Research (CEBR) study published last year was solely concerned with the impacts on GDP per capita and labour productivity and found that robots were responsible for 10% of GDP growth across the 23 OECD countries between 1993 and 2015.⁹
- 3.25. Given the evidence above (3.23 & 3.24) Government could and should be investing more in this area.
- 3.26. According to the 2018 Automation Readiness Index, Germany is investing over 200m euros in digital manufacturing. In the UK, much was made of the £18.4m Government funding for digital manufacturing announced late last year¹⁰. This level of discrepancy may go some way to explaining why the UK ranks 8th in the Index compared to second placed Germany.
- 3.27. There are myriad ways in which technology can help UK businesses to prosper. Many of these require not just hardware or software but digitally skilled employees to make this a reality.
- 3.28. For example, many businesses are failing to turn their data into usable information. Data, as Facebook would testify, has huge financial value but companies need staff who can analyse and identify what may be valuable in informing business decisions to improve services and products.
- 3.29. Linked to productivity is the issue of taxing technology. AAT, representing a sector most likely to be affected by automation and AI, is concerned by suggestions of taxing robots and believes that this would be entirely self-defeating and completely unacceptable.
- 3.30. To purposefully undermine investment in technology that is proven to increase productivity, make companies - and in turn the UK - more competitive, would consign British business to a second or third-rate existence in the global economy.
- 3.31. Furthermore, given automation leads to the necessary reskilling and upskilling of workers, taxing robots would help to ensure workers lacked the necessary skills not only to compete but to remain in meaningful employment. It will additionally prevent the salary increases that almost inevitably come with increased skills and training.
- 3.32. It is perhaps understandable that structural change brings a degree of nervousness amongst policymakers but taking a 19th century approach to the subject would undoubtedly prove ruinous.

How might technological change affect models of work and working practices?

- 3.33. Trade unions and policymakers should start from a positive position of seeking to embrace change, taking workers with them. This can be difficult when there is a plethora of surveys, polls and research that indicates many people have a fear of the future and a significant number believe they may lose their job because of automation. This encourages worst case scenario planning rather than dealing with reality.
- 3.34. Indeed, the Commissions own polling this week further demonstrates the pervasive nature of such an approach. A fear of losing out to automation is very different from this happening or even being likely to happen, irrespective of how many people state this.

⁸ Centre for Economic Performance, 2015:

<http://eprints.lse.ac.uk/61155/>

⁹ CEBR, 2017:

https://cebr.com/wp/wp-content/uploads/2017/03/Impact_of_automation_report_23_01_2017_FINAL.pdf

¹⁰ Over £18 million to go to manufacturing innovation, November 2017:

<https://www.gov.uk/government/news/over-18-million-to-go-to-manufacturing-innovations>

- 3.35. A 2013 study estimated 47% of jobs in the USA had a high probability of becoming automated and this has often been put forward as an employment apocalypse type scenario that needs immediate attention. Even the House of Commons library research paper (2016) published in advance of a Parliamentary debate on the subject two years ago did so¹¹.
- 3.36. However, in April this year the authors of the 2013 report stated that,
- “Our estimates have often been taken to imply an employment apocalypse. Yet that is not what we intended or suggested. All we showed is that the potential scope of automation is vast, just as it was at the eve of the Second Industrial Revolution...”¹²*
- 3.37. When sufficiently engaged with the process and understanding the opportunities it can create, most workers embrace change rather than seeking to resist it.
- 3.38. For example, in a recent survey of AAT members, 60% said that they believe basic accountancy processes will be fully automated within the next five years. However, far from being something to fear or worry about, 89% welcomed these advances in technology as being positive for the accountancy sector.
- 3.39. This is further explained by feedback from members at our Panels, focus groups and workshops who consistently state that automation is creating more time for them to concentrate on other, often higher value work and that far from resulting in job losses, for many firms it is already resulting in job creation.
- 3.40. Professional services aside, critics have highlighted the likely plight of manual workers in the face of technology. HGV drivers, of which there are 600,000 in the UK, are often held up as an example of soon to be discarded workers owing to the advent of driverless vehicles, not least by their own representative bodies. The reality is likely to be very different.
- 3.41. Self-driving trucks will probably be in use up and down motorways across the UK soon, but it will be many decades before they can be driven in highly built-up urban areas or on industrial sites. Most tech firms working in this space, from Alphabet to Uber, are working on the basis that human drivers will be required to take over for the beginning and end of journeys. Driverless technology will improve safety, increase reliability and reduce costs thus being likely to increase demand. Increased demand is likely to see a greater need for drivers rather than reducing the need.
- 3.42. It is also worth considering that there is a huge shortage of lorry drivers in the UK, that many are put off by the long hours spent driving and that a technologically enhanced driving role may well prove to be a more attractive proposition.
- 3.43. Technology will lead to things being done differently, often in unexpected ways, this can be a great opportunity for employment of all kinds and in turn those representing such workers.

As the disruptive effects of technological change on workers are likely to have a disproportionate effect upon certain groups and areas, what attention is required to ensure that the positive effects of new technologies are distributed across the workforce?

- 3.44. Whilst some jobs will be lost because of automation, it is likely that many more will be created.
- 3.45. The Government has already acknowledged that for the UK to be a world leading digital economy that works for all, it is crucial that everyone has the digital skills they need to fully participate in society¹³ and AAT is sure that the Commission would share this view.

¹¹ House of Commons research paper, September 16, 2016:

[file:///aat/shares/users\\$/Phil.Hall/Downloads/CDP-2016-0153.pdf](file:///aat/shares/users$/Phil.Hall/Downloads/CDP-2016-0153.pdf)

¹² 13 April 2018:

https://www.oxfordmartin.ox.ac.uk/opinion/view/404?mc_cid=02727c3324&mc_eid=f077a85182

¹³ Digital Skills Partnership Board, November 2017:

<https://www.gov.uk/government/publications/the-digital-skills-partnership/the-digital-skills-partnership-board-board-members-and-terms-of-reference>

- 3.46. In relation to young people, given all jobs in the future are likely to require some form of basic digital skills understanding, a requirement for all students to have basic digital skills at GCSE grade 4 (grade C) or above in the same way that most employers currently require for GCSE Maths and English, would be a welcome statement of Government intent and of ensuring young people, parents and employers appreciate the rapidly increasing importance of digital skills.
- 3.47. With regard to older workers, some believe that they are less likely to adapt well to change and/or to reskill and upskill and whilst there may be some evidence to support this, there is also much evidence to the contrary. For example, over 3,000 of AAT's 90,000 students are aged over 50 and this age group has been rising steadily year-on-year for several years. It would therefore be imprudent to make assumptions based purely on age.
- 3.48. It is also worth highlighting gender issues in relation to digital skills. Women are underrepresented in both the uptake of digital qualifications and in digital roles with just 17% of people who work in the tech sector and only 10% of students taking computer science at A level being female.
- 3.49. There are a range of steps being taken by industry to combat this problem e.g. Future Tech Girls¹⁴ and Facebook's She Means Business¹⁵ programme but more could be done by Government to disseminate information about available programmes and an emphasis on this area in an updated Careers Strategy would be helpful.

What best practice globally and in the UK should the Commission learn from to ensure that the challenges of technological change are handled effectively?

- 3.50. AAT this week detailed views on ethics in relation to data and digital innovation in a response to the Department for Digital, Media, Culture & Sport (DCMS) consultation on the new Centre for Data Ethics & Innovation. Rather than repeat such views, they can be read in full here: <https://www.aat.org.uk/prod/s3fs-public/assets/AAT-response-DCMS-consultation-Centre-Data-Ethics-Innovation.pdf>
- 3.51. In short, AAT supports the proposed activities of the Centre and believes they will help to ensure the UK remains at the forefront of efforts to harness data and AI as a force for good. The Centre should play a key role in ensuring technological change is appropriately handled and the Commission should look to work closely with the Centre on such issues.
- 3.52. The Commission should also consider the recent recommendations of the House of Lords Committee on AI who published a report¹⁶ suggesting that a cross-sector AI Code be adopted nationally, and internationally. The Committee's suggested five principles for such a code included requirements to operate on principles of intelligibility and fairness, for the common good and benefit of humanity and that all citizens should have the right to be educated to enable them to flourish mentally, emotionally and economically alongside artificial intelligence. AAT believes these are sensible principles to adopt.
- 3.53. The same report also concluded that, *"...at earlier stages of education, children need to be adequately prepared for working with, and using, AI. The ethical design and use of AI should become an integral part of the curriculum."* AAT again believes such conclusions are sound.

¹⁴ TechFuture Girls:

www.techfuturegirls.com

¹⁵ She Means Business:

<https://shemeansbusiness.fb.com/uk/>

¹⁶ House of Lords, AI in the UK, Ready, Willing & Able, April 2018:

<https://publications.parliament.uk/pa/ld201719/ldselect/ldai/100/100.pdf>

4. About AAT

- 4.1. AAT is a professional accountancy body with approximately 50,000 full and fellow members and over 90,000 student and affiliate members worldwide. Of the full and fellow members, there are more than 4,250 licensed accountants who provide accountancy and taxation services to over 400,000 British businesses.
- 4.2. AAT is a registered charity whose objectives are to advance public education and promote the study of the practice, theory and techniques of accountancy and the prevention of crime and promotion of the sound administration of the law.

5. Further information

- 5.1. If you have any queries, require any further information or would like to discuss any of the above points in more detail, please contact Phil Hall, AAT Head of Public Affairs & Public Policy:

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